

*Fukushima-is-still-news*

- vol. 4 –

# **Nuke Safety 2012-2015**



**Odile Girard**



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# INTRODUCTION

J'ai « découvert » l'écologie au début des années 70, croisant dans le même temps la pollution, les luttes paysannes et la malbouffe, la médecine qui avait (déjà) perdu son âme, les mouvements sociaux et bien sûr le nucléaire qui a occupé une grande partie de ma vie.

Après la catastrophe de mars 2011 au Japon, j'ai suivi chaque jour une partie des grands journaux japonais anglophones pour essayer de sauvegarder un maximum d'articles ayant trait à Fukushima. L'idée était de conserver une sorte d'archive accessible à tous, qu'ils soient écrivains, journalistes ou tout simplement intéressés.

Le blog « [Fukushima-is-still-news](#) » a été poursuivi jusqu'en 2019. Ci-dessous, la conclusion parue le jour où j'ai décidé d'arrêter mon blog.

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## End of March 2019: Time to stop this blog

29 Mars 2019

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I have been collecting and spreading information on the Fukushima disaster for more than 8 years. More than ever I am convinced that the name of my blog « Fukushima-is-still-news » was aptly chosen. Or perhaps i should have called it « Fukushima should still be news ». What i'm getting at is that i know the disaster is going on and we cannot simply forget Fukushima and turn the page. But the mode of action I chose 8 years ago has its limits and it is time for me to stop this blog.

I don't want the contents to be lost, so I will try and publish the lot with the Éditions de Fukushima so that the information remains available online.

Good bye for now. I am not doing a disappearing act. I'm still there tracking what's going on in the world of nukes.

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C'est maintenant chose faite. Le blog *fukushima-is-still-news* est désormais disponible aux Éditions de Fukushima. Une fois de plus merci à mon ami Pierre, qui m'a convaincue à l'époque de tenir ce blog et m'a aidée à le lancer.

Odile Girard

<i>Explication des différentes couleurs de texte utilisées :</i>	<i>Why different colours in the print ?</i>
<ul style="list-style-type: none"><li>• <i>Tous les titres originaux (issus pour la plupart des journaux japonais) sont en noir.</i></li><li>• <i>Les titres qui apparaissent en bleu sont des résumés de l'article/des articles suivant(s).</i></li><li>• <i>Les parties en rouge représentent des infos particulièrement intéressantes ou révélatrices.</i></li></ul>	<ul style="list-style-type: none"><li>• <i>All the original titles (from the Japanese newspapers for the most part) are in black.</i></li><li>• <i>Some extra titles appear in blue: they are an attempt to summarise the following article(s).</i></li><li>• <i>Whatever appears in red in the text underlines some information I found particularly interesting or revealing.</i></li></ul>

Le présent volume est le quatrième d'une collection de 16 ouvrages qui sont édités petit à petit.

**Vol. 1 : Daiichi Nuclear Plant (2012-2014)**

**Vol. 2 : Daiichi Nuclear Plant (2015-2019)**

**Vol. 3 : Radioactive Fallout And Waste,  
No.4 Fuel Removal,  
Nuclear Workers,  
and UN Conference**

<b>Vol. 4 : Nuke Safety (2012-2015)</b>
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**Vol. 5 : Nuke Safety (2016-2019)**

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**Vol. 7 : Practical Problems For The Japanese Population (1)**

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May 9, 2012

## Onagawa nuclear plant - 600 meters of concrete sea wall

### New sea wall erected to guard Onagawa nuclear plant against tsunami

<http://mainichi.jp/english/english/newsselect/news/20120509p2g00m0dm040000c.html>

SENDAI (Kyodo) -- A new sea wall has recently been erected at the Onagawa nuclear power plant in Miyagi Prefecture to guard the seaside complex against possible tsunami and was shown to local assembly members on Tuesday.

The sea wall, built in the wake of the nuclear disaster in nearby Fukushima Prefecture triggered by the March 2011 earthquake and tsunami, is about 3 meters tall, effectively making it a 17-meter sea wall given that it is built on ground about 14 meters above sea level.

The concrete structure, built at the Tohoku Electric Power Co. nuclear power complex in the town of Onagawa and the city of Ishinomaki, stretches about 600 meters along the Pacific coast. It was shown Tuesday to Ishinomaki assembly members in a guided tour.

All operating commercial nuclear reactors in the country have gone offline amid public concern over the safety of nuclear reactors in the aftermath of the disaster at the Fukushima Daiichi nuclear power plant.

May 10, 2012

## Just hide it, it's cheaper

### Experts suggest burying all plutonium underground

[http://www3.nhk.or.jp/daily/english/20120510\\_22.html](http://www3.nhk.or.jp/daily/english/20120510_22.html)

A US research team has suggested **burying all plutonium stockpiles underground, to avoid the high cost of recycling it as fuel and the risk of it being used by terrorists.**

A Princeton University professor and 3 other experts made the suggestion in Thursday's edition of the British science magazine, Nature.

The group says the recycling of plutonium extracted from spent nuclear fuel costs much more than other

methods of disposal.

The group also cites fears that the more than 250 tons of plutonium stockpiled around the world for commercial purposes could go into terrorists' hands, because they may be converted into nuclear weapons.

Last year, the British government proposed to build a plant to process plutonium into nuclear fuel. However, the experts describe the idea as unrealistic.

They conclude that burying it underground is the safest and cheapest method of disposal.

Japan has been reviewing its policy of recycling nuclear fuel in the wake of last year's nuclear accident in Fukushima.

May 12, 2012

## A new nuclear plant in Chiba

### Ishihara Tokyo governor plans to build a nuclear plant along Tokyo bay

<http://fukushima-diary.com/>

Posted by **Mochizuki**

Having received the petition of 320,000 people for referendum of nuclear power, Ishihara Tokyo governor mentioned **the plan to build a nuclear plant along the coast of Tokyo bay.**

He believes Fukushima plants were damaged by Tsunami, suggests to build one on the mountain in Chiba.

He stated Mt. Nokogiri yama in Chiba is 329m of height, 1km from Tokyo bay so it can take water from Tokyo bay for its coolant system.

Ishihara mentioned this plan at Metropolitan Assembly budget Committee on 3/14/2012 at first but local residents opposed the plan. Ishihara commented, it was merely an idea for civilization, but he won't apologize.

May 14, 2012

## A new Red Cross for nuke disasters next year

### **New Red Cross organization to be formed to help countries cope with nuclear disasters**

<http://mainichi.jp/english/english/newsselect/news/20120514p2a00m0na016000c.html>

The International Federation of Red Cross and Red Crescent Societies (IFRC) has decided to create a specialized organization to support relief activities of Red Cross societies in the aftermath of nuclear accidents.

At an international meeting in Tokyo starting May 14, the structure, location and duties of the organization will be discussed.

According to the Japanese Red Cross Society (JRCS), there are currently no departments at the IFRC headquarters in Geneva or at global Red Cross societies that provide support after nuclear disasters. At a general assembly at the headquarters in November last year, the IFRC decided to establish guidelines for an immediate response to nuclear disasters with a target of fall 2013.

At the meeting from May 14, officials from 16 countries and territories, primarily nuclear power plant-holding nations including Japan, are participating. Through debate, the members will share lessons learned from nuclear disasters like Chernobyl and Fukushima and make a schedule for the establishment of immediate response guidelines.

When the disaster at the Fukushima No. 1 Nuclear Power Plant began, there were problems such as the central government's evacuation orders not making their way to local governments. The JRCS put together an emergency response team for the treatment of earthquake and tsunami disaster victims and support of nuclear disaster victims, but problems such as a lack of staff knowledgeable about radiation became apparent. The JRCS has since worked to put together action plans, install whole body counters that can measure radiation dosages at Red Cross hospitals, and also help with setting up machinery to measure radioactive substances in foods.

A JRCS member said, "Based on the assumption that a nuclear disaster can occur in any country, we want to put together preparations that can be applied to different countries, with a neutral stance toward nuclear power."

May 19, 2012

## A fracture zone under Tsuruga ?

### News Navigator: What is a fracture zone?

<http://mainichi.jp/english/english/perspectives/news/20120519p2a00m0na004000c.html>

Several experts have questioned whether "fracture zones" directly underneath reactor buildings at the Japan Atomic Power Co.'s Tsuruga nuclear power plant in Tsuruga, Fukui Prefecture, are active faults. The Mainichi answers common questions readers may have about these fracture zones.

Question: What is a fracture zone?

Answer: When faults misalign with each other and cause an earthquake, the fault surfaces can crush rocks and create a cracked zone in the bedrock. This is a fracture zone. Most are said to be from a few centimeters to a few meters thick. Around 150 to 160 have been found on the grounds of the Tsuruga nuclear power plant.

Q: What are active faults?

A: Active faults are those that have moved many times within about the past 2 million years and have a possibility of moving again. Japan's earthquake-resistance schematic evaluation policies define active faults as those that have moved since 120,000 to 130,000 years ago.

Q: How is it known when a fault moved?

A: Generally older ground layers are below newer ground layers, and according to earthquake researcher Kunihiro Shimazaki, professor emeritus at the University of Tokyo, one way to date them is to dig up ground layers and compare them to dated volcanic ash. Another way is to use carbon-14 dating on the carbon in wooden fragments if they remain in the ground layers. Using such methods, the times of ground movements and their frequency can be estimated.

Q: How will the fracture zones at the nuclear plant be investigated?

A: The plan is to collect volcanic ash on the problem fracture zones from many different spots to improve the accuracy of dating estimates, and also to investigate minerals in the fracture zones. After carefully examining the faults' history of activity, technicians plan to submit a report to the national government by November. (Answers by Taku Nishikawa, Science & Environment News Department)

## Earthquake in Aomori

### **M6.0 quake jolts Aomori, other northeastern Japan areas**

<http://mainichi.jp/english/english/newsselect/news/20120524p2g00m0dm036000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 6.0 jolted Aomori Prefecture and other areas in northeastern Japan early Thursday, the Japan Meteorological Agency said.

No tsunami warning was issued. The 12:02 a.m. quake measured upper 5 on the Japanese intensity scale of 7 in the town of Tohoku in Aomori and lower 5 in Noheji and other areas in the prefecture.

The Economy, Trade and Industry Ministry's Nuclear and Industrial Safety Agency said it has not received any reports of abnormalities from nuclear facilities in two Aomori villages -- Tohoku Electric Power Co.'s nuclear power plant in Higashidori and Japan Nuclear Fuel Ltd.'s atomic fuel cycle facility in Rokkasho.

There are no abnormalities in the Fukushima Daiichi and Daini nuclear power plants in Fukushima Prefecture, Tokyo Electric Power Co. said.

Tohoku Electric Power also said there are no abnormalities in the Onagawa nuclear power plant in Miyagi Prefecture.

The agency said it believes the quake was not an aftershock of the March 2011 earthquake, while alerting people to take precautions against aftershocks measuring up to 4 on the Japan scale for a week.

The focus of the quake was off the Pacific coast of the prefecture at a depth of about 50 kilometers.

June 13, 2012

**"Not high enough to warrant a cleanup"**



## **Metro gov't denies Tokyo park needs radiation decontamination**

<http://mainichi.jp/english/english/newsselect/news/20120613p2a00m0na014000c.html>

The Tokyo Metropolitan Government has rejected a local politician's call to decontaminate a park where high concentrations of radioactive cesium have been detected, saying radiation levels are not high enough to warrant a cleanup.

The high concentrations in Katsushika Ward's Mizumoto Park were found earlier by Japanese Communist Party (JCP) members of the metropolitan assembly, and JCP assemblyman Tamio Tazoe called for the decontamination of the site in a recent session. The metropolitan government, which detected a radiation dose of 0.99 microsieverts per hour in tests at the park on June 11, rejected Tazoe's request, stating the emissions did not reach the national limit.

According to the Tokyo Bureau of Environment, it conducted the June 11 measurements at the request of the Ministry of Education, Culture, Sports, Science and Technology (MEXT), which had been contacted by the JCP. It says bureau workers took the 0.99 microsieverts per hour reading a meter above the ground where the JCP members had earlier found the high cesium concentrations. About 60 meters away in the middle of the park's parking lot, however, the bureau says it measured a dose of just 0.18 microsieverts per hour.

In October last year, the national government established standards whereby MEXT could be contacted if localized radiation levels were on average one microsievert per hour higher than surrounding areas.

Bureau chief Teruyuki Ono stated that the measurements taken this time were below the national limit and that he thought an overall radiation survey of Tokyo government facilities was "basically unnecessary."

Can probability apply to nuclear power?

June 14, 2012

## **Plans for safety**

## **Quake-proof buildings yet to be set up at 9 nuclear plants in Japan**

<http://mainichi.jp/english/english/newsselect/news/20120614p2g00m0dm035000c.html>

TOKYO (Kyodo) -- Quake-proof emergency response buildings are yet to be set up at nine out of 17 nuclear power plants in Japan, reflecting the lack of progress in utilities' safety measures even after the March 2011 earthquake and tsunami triggered the Fukushima Daiichi nuclear crisis, a survey by Kyodo News showed Wednesday.

The nine include Kansai Electric Power Co.'s Oi, Mihama and Takahama plants in Fukui Prefecture. The utility covering the western Japan area including Osaka said that until the completion of the quake-proof buildings, it will use emergency response rooms located under existing buildings.

The utility plans to set up the buildings for the Oi plant's Nos. 3 and 4 reactors by the end of March 2016 and at the Mihama and Takahama plants by the end of March 2017.

Kyushu Electric Power Co. has not even devised detailed plans for emergency response buildings at its Genkai plant in Saga Prefecture and its Sendai plant in Kagoshima Prefecture.

Elsewhere, the buildings are expected to be completed between March 2015 and March 2017 at Hokkaido Electric Power Co.'s Tomari plant in Hokkaido, Tohoku Electric Power Co.'s Higashidori plant in Aomori Prefecture and Chugoku Electric Power Co.'s Shimane plant.

The emergency response building at Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture is expected to be completed by the end of March next year.

The utilities decided to build quake-resistant buildings after a powerful earthquake off the coast of Niigata Prefecture in 2007 damaged the administrative building at Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant in Niigata and put it out of commission.

The buildings, equipped with electricity generators and video-conference rooms, are being designed to withstand earthquakes with a seismic intensity of 7, the highest on the Japanese scale. They are also designed to shield against radiation.

The one at the Fukushima Daiichi plant is playing a major role in the handling of the disaster. Without the buildings, workers could be exposed to high levels of radiation in the event of accidents at the nuclear plants.

Following the 2007 Niigata earthquake, quake-proof buildings were set up at TEPCO's Fukushima Daiichi, Fukushima Daini and Kashiwazaki-Kariwa plants, Tohoku Electric's Onagawa plant in Miyagi Prefecture, Chubu Electric Power Co.'s Hamaoka plant in Shizuoka Prefecture, Shikoku Electric's Ikata plant in Ehime Prefecture, and Japan Atomic Power Co.'s Tokai No. 2 plant in Ibaraki Prefecture and Tsuruga plant in Fukui Prefecture

June 15, 2012

## About nuclear power safety

### **Editorial: 40-year limit on nuclear reactors a basic requirement**

<http://mainichi.jp/english/english/perspectives/news/20120615p2a00m0na013000c.html>

The ruling Democratic Party of Japan (DPJ) and the opposition Liberal Democratic Party (LDP) and New Komeito have agreed on revisions to a bill on the creation of a new organization overseeing nuclear power safety in Japan.

The bill, which is expected to be passed during the current Diet session, envisages the creation of a highly independent "nuclear regulatory commission." This commission is expected to swiftly review the government's proposal to place a 40-year operational limit on Japan's nuclear reactors.

The birth of a highly independent regulatory body is welcome, but we cannot allow the 40-year limit rule to be watered down.

After the outbreak of the disaster at the Fukushima No. 1 nuclear plant operated by Tokyo Electric Power Co. (TEPCO), the government said Japan would decrease its reliance on nuclear power. We have also called on the government to abandon the construction of new nuclear reactors and shut down existing reactors in the order of the risks they pose, decreasing the overall number of reactors in Japan. The 40-year limit has served as an important yardstick in this respect.

Currently, the wear on a reactor is evaluated 30 years into its operational life, and with the government's approval, the reactor's life can be extended in 10-year increments. However, even when old reactors are found to have safety-related faults, it is difficult to incorporate new technology into them.

The LDP stated it could not agree with a blanket 40-year limit on reactors -- probably from the opinion that differences between old and new model reactors and other such factors should be taken into consideration. However, reactors that are new now will be old in 40 years. In breaking away from nuclear power, there is great significance in placing a ceiling on the life of reactors. The new regulatory commission should clarify its standards for deciding on the decommissioning of reactors, and make it possible to decommission reactors before their age reaches 40 years.

The regulatory commission will comprise five experts under a chair. In their negotiations, the LDP, DPJ and Komeito agreed that the commission's decisions on the technical response during an emergency would take priority, and the prime minister's right to issue directives would be limited to those urging the commission to make a decision. As such, the commission faces a huge responsibility.

The appointment of commission members would require Diet approval. When choosing members, undue pressure from nuclear power-related industries, the academic world and politicians must not be allowed. The new bill demands public disclosure of information, but a level of transparency in which the public can check the commission's activities must be established.

The same goes for the nuclear power regulatory agency that would serve as the commission's secretariat. It would be founded by merging the Japan Nuclear Energy Safety Organization (JNES), an incorporated administrative agency, with the Ministry of Economy, Trade and Industry's Nuclear and Industrial Safety Agency. Workers at the JNES would become public servants. A "no return" rule, in which workers are forbidden from returning to the organizations from which they came, would be implemented. But at the same time, a system to evaluate talent should also be implemented. It is probably necessary to set up departments at universities and other institutions to train nuclear safety specialists.

The three parties also agreed to set up a nuclear power disaster prevention council. The prime minister would serve as chairman, officials including the chief Cabinet secretary and the head of the regulatory commission would serve as vice chairmen, and the council would advance disaster-prevention planning and drills in areas outside the premises of nuclear power plants.

During the Great East Japan Earthquake and tsunami and the ensuing nuclear crisis, government agencies and local bodies had trouble coordinating with each other. It is essential to build a nuclear disaster prevention system operating under the principle that accidents occur.

June 19, 2012

This critical article from the nuclear engineer Kenichi Ohmae dates from April 18, 2012 but is well worth reading again.



**Nuclear nightmare: The destroyed No. 3 reactor building at Tokyo Electric Power Co.'s Fukushima No.1 nuclear power plant on Feb. 20. The earthquake and tsunami that struck March 11, 2011, crippled Nos. 1, 2 and 3 reactors at the plant, triggering the world's worst nuclear crisis since the 1986 Chernobyl incident. AP**

## **Fukushima: Probability theory is unsafe**

<http://www.japantimes.co.jp/text/ea20120418a4.html#.T-AvClJIwpU>

By KENICHI OHMAE

Special to The Japan Times

A year has now passed since the complete core meltdowns of three boiling water reactors at Tokyo Electric Power Co.'s Fukushima No. 1 plant. Because of the limited and biased information issued by the Japanese government, the world does not know what really happened when the earthquake and the tsunami hit the six Fukushima nuclear reactors. There are many important lessons that must be learned to avoid a future disaster. These lessons can be applied to all the nuclear reactors globally. People around the world deserve the right to know what happened.

As a nuclear core designer and someone who earned a Ph.D. from the Massachusetts Institute of Technology in nuclear engineering, I volunteered to look into the situation at Fukushima No. 1 in June of 2011. Mr. Goushi Hosono, minister of nuclear power and environment, personally gave me access to the

information and personnel who were directly involved in the containment operations of the postdisaster nuclear plants. After three months of investigation, I analyzed and wrote a long report detailing minute by minute how the nuclear reactors were actually disabled ([pr.bbt757.com/eng/](http://pr.bbt757.com/eng/))

Here are the highlights of my findings:

1. Three of the six reactors of Fukushima No. 1 had a complete core meltdown a few days after the tsunami hit. The molten fuel penetrated not only through the bottom of the thick pressure vessel, but also poked holes at the bottom of the containment vessel, thus releasing fission materials into the environment. The meltdown itself started at 11p.m. on the day of the tsunami, March 11, 2011.
2. As expected, the meltdown caused the fuel cladding material, zircaloy (zirconium alloy), to react with vapor and to create large quantities of hydrogen and zirconium oxide, which caused the catastrophic hydrogen explosion that blew out three reactor buildings. The hydrogen explosion took place on March 12, 14 and 15. The Japanese Government did not admit to the meltdown until three months later, nor did they admit to the damage to the containment vessels until a half year later. Our government tried to hide this important information for some reason, though judging from the amount of fission material released and from the size of the hydrogen explosion, the meltdown of the entire core was undeniable for anyone who has studied reactor engineering.
3. The earthquake on March 11 damaged all of the five independent external power supply systems, and the 15-meter-high tsunami damaged all of the pumps and motors of the main and emergency cooling systems that were constructed along the shore line, thus disabling the cooling system that pumps in sea water.
4. The tsunami also sent massive amounts of water into the reactor buildings and the turbine housing, thus soaking the emergency diesel engines and batteries, which were stored in the basement of these buildings. This meant that all sources of emergency backup power stored in the basement of the reactors were totally destroyed.
5. There was an air-cooled diesel engine sitting atop a hill close to Reactor No. 6. Its airfins were too big to fit into the basement and was luckily placed outside, and as such, this engine started to generate electricity. With a pump brought in from outside, it started to cool not only Reactor No. 6, but had enough power to cool Reactor No. 5. Of the 13 emergency generators associated with the six plants, this was the only one of the three air-cooled backups, and hence not dependent on water as the heat sink. This air-cooled diesel engine was the only one not entirely submerged in water, but in fact at one point the water level did reach up to half its height. A few weeks later Reactors No. 5 and No. 6 were brought to a cold shutdown.

6. The buildings of reactors No. 1 and No. 3 were blown away by an explosion of hydrogen generated by the core meltdown. Reactor No. 4 eventually exploded, though its core had no fuel inside due to a periodic inspection that meant the fuel rods were stored elsewhere. It turned out that the Reactor No. 4's building filled with hydrogen that leaked from Reactor No. 3 through their common gas release ducts. Reactor No. 2 escaped from the massive explosion, although its core had completely melted. Its windows were blown away most likely by the explosions from neighboring reactors No. 1 and No. 3 and the hydrogen inside Reactor No. 2 escaped into the air.

These facts teach us one important lesson: The Fukushima accident could have been avoided if the plant had had the capacity for electricity generation of any form along with the appropriate heat sink.

It is also clear that it was not the "unexpectedly high" tsunami that caused the accident. Reactors No. 5 and No. 6 remained intact, even though they were damaged to the same extent as the other four reactors by the earthquakes and tsunami. The difference was that they had a source of electricity through the air-cooled emergency diesel engine that had been installed ad hoc by the management because they wanted to save money when the government demanded increased back up from two to three emergency generator sets.

The most important lesson of Fukushima No. 1 plant, therefore, is that we should have multiple sources of electrical supply and cooling heat sinks. This is not to say that "you should not put all of your eggs in one basket." What I want to say is that we should have eggs and apples in a few different baskets.

The Japanese government has tried to explain and offer excuses for the disaster in Fukushima, but no one in the government has accurately analyzed the situation. They continue to claim that the magnitude of the earthquake and tsunami was a natural disaster far beyond anything anyone could have imagined or planned for. But is this true? Was it a catastrophe that could not have been avoided?

My analysis takes a totally different point of view. It shows in documented detail ([pr.bbt757.com/eng/](http://pr.bbt757.com/eng/)) that if you want to operate a nuclear reactor, then you should not assume anything about potential disasters — be they earthquakes, tsunamis, terrorists or a plane crash. No matter what happens, if you are operating a nuclear reactor, you must find a way to bring it down to a cold shutdown in any type of emergency. We now know from the Fukushima disaster that this will require electricity and heat sinks. It is a pretty simple principle.

But there is also another important lesson to be learned, and it applies to all operating nuclear facilities around the world: If you have to assume something, then you are not prepared.

All nuclear reactors in the world have been designed using probability assumptions. This idea was originally proposed by professor Norman Rasmussen of MIT. Put to use, it is a scientific way of expressing what the public will accept.

For example, what is the probability of a plane crashing into Yankee stadium with a full audience during the World Series? This can be calculated if one assumes that there is a level of probability for each element leading to the eventual accident. And, despite the probability, because it is infinitely small, the public tacitly accepts it. This principle was followed at Fukushima. Assumptions were made about possible causes of nuclear plant accidents. Engineering precautions were taken accordingly so that everyone could feel rest assured knowing "the reactor is safe."

In Japan, the Nuclear Safety Commission made this fatal mistake by relying casually on this probability theory. They assumed that the probability of a long-term stoppage of the external electric supply "in a country like Japan" was very unlikely, so they did not have to assume and plan for a prolonged power breakdown. With this assumption in mind, they insisted on having three emergency generator sets per reactor. They gave no further thought to the possibility of a situation that could include the breakdown of all external electrical connections.

Fukushima No. 1 had five different paths for the grid to come in, but all of them were destroyed by the powerful earthquakes 45 minutes prior to the tsunami. It would have taken only one active electrical connection to stabilize the reactors after the tsunami hit.

The government did its best and brought in mobile generators from outside. There were two problems with this tactic. First, all of the three electric panels in the reactors that needed to receive outside power were submerged in water. To make matters worse, the mobile generators couldn't plug in. The final straw was that the GE-built plants were on a 660-volt power line needed to run the plants, but the mobile generators brought in by the government were usually used on construction sites and they were limited to only 220 volts, the standard voltage in Japan. The mobile generators were useless in this situation.

Had the Commission made assumptions about the possible loss of the external electrical supply and ordered the plant to be equipped on site with other external power generation, be that solar, wind, gas turbine or even small LNG power stations to back up the six gigantic reactors, this disaster could have been averted.

It is very important to note that the one small gas turbine generator that was on site worked, but unfortunately, the one generator that worked was only connected to the control room for administration, and this power could not be shared with the reactors.

There has been a lot of useless discussion about the tsunami's power and size. Historically, people have assumed that the maximum height of observed tsunamis along the eastern shore of Japan is no more than



10 meters. Until this disaster occurred, the probability of a 15 meter tsunami hitting the Japanese coast was so low that one did not have to plan for such an unlikely event. It was known in some circles that a major tsunami could in fact hit the Tohoku coast. History shows that extreme tsunamis hit Tohoku at least once every 10,000 years. What we learned in Fukushima is that even if an event is predicted to happen infrequently, it will happen! To then talk about the probability is moot. The probability is now 100 percent and we have to face the challenge at hand and find a way to safeguard the reactors.

As a nuclear core engineer I can tell you that reactors are built to withstand the expected hardships. In light of what happened in Fukushima No. 1, the assumptions were completely wrong. In order to make nuclear energy work we must build reactors that can reach cold shutdown with 100 percent certainty, no matter what happens.

Assumptions and probability are for the theoretical dreamers. If you have a hot reactor, submerged in water and this reactor is without the power to circulate the coolant that can shut it down, then you have to find another way to cool it no matter what. If you have lost your last resort of power and heat sink, you should not have taken on the responsibility to operate a nuclear plant in the first place. That is the lesson of Fukushima.

In this world nothing is absolutely safe. The public approval for nuclear reactor construction is normally very hard to get. To this end the reactor engineers have constructed what is now called the containment vessel. They explained that should something "unimaginable" happen and fission materials leak from the nuclear core, the containment vessel will confine them and nothing will escape into the external environment. People living near the reactor were told to rest assured that they would never be exposed to radiation.

Many people compare this disaster to Chernobyl. The Russian reactor was very different. The Russians did not build a containment vessel to cover their reactor. They did not see a need for that precaution. Because Chernobyl did not have a containment vessel, when that nuclear accident occurred, the result was a massive release of radiation materials that were carried away into whichever direction the wind was blowing.

In the case of Three Mile Island, it did have the needed containment vessel and practically all of the fission materials were held inside the dome. Many long-held myths have been broken as a result of the Fukushima No. 1 meltdown.

As the molten fuel made its way through the pressure vessel and the molten "lava" melted the bottom of the containment vessel, it released huge amounts of fission gasses and particles to the air and water.

The assumed role of the containment vessel proved to be faulty against this type of melt through. If you go back to the original public discussions for the construction of these early nuclear plants, none of the safety devices, such as emergency cooling systems (ECCS), boric acid spray, etc., worked in Fukushima in

2011. What we found, regrettably, is that even the most critical emergency devices are dependent on the availability of power, either in alternating or direct current.

In the case of Fukushima, all power was lost for a prolonged period of time and the complete core meltdown could not be stopped.

My recommendation is very simple. We should not assume anything in the design of a nuclear reactor. We should be prepared to cool down the reactor and bring it to cold shutdown with at least one reliable power supply and heat sink. This means that the emergency power should be provided by a multiple of means and locations, and the heat sink should not be dependent on prevailing water alone, but on air and alternative water reservoirs.

If this is established, then the reactor can be safe not only against natural disasters but also against man-made catastrophes such as sabotage, plane crashes and terrorist attacks.

The Japanese government's official explanation of the Fukushima disaster focuses only on the inability of anyone to predict an extreme natural disaster. Because of this focus, the rest of the world is not taking notice of the important lessons we need to understand to make the world a safer place. Many countries rely on nuclear energy, and yet these same countries assume that because they do not have to worry about earthquakes and tsunamis, what happened in Japan on March 11, 2011 does not apply to them. This could become a fatal mistake.

All reactors should be scrutinized against the possible loss of power and coolants, regardless of the cause of the disaster. Nuclear reactors are all built around the same probability assumptions. This pattern of thinking developed in the 1970s to gain the otherwise hard-to-come-by public acceptance of nuclear generated energy. Nuclear engineers, utilities and pronuclear governments around the world needed to persuade their public of the safety of nuclear energy.

With the hindsight of Fukushima, all of us who are engineers must challenge ourselves to once again think through the worst possible situation, such as a complete loss of power and coolant for a prolonged time, and we must work together to remedy the situation.

We must show how we can avoid core meltdowns under any circumstance. The challenge is no longer just the gaining of public acceptance but to realize that we are being tested by nature, and that God will keep testing us, checking to see if we are ready to ask the right questions.

Kenichi Ohmae — an MIT-trained nuclear engineer who is also a well-known management consultant — is dean of Business Breakthrough University. He was a founder of McKinsey & Co.'s strategic consulting practice and is the author of many books including "The Borderless World."

June 21, 2012

## Will do better next time

### **Nuclear agency to review PR procedures on troubles**

[http://www3.nhk.or.jp/daily/english/20120621\\_15.html](http://www3.nhk.or.jp/daily/english/20120621_15.html)

Japan's nuclear safety officials will boost their public relations efforts after criticism they were slow to reveal problems at the Ohi nuclear power plant in central Japan.

Officials from the Nuclear and Industrial Safety Agency said on Thursday they will quickly disclose even minor irregularities.

Both the nuclear regulator and the operator of the Ohi plant were criticized for delaying their disclosure of problems at one reactor on Tuesday. The plant is run by Kansai Electric Power Company.

The trouble was disclosed about 13 hours after an alarm sounded, indicating the water level had fallen in a tank used to cool an electric power generator at the No.3 reactor.

The agency later apologized for the delay, but is facing mounting criticism from local municipalities and residents.

The officials said they will more quickly inform the central government or municipalities of problems, including minor issues they are not legally obliged to disclose.

The agency will dispatch senior officials to the offsite emergency response center of the plant for a limited time.

Public relations for the Ohi plant will be handled jointly by the Nuclear and Industrial Safety Agency, Kansai Electric Power Company, and Fukui Prefecture, where the plant is located.

Preparations to resume operations began last Saturday at the plant's No. 3 reactor. The Ohi plant, which has been suspended for regular inspections, will be the first to go back online since the last of Japan's reactors was shut down in May, amid the ongoing nuclear crisis in Fukushima Prefecture.

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## Promises

### **Surveillance at Oi nuclear reactors enhanced**

<http://mainichi.jp/english/english/newsselect/news/20120621p2g00m0dm095000c.html>

FUKUI, Japan (Kyodo) -- The Nuclear and Industrial Safety Agency said Thursday it has decided to deploy its inspectors at an off-site facility outside the Oi nuclear power plant in Fukui Prefecture around the clock, in addition to the central control room for the Nos. 3 and 4 reactors at the plant, to enhance the surveillance system.

The move came after the government's agency and Kansai Electric Power Co., the operator of the Oi plant, were criticized for their late report to media that an alarm went off at the No. 3 unit earlier this week, the first sign of trouble since the government decided to restart the two reactors amid public concerns over nuclear safety in the wake of the Fukushima nuclear crisis.

It was a warning that water levels had fallen inside a cooling tank for a suspended generator, but the incident posed no safety problem, the utility said.

The agency officials also said at a press conference in the town of Oi that the agency and the utility will not immediately inform the media about any unexpected trouble regardless of its effects on the environment and safety.

In Tokyo, Chief Cabinet Secretary Osamu Fujimura expressed regret about the delay in the announcement of the problem at the Oi nuclear power plant.

At a morning press conference, Fujimura also said the recent development at the Oi plant does not mean it has any safety problems.

June 24, 2012

## **More research planned on the Tsuruga fault**

### **NISA to tighten checks on fault research beneath Tsuruga reactors**

Jiji

The Nuclear and Industrial Safety Agency intends to enhance its monitoring of new research into an active fault under the Tsuruga nuclear power plant in Fukui Prefecture.

At a meeting with experts Friday, NISA officials said they will station an inspector at the Tsuruga facility on a full-time basis to monitor additional studies of the fault by the plant's operator, Japan Atomic Power Co.

The announcement followed the discovery that crush zones consisting of coarse rock fragments that could shift together with the fault lie directly beneath the Tsuruga complex.

Masaru Kobayashi, head of NISA's department for evaluating the earthquake resistance of nuclear plants, said the agency hopes to ensure the reliability and transparency of the research process by posting updates on its website provided by the inspector.

Japan Atomic Power in May started preparing for further research at the Tsuruga plant, including exploratory drilling.

NISA plans to have its experts conduct a field study and decide whether the drilling site selected is appropriate.

The agency will also have experts observe a geological survey after the drilling, and will allow the press greater access to research activities at the site.

In research conducted during past quake-proof inspections, NISA only played a minor role in the final stages of drilling and should have monitored the process more closely, Kobayashi said.

## Fear not: the culprit was only an "unstable atmosphere"

### Alarm erroneously issued at Oi nuclear plant

<http://mainichi.jp/english/english/newsselect/news/20120624p2g00m0dm063000c.html>

TSURUGA, Fukui (Kyodo) -- The central control room for the Nos. 3 and 4 reactors at the Oi power plant in Fukui Prefecture registered two alarms indicating trouble with electric power cables between late Saturday and early Sunday, but no glitches were found, according to the plant's operator, Kansai Electric Power Co.

The utility said the alarm system error is believed to have been caused as a radio signal, which monitors the connection conditions of the cables, was **temporarily interrupted due to an unstable atmosphere**.

Kansai Electric is now preparing to reactivate the two reactors following the government's decision to resume them. The latest trouble will not affect the preparation works, it said.

June 26, 2012

## Utilities prefer averages

### Scientists warn of 3 faults under soon-to-restart reactors

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201206260106](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201206260106)

By LOUIS TEMPLADO/ AJW Staff Writer

Thousands of protesters in front of his office last week weren't enough to dissuade Prime Minister Yoshihiko Noda from his plan to restart Japan's nuclear reactors, starting with a pair in Oi, Fukui Prefecture.

On June 26, two seismological experts took their turns, speaking at the Foreign Correspondents' Club of Japan in Tokyo.

**Mitsuhisa Watanabe**, tectonic geomorphologist at Toyo University, and **Katsuhiko Ishibashi**, seismologist and professor emeritus at Kobe University, argued that the Oi nuclear power plant reactors sit far more precariously than their operator, Kansai Electric Power Co. (KEPCO), has claimed in order to rush their restart.

If the utility and the government have their way, the Oi No. 3 and 4 reactors will be the first to power up since May 5, when all of Japan's 50 remaining reactors went offline for maintenance or safety checks. The No. 3 reactor is scheduled to be restarted on July 1.

Using KEPCO's own data, some of which was first published more than 20 years ago, the pair **point to a set of seismic faults under the facilities the importance of which, they claim, the utility has skated over.**

"I find it difficult to understand how the utility can offer such varying data from the same area," said Watanabe. "Yet it has consistently presented the least serious interpretation to the government."

**The seaside Oi facilities sit in a gap between three known faults, FO-A, FO-B --connected to each other and running beneath Wakasa Bay--and the inland Kumagawa fault, which with the first two form a 63-kilometer line.**

KEPCO foresees the possibility of the first two faults moving at once, but not all three together. Moreover there is a smaller fault, possibly a branch, directly beneath the reactors. The utility claims it is inactive, based on a sketch of the vertical displacement of its southeastern wall. A sketch of its northwestern wall, revealing slippage and a "shattered zone" in the clay, however, seems to indicate otherwise.

"The Japanese government should have done a rigorous back-check" based on the Revised Seismic Design Guide of 2006, said Ishibashi. "But it has skipped this fundamental process. The back-check should also be reformulated carefully to properly take active faults into account."

To do so yields starkly different figures: Japan's Nuclear and Industrial Safety Agency, for example, estimates that the two submarine faults in Wakasa Bay could produce as much as 700 Gal--a measure of peak earthquake ground motion. KEPCO believes a three-fault quake would reach 760 Gal.

For comparison the greatest ground motion ever measured at a Japanese nuclear power plant is 1,699 Gal, recorded at the TEPCO-operated Kashiwazaki-Kariwa facility in Niigata Prefecture during the 2007 Niigata Chuetsu-oki Earthquake. The plant survived, but was shut down for 21 months.

“The actual motion was more,” explained Ishibashi, who says that the utility’s questionable building practices helped avert a possible disaster. “The reactor was constructed on poor land, with a thick sedimentary layer, which attenuated the motion.”

A shock would hit the Oi plant more directly, he adds, because the sedimentary layer there is more shallow.

Ishibashi has gained public attention, having predicted an earthquake-caused nuclear accident as early as 2005--six years before the accident at the Fukushima No. 1 nuclear power plant--but so far no government ears.

“I don’t claim to be able to predict earthquakes, I can only point out tendencies,” said Ishibashi, **calling on the government to base its decisions on data gathered from shaking recorded at Kasahiwazaki-Kariwa, instead of the averaged figures presented by utilities.**

“There’s a reason why they prefer averages. **To reinforce facilities to withstand such stresses would make them unfeasible,**” he said.

June 28, 2012

## Which are the most dangerous nuclear plants in Japan?

### Lawmakers' group identifies Japan's most dangerous nuclear reactors

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201206280069>



The Asahi Shimbun

### Reactors ranked based on hazard levels

	Reactor	Operator		Reactor	Operator
<b>1</b>	Oi No. 1	Kansai		Oi No. 3	Kansai
	Oi No. 2	Kansai	<b>26</b>	Oi No. 4	Kansai
<b>3</b>	Tsuruga No. 1	JAPC		Ikata No. 1	Shikoku
<b>4</b>	Mihama No. 2	Kansai	<b>29</b>	Onagawa No. 2	Tohoku
<b>5</b>	Mihama No. 1	Kansai	<b>30</b>	Genkai No. 1	Kyushu
<b>6</b>	Mihama No. 3	Kansai	<b>31</b>	Fukushima No. 1 / No. 6	Tokyo
<b>7</b>	Takahama No. 1	Kansai	<b>32</b>	Shika No. 2	Hokuriku
	Shimane No. 2	Chugoku	<b>33</b>	Tomari No. 3	Hokkaido
<b>9</b>	Takahama No. 2	Kansai	<b>34</b>	Fukushima No. 2 / No. 1	Tokyo
	Shimane No. 1	Chugoku	<b>35</b>	Takahama No. 3	Kansai
	Hamaoka No. 3	Chubu		Takahama No. 4	Kansai
<b>11</b>	Hamaoka No. 4	Chubu	<b>37</b>	Onagawa No. 3	Tohoku
	Hamaoka No. 5	Chubu		Ikata No. 3	Shikoku
<b>14</b>	Tokai No. 2	JAPC		Tomari No. 1	Hokkaido
<b>15</b>	Kashiwazaki-Kariwa No. 1	Tokyo	<b>39</b>	Fukushima No. 2 / No. 2	Tokyo
	Kashiwazaki-Kariwa No. 4	Tokyo		Fukushima No. 2 / No. 3	Tokyo
<b>17</b>	Onagawa No. 1	Tohoku		Fukushima No. 2 / No. 4	Tokyo
<b>18</b>	Kashiwazaki-Kariwa No. 6	Tokyo	<b>43</b>	Sendai No. 1	Kyushu
<b>19</b>	Kashiwazaki-Kariwa No. 2	Tokyo	<b>44</b>	Tomari No. 2	Hokkaido
	Kashiwazaki-Kariwa No. 5	Tokyo		Sendai No. 2	Kyushu
<b>21</b>	Fukushima No. 1 / No. 5	Tokyo	<b>46</b>	Ikata No. 2	Shikoku
	Tsuruga No. 2	JAPC		Genkai No. 2	Kyushu
<b>23</b>	Kashiwazaki-Kariwa No. 3	Tokyo	<b>48</b>	Genkai No. 3	Kyushu
	Kashiwazaki-Kariwa No. 7	Tokyo	<b>49</b>	Higashidori No. 1	Tohoku
	Shika No. 1	Hokuriku		Genkai No. 4	Kyushu

JAPC: Japan Atomic Power Co.

**The No. 1 and No. 2 reactors at Fukui Prefecture's Oi nuclear power plant are the most dangerous in Japan**, according to a cross-party group of lawmakers opposed to nuclear power.

Genpatsu Zero no Kai (Group for zero nuclear power), made up of nine politicians from seven political parties, ranked the threat posed by the nation's 50 reactors on a 10-point scale.

Oi's two oldest reactors, which are more than 30 years old and located on fault lines that some scientists say may be active, were considered more dangerous than reactors at the Fukushima No. 1, Fukushima No. 2 and Onagawa nuclear plants, which sustained damage from the Great East Japan Earthquake in March last year.

The No. 1 and No. 2 reactors at Oi are currently offline and there are no immediate plans to restart them. The No. 3 and No. 4 reactors at the plant, which have been in service for 20 years or less, are due to be restarted in July.

The lawmakers' group, which includes Shoichi Kondo of the ruling Democratic Party of Japan, Taro Kono of the main opposition Liberal Democratic Party and Tomoko Abe of the Social Democratic Party, plans to campaign for a staged scrapping of nuclear reactors according to the risks they pose, similar to the policy adopted by Germany.

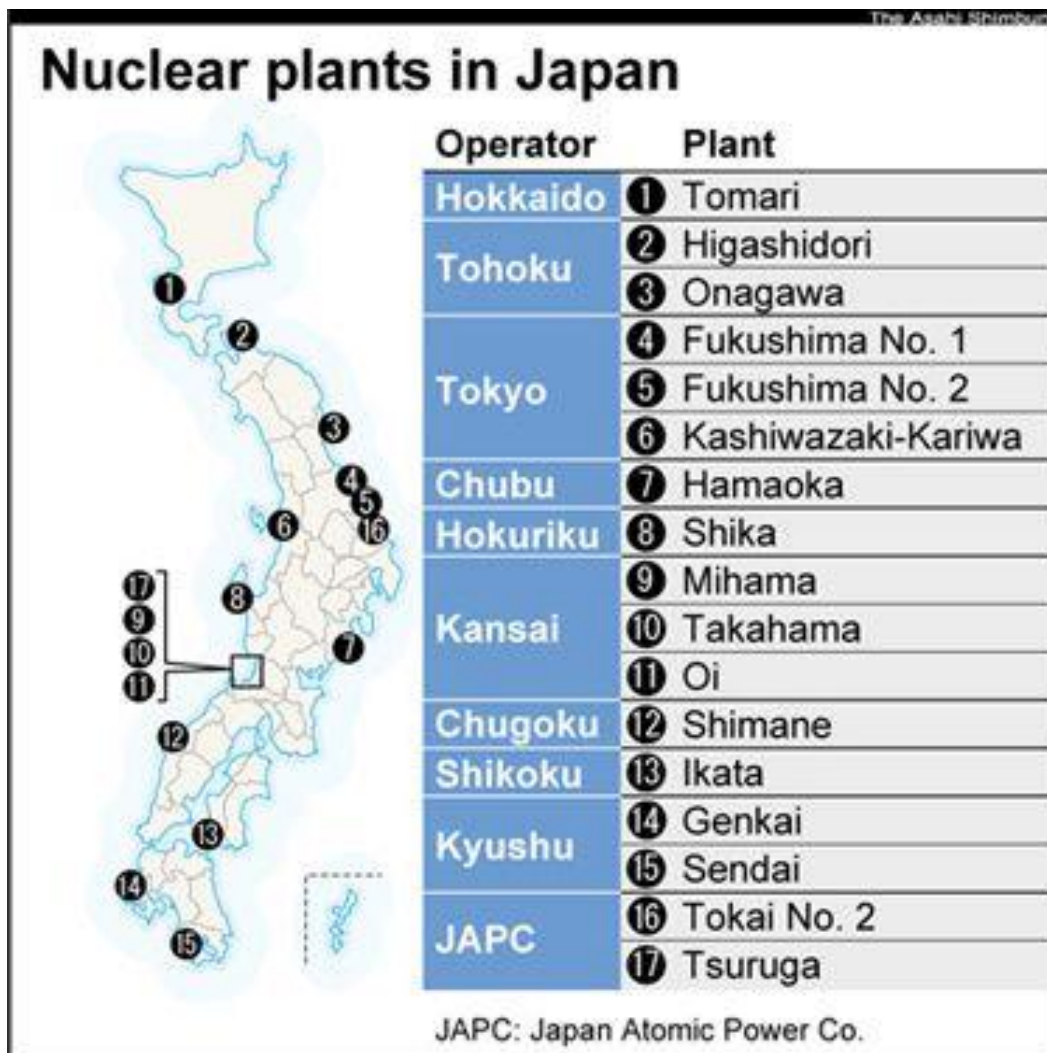
The group ranked the danger posed by the reactors in Japan, **taking into account the reactor type, containment vessel type, years in service, average utilization rate, the number of past accidents, the reactor's ductile-brittle transition temperature (the threshold temperature at which the metal used in its construction loses its ductility), seismological safety precautions, ground conditions and the size of the local population.**

The group will call for the decommissioning of reactors that ranked high in their rating, as well as reactors at the Fukushima No. 1, Fukushima No. 2 and Onagawa nuclear plants; the Kashiwazaki-Kariwa nuclear plant, which was damaged by the Niigata Chuetsu-oki Earthquake of July 2007; and the Hamaoka nuclear plant, where operations were stopped in May 2011 at the request of Naoto Kan, who was prime minister at the time of the nuclear disaster.

In evaluating the hazard levels, the group sought advice from expert members of the Fundamental Issues Subcommittee of the government's Advisory Committee for Natural Resources and Energy.

An official release of the ranking table was scheduled for June 28.

The group on June 27 released a policy recommendation for the decommissioning of nuclear reactors, calling for legislative measures and assistance to local communities that host nuclear plants. A final recommendation is expected next month.



June 30, 2012

## No meltdown in disaster dimulations

### Meltdown scenario excluded from nation's emergency drill plan

<http://mainichi.jp/english/english/newsselect/news/20120630p2g00m0dm050000c.html>

TOKYO (Kyodo) -- A government-affiliated body tasked with planning what was to be the nation's first nuclear emergency drill following the core meltdowns last year at the Fukushima Daiichi power plant

omitted a reactor meltdown scenario from its disaster simulations, according to a draft obtained by Kyodo News.

While the Japan Nuclear Energy Safety Organization said such a simulation "would stir concerns among local residents," the exclusion of the meltdown scenario from the disaster prevention drill has been criticized as an inadequate crisis response.

The organization has provided working-level support to the Nuclear and Industrial Safety Agency, and will be integrated into the "nuclear regulatory agency," the secretariat to support a "nuclear regulatory commission," which will be newly created as a body with a high degree of independence, based on a law enacted on June 20.

The Japan Nuclear Energy Safety Organization compiled the draft plan for fiscal 2011 at the order of the NISA.

Kyodo News obtained the draft through a freedom-of-information request, although the drill, which had been initially scheduled to be carried out last fiscal year, never went ahead.

According to a disclosed document dated July 4 last year, the plan for the drill said it simulates neither core damage or meltdown, nor a hydrogen explosion.

It also said the decision whether to simulate the release of radioactive materials in staging the drill was up to each local government.

Examining the draft, a NISA official told the organization a draft plan cannot exclude simulations of a meltdown and hydrogen explosion, although the official did not order it to be revised, according to the agency.

The emergency drill was first introduced after the Nuclear Disaster Special Measures Law was enacted following the fatal 1999 criticality incident at a nuclear fuel processing firm in Tokaimura, Ibaraki Prefecture.

July 4, 2012

**Check those faults**

## Nuclear safety body calls for more studies on faults under 3 plants

<http://mainichi.jp/english/english/newsselect/news/20120704p2g00m0dm039000c.html>

TOKYO (Kyodo) -- The Nuclear and Industrial Safety Agency on Tuesday stressed the need for additional studies on fault fracture zones or soft earth layers running under three nuclear power plants in Fukui Prefecture.

The three plants are **Kansai Electric Power Co.'s Mihama and Takahama plants** and the Japan Atomic Energy Agency's **Monju fast breeder reactor facility**, according to a report presented by the safety agency at a meeting of its expert panel the same day.

In particular, close attention should be paid to the Monju and Mihama plants as fault fracture zones could move together with active faults running nearby, it said.

**The agency also called for the collection of fault-related information on 13 other nuclear reactors including those at Kansai Electric's Oi nuclear plant in Fukui Prefecture**, where a reactor has been reactivated after being idled for over 15 months for mandatory checks.

July 9, 2012

## Jellyfish trouble

### Jellyfish problem at nuclear plants

[http://www3.nhk.or.jp/daily/english/20120709\\_34.html](http://www3.nhk.or.jp/daily/english/20120709_34.html)

Operators of Japanese nuclear power plants have experienced power reductions at times, caused by a swarm of jellyfish being sucked into water intakes.

Electricity at the plants is generated by steam-driven turbines. The steam is then sent to condensers to be cooled down with pipes in which seawater flows.

**An influx of jellyfish to the intakes sometimes disrupts the supply of cooling water, forcing operators to reduce power output to curb heat generation.**

Many plants now have filters or equipment to remove sea creatures at the intakes. But these measures do not work perfectly when a massive bloom occurs.

Thermal plants have been affected too. Kansai Electric Power Company says jellyfish problems have

forced it to reduce power output in 17 of its generators from April to June, the largest number of affected plants for the utility in the past 5 years.

The Nuclear and Industrial Safety Agency says reports on jellyfish trouble have been made from spring through fall, mainly at plants on the Sea of Japan coast.

But the agency says no reports have been made that jellyfish have completely blocked water intakes. The agency says that safety can be ensured by measures such as monitoring the flow of seawater.  
Damaged fuel rod containers at Onawaga

July 10, 2012

### **Fuel rod container at Onagawa plant found damaged**

[http://www3.nhk.or.jp/daily/english/20120710\\_36.html](http://www3.nhk.or.jp/daily/english/20120710_36.html)

The operator of the Onagawa nuclear plant in Miyagi Prefecture has discovered damage to fuel rod containers at the facility's No. 3 reactor.

Japan's nuclear safety agency has ordered Tohoku Electric Power Company to check and report on whether the damage was caused by the massive earthquake on March 11th last year.

The utility recently used an underwater camera to inspect the 4.5-meter-high metal containers in a fuel rod storage pool.

**It found a 2-centimeter-long, several-millimeter-wide chip on one of the containers. It also found more than 12 places on other containers where pieces were missing.**

Such damage has never been reported at a nuclear plant in Japan.

**Tohoku Electric says the fuel rods are intact**, and that there are no safety concerns because the reactor is out of operation.

But it says will investigate the damage in detail, and inspect the plant's No. 1 and 2 units.

July 12, 2012

## Shut down Kashiwazaki-Kariwa, Fukushima evacuees urge

### Nuke disaster evacuees ask court to force shuttering of Kashiwazaki-Kariwa plant

<http://mainichi.jp/english/english/newsselect/news/20120712p2a00m0na010000c.html>

NIIGATA -- Fukushima nuclear disaster evacuees demanded at a court here that Tokyo Electric Power Co. (TEPCO) shut down its Kashiwazaki-Kariwa nuclear plant permanently, saying the utility is not qualified to run nuclear reactors.

Three plaintiffs, including two nuclear crisis evacuees, made the demand on July 12 during the first round of oral proceedings at the Niigata District Court in a lawsuit filed by 132 people from six prefectures, including 13 evacuees from Fukushima Prefecture.

In the lawsuit, the plaintiffs demand TEPCO -- operator of the crippled Fukushima No. 1 nuclear plant -- permanently shut down all seven reactors at the Kashiwazaki-Kariwa nuclear plant in the city of Kashiwazaki and the village of Kariwa, Niigata Prefecture. The plaintiffs filed the suit to block any move to reactivate the idled reactors. TEPCO countered with a written reply urging the court to reject the suit.

The lawsuit is the first to seek the shutdown of a nuclear reactor operated by TEPCO since the outbreak of the Fukushima nuclear disaster in March 2011.

"We will never countenance TEPCO operating nuclear reactors after (the utility) has so badly contaminated our hometowns, and has yet to clean them up," the three plaintiffs at the July 12 hearing stated, adding, "Nuclear plants, which can cause unpredictable damage, must not be constructed. (TEPCO) should realize that it is going to pass this bitter legacy on to the future."

Describing the Fukushima nuclear crisis as a "man-made disaster," the plaintiffs said in the suit, "(TEPCO) has neither the qualifications nor capability to operate and manage nuclear plants." Because of such factors as the weakness of the earth beneath the plant, the plaintiffs argued that the Kashiwazaki-Kariwa nuclear plant was "built in an extremely dangerous place."

## Checks at Tomari plant



## Govt starts inspection of Tomari N-plant

<http://www.yomiuri.co.jp/dy/national/T120712004323.htm>

TOMARI, Hokkaido (Jiji Press)--The government's Nuclear and Industrial Safety Agency on Thursday started a two-day on-site inspection of two reactors at Hokkaido Electric Power Co.'s Tomari nuclear power plant in Hokkaido.

The purpose of the inspections is to assess whether the results of the first-phase stress tests conducted by the utility on the plant's Nos. 1 and 2 reactors are appropriate.

July 15, 2012

## So many uncertainties, delays and omissions

### Nuclear power plant safety promises sit on shaky ground

<http://mainichi.jp/english/english/perspectives/news/20120715p2a00m0na007000c.html>

**Earthquake prediction is fraught with uncertainty.** Ever since the March 2011 Great East Japan Earthquake that crippled the Fukushima No. 1 nuclear plant, researchers have underscored the difficulties in predicting temblors, saying there's no telling just how big an earthquake will be and maintaining that **science has its limits.**

Prime Minister Yoshihiko Noda gave the go-ahead for the resumption of operations at Kansai Electric Power Co.'s Oi nuclear plant, but both the government and power companies lack regard for this factor of uncertainty in quake prediction. They should admit that situations beyond their expectations can occur, and pour effort into devising disaster prevention measures for a major accident, such as creating evacuation plans.

Before 3.11, the government's Headquarters for Earthquake Research Promotion had predicted a magnitude-7.5 earthquake in the area where the Great East Japan Earthquake struck. But the devastating quake had a magnitude of 9.0 -- 180 times more powerful than this. University of Tokyo professor Robert Geller compares this to predicting light rain but getting hit by a massive typhoon.

Kazuki Koketsu, a professor in the Earthquake Research Institute at the University of Tokyo, commented that the disaster highlighted the "limits of science" in predicting major earthquakes. He pointed out the



miscalculated intensity in a publication last year, and stepped down as chief examiner of a government panel discussing quake-resistance measures at nuclear power plants.

After the massive earthquake, the Ministry of Economy, Trade and Industry's Nuclear and Industrial Safety Agency (NISA) started focusing more on the prospect of several faults moving in unison to trigger a huge earthquake. But Hiroyuki Fujiwara of the National Research Institute for Earth Science and Disaster Prevention says this development alone is insufficient.

"There are many elements that influence the scale of an earthquake besides joint (fault) movement, and each of them is variable," he says. "A change of just one element can double the scale of an earthquake. There has been an unspoken agreement (among specialists) to take a hard look at just one element without subjecting the second one onwards to the same stringent tests. But presumptions made for the sake of convenience won't cut it. There are faults we don't yet know about. If we don't discuss the uncertainties, we could again overlook something."

Since September last year, Fujiwara has presented such views at hearings held by NISA, but the government's response has been lackluster.

"It leaves you feeling empty," he says.

In a collection of essays released online by the Seismological Society of Japan in May, Tohoku University professor Toru Matsuzawa points out: "There is a great danger of making mistakes when predicting types of earthquakes we have not experienced."

**Uncertainties also surround tsunami predictions.** Kansai University professor Yoshiaki Kawata made calculations on a theoretical tsunami hitting the lower reaches of the Yodogawa River in Osaka as a result of the next Nankai Earthquake, which seismologists expect to be around magnitude-8.4, and published the results in the March issue of Iwanami Shoten's journal "Kagaku" (Science). Altering seven factors such as the angle at which faults could move, he calculated 20,000 scenarios, and found that in 20 of them, the height of the tsunami would top eight meters. In one case, the tsunami would reach a height of 10 meters. Previously, the largest predicted wave had been 2.5 meters high.

"Each factor is governed by coincidence. Though the rate is low, large figures are conceivable. The height of levees and the like should be decided through public consensus. Measures to reduce the extent of damage when a tsunami breaks the banks of a levee are also vital," Kawata says.

Masaru Kobayashi, head of NISA's Seismic Safety Office, comments, "Views on the uncertainties associated with inland earthquakes were presented at a hearing at the end of May and are being discussed, but the timing of discussion on ocean trench earthquakes has still not been decided."

**Delays have also been seen in preparations for future major disasters.** Haruki Madarame, chairman of Japan's Nuclear Safety Commission (NSC), told a Diet committee investigating the disaster at the Fukushima nuclear plant in February, "The IAEA (International Atomic Energy Agency) and other bodies are telling us to think about disaster prevention (in the event of a major accident). Our country had stopped doing that."

In March the NSC indicated that in the event of another major nuclear power plant disaster, immediate evacuation would apply to area within "about 5 kilometers of the nuclear plant," while areas within "about 30 kilometers" of the plant would be evacuated in stages. But the exact demarcations for each plant remain unclear. My home is about 7 kilometers away from the Kashiwazaki-Kariwa nuclear plant, but it's unclear whether the area I'm in would be subject to "immediate" or "gradual" evacuation.

Reviews of offsite centers serving as bases for government officials in the event of a nuclear accident have also faced delays. **It's feared that these centers could be rendered useless in the event of another major accident because they are too close to the plants.**

Against this backdrop, electric power companies have been reluctant to make preparations. In October last year, Kansai Electric Power Co. submitted the results of its "stress test," or safety evaluation, of the No. 3 reactor at its Oi nuclear plant. The first item in the evaluation is how many hours it would take for the plant's nuclear fuel to be damaged in the event of a total blackout. The power company concluded it would take "16 days" -- on the grounds that earthquakes and tsunamis were not part of its considerations. But after NISA pointed out that it was only natural to take earthquake and tsunami into consideration, the utility revised the time down to "one week." With no reinforcements, the time it would take for fuel to be damaged would drop further to just "a few days."

**Other power companies submitting the results of stress tests to NISA are also eliminating earthquakes and tsunamis from their calculation on the time it would take for fuel to be damaged.** But the whole reason the government imposed stress tests on nuclear power plants in the first place was because of the Fukushima nuclear crisis -- an event triggered by an earthquake disaster. The current stance of power companies casts significant doubt on whether they are seriously considering a major accident.

"They talk about the maximum possible scale of an earthquake, but if we knew that, we would have no difficulties," points out Kenji Satake of the University of Tokyo's Earthquake Research Institute.

If officials admitted the uncertainties in earthquake prediction, then surely they could no longer declare that any countermeasures are "perfect." The government and electric power companies must face this hard reality and work out the level of disaster countermeasures needed to win public understanding. ("As I see it" by Shogo Takagi, Kashiwazaki Bureau)

July 17, 2012

## Check the ground under nuclear plants!

### Experts: ground under nuke plants needs assessment

[http://www3.nhk.or.jp/daily/english/20120717\\_40.html](http://www3.nhk.or.jp/daily/english/20120717_40.html)

Experts have asked the government to assess cracks under the ground below and around nuclear power plants. They want to ascertain whether the gaps are active faults or not.

The Nuclear and Industrial Safety Agency is listening to opinions from geologists and other experts about breaches around nuclear plants throughout Japan.

The move came after some scientists recently pointed out **the possibility that the fissures near the No. 2 reactor of the Tsuruga nuclear plant in Fukui Prefecture, central Japan, could be active faults.**

**On Tuesday, the experts discussed the Ohi plant, also in Fukui Prefecture. They noted one of underground rifts runs about 900 meters from north to south between the No.2 and No.3 reactors.**

The analysts said there is not enough data to determine whether the cleft is active or not. They added the power company has to do more research.

At the Ohi plant, the No. 3 reactor was recently fully restarted and the No. 4 reactor is to resume operation on Wednesday.

**The analysts also asked that breaches under the Shika nuclear plant in Ishikawa Prefecture, central Japan be reassessed. They said there is a 300-meter-long cleft 250 meters below the No. 1 reactor, and that it may be an active fault.**

The nuclear safety agency is considering whether it should order power companies to carry out reassessments of plant security.

**The government's quake-proof guidelines for nuclear plants do not allow important nuclear facilities to be built directly above active faults. If cracks are found to be active faults the utilities will be barred from operating the reactors.**

## Shika too

### **Research shows Shika atomic plant may sit on active quake fault**

<http://mainichi.jp/english/english/newsselect/news/20120717p2g00m0dm042000c.html>

TOKYO (Kyodo) -- Governmental research has suggested a strong possibility that a fault beneath Hokuriku Electric Power Co.'s Shika Nuclear Power Station may be active, raising questions about the utility's claim in the late 1990s that it is inactive, sources familiar with the research said Monday.

Government regulations do not allow construction of a nuclear reactor above an active quake fault. If it is confirmed active, the Shika power station may be labeled as sitting on premises ineligible for a nuclear power plant.

The research by the Economy, Trade and Industry Ministry's Nuclear and Industrial Safety Agency shows the fault -- technically named S-1, which runs southeast to northwest within the premises -- moved sometime after 130,000 to 120,000 years ago, the sources said.

Hokuriku Electric Power conducted excavation surveys when it applied for building a second reactor for the plant in 1997 and, based on it, said the fault "does not indicate activity."

In a review of fault lines after the Great East Japan Earthquake of March 11, 2011, NISA went through excavation data presented by Hokuriku Electric and came to a conclusion that the research suggests a strong possibility that S-1 may have been active in a relatively recent period.

Geological layers comprised not just bedrock from ancient periods but sand and pebbles from a period dating back to 130,000 to 120,000 years and they were deformed, according to the sources.

It remains unknown at this point if S-1 generates a quake on its own or shakes ground in association with nearby active faults. Given that another fault lies beneath the No. 2 reactor, if the two faults jolt at the same time, it could throw the plant into danger.

Mitsuhisa Watanabe, a geomorphology professor at Toyo University, said, "I must say Hokuriku Electric is making a far-fetched assessment in saying that geological layers of 130,000 to 120,000 years have not been morphed."

Watanabe said the fault is suspected of having been active in a later period.

Research and surveys by NISA have suggested that a soft fault layer, called a crushed zone, could move at Japan Atomic Power Co.'s Tsuruga Nuclear Power Station in Fukui Prefecture, raising the possibility that the plant may have to be shut down.

Citizens are also calling for research into Kansai Electric Power Co.'s Oi nuclear power plant relating to a similar soft fault layer.

July 18, 2012

## **NISA orders investigation**

### **Nuclear safety agency orders underground survey**

[http://www3.nhk.or.jp/daily/english/20120718\\_26.html](http://www3.nhk.or.jp/daily/english/20120718_26.html)

Japan's nuclear safety agency has ordered power companies to assess underground cracks below 2 nuclear power plants on the Sea of Japan coast to determine whether or not they are active faults.

Experts with the Nuclear and Industrial Safety Agency suggested on Tuesday that further studies are needed on a 900-meter underground fissure that runs north-south between the No.2 and No.3 reactors at Ohi nuclear plant in Fukui Prefecture. They said a lack of data about the fissure led them to propose the investigation.

The experts also said a crack running 250 meters below the No.1 reactor at Shika nuclear plant in Ishikawa Prefecture is highly likely to be an active fault, but that analysis has been insufficient.

The agency on Wednesday instructed the plants' operators, Kansai Electric and Hokuriku Electric, to survey the sites.

The No.3 reactor at the Ohi plant is currently in operation after recently being brought back online. The No.4 reactor was also restarted on Wednesday night.

The agency says it will not order the reactors stopped for the survey, but that the outcome could affect their operation.

The agency has already ordered a reassessment of fissures at the Tsuruga nuclear plant in Fukui Prefecture and the Higashidori nuclear plant in Aomori Prefecture.

The government's quake-resistance guidelines do not allow construction of key nuclear facilities directly above active faults. This means the No.1 reactor at Shika plant might never be restarted.

## Shika plant may be sitting on an active fault

### Active fault may lie under Shika N-plant

<http://www.yomiuri.co.jp/dy/national/T120717005220.htm>

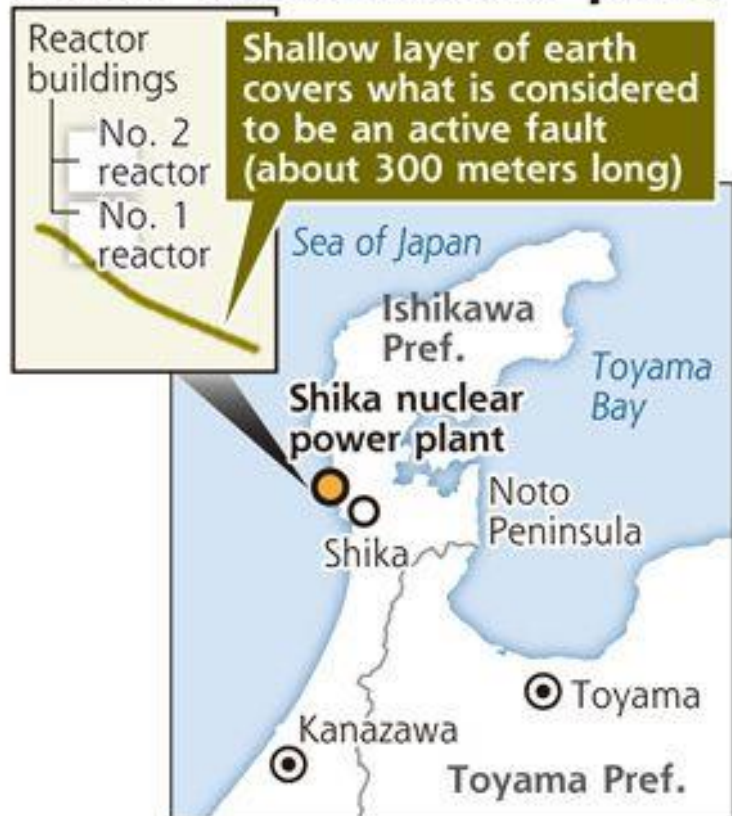
The Yomiuri Shimbun

A reactor building of the Shika nuclear power plant in Ishikawa Prefecture may have been built over an active fault, which could unleash an earthquake, the Nuclear and Industrial Safety Agency has disclosed.

The existence of an active fault below Hokuriku Electric Plant Co.'s Shika complex has been ruled out twice by the government during nuclear safety screenings.

However, NISA says the possibility of the fault being active may have been overlooked in both of the geological surveys at the plant's site.

### Where active fault may lie under Shika nuclear plant



The first of the government screenings was conducted in 1988 prior to the government's granting of permission to Hokuriku Electric to build the plant's No. 1 reactor, which became fully operational in 1993. The government gave the green light for the construction of the No. 2 reactor in 1999.

The building housing the No. 1 reactor has been built above what is now suspected to be an active fault.

NISA, the nuclear watchdog of the Economy, Trade and Industry Ministry, is scheduled to hear the views of experts Tuesday on the matter before issuing instructions to Hokuriku Electric to carry out a detailed survey on the potential fault, officials said.

As the survey will take several months, resumption of the Shika plant's operations will be delayed significantly, forcing the utility to secure alternative power sources to meet the surge in demand in the coming winter.

This is the second time a reactor building has been constructed above what is suspected to be an active fault. In April, a potentially active fault was found at the Japan Atomic Power Co.'s Tsuruga complex in Fukui Prefecture. If the existence of an active fault is confirmed, it will amount to a violation of government-set standards prohibiting nuclear plants and other important facilities from being built in locations where active faults exist.

A shallow layer of earth covers a 300-meter-long depression running beneath the southwestern corner of the Shika plant's No. 1 reactor building. The depression is about 250 meters deep, NISA officials said.

When it applied for government permission to build the No. 1 reactor, Hokuriku Electric said the depression was not an active fault but a fissure that might have been created by water erosion. Government officials did not question the utility's explanation, according to NISA.

In the wake of the Great East Japan Earthquake last year, NISA examined drawings of drilling surveys Hokuriku Electric submitted to the ministry before it received permission for building the No. 1 reactor. The examination was conducted as part of an ongoing review of possible active faults in and around nuclear plants across the country.

The findings at the Shika plant showed that the fissure was most likely a reverse fault, one that was created when the bedrock was forced upward an estimated 120,000 to 130,000 years ago.

In light of this, NISA concluded the fault should have been detected before the Shika plant was built, the officials said.

NISA is now trying to determine why the potential fault was not discovered during government screenings, but no conclusions have been reached.

A Hokuriku Electric official said, "We don't believe there is a major problem [with what is suspected to be an active fault], but we are ready to respond appropriately when NISA gives us instructions."

Mitsuhsa Watanabe, a professor of geomorphogeny at Toyo University, said: "By examining the drilling survey drawings, the fissure looks like an active fault to me."

"I wonder how the government carried out the screenings before it issued permission for the reactors' construction. The NISA must carry out investigations [of active faults] as quickly as possible at other nuclear power plants."

Regarding the possibility that active faults exist in the compounds of other nuclear plants, NISA has pointed to the immediate need for reexamining other facilities such as Kansai Electric Power Co.'s Mihama and Takahama plants in Fukui Prefecture and Tohoku Electric Power Co.'s Higashidori plant in Aomori Prefecture.

The Nos. 1 and 2 reactors of the Shika plant, with outputs of 540,000 kilowatts and 1,358,000 kilowatts, respectively, are both boiling water-type reactors. They account for 20 percent to 30 percent of Hokuriku Electric's power generation capacity.

## **Experts say active fault situated below Shika nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20120718p2a00m0na012000c.html>

Experts on a Nuclear and Industrial Safety Agency (NISA) panel have pointed out that a fault situated just below the No. 1 reactor at the Shika Nuclear Power Plant in Ishikawa Prefecture is highly likely to be an active fault.

Moreover, many of them called for studies of a fault fracture zone, which lies below the premises of the Oi Nuclear Power Plant in Fukui Prefecture.



NISA is taking the opinions seriously and is poised to decide by the end of this month to conduct follow-up surveys on the possible impact that the faults will have on the respective power plants.

Economy, Trade and Industry Minister Yukio Edano told a news conference following a regular Cabinet meeting on July 17, "If expert opinions show it's likely to be an active fault, we'll take prompt action."

NISA held a meeting of 16 experts, including those in the fields of quake resistance and faults, on July 17, in which many attendees pointed to the possibility that the so-called "S-1" fault below Shika plant's No. 1 reactor building is an active fault that moved around 120,000 to 130,000 years ago, or possibly later.

The reactor could be forcibly decommissioned because the government's guidelines for the quake-resistance of nuclear plants do not permit the construction of any nuclear reactors just above an active fault that moved anytime from 120,000 to 130,000 years ago.

An official of Hokuriku Electric Power Co. that operates the Shika plant reiterated its assertion that the fault was made as a result of corrosion by waves and will not trigger a powerful earthquake.

However, many of the experts countered by showing a drawing of the geographical structure of the area based on a survey and asserted that it is a typical active fault. They then called for a detailed survey on the site.

None of the experts ruled out the possibility that S-1 is an active fault, and some attendees criticized the government for approving the results of Hokuriku Electric Power's survey on the fault without sufficiently confirming the details.

The utility has already submitted its primary assessment of its safety evaluation of the Shika plant's No. 1 and 2 reactors, which is a prerequisite for reactivating them. NISA's inspection on the No. 2 reactors has entered a final stage.

However, since an additional survey is expected to take several months, there is a possibility that the resumption of operations at the reactor will be delayed.

Kansai Electric Power Co. submitted a new photo showing parts of a fault fracture zone situated below its Oi Nuclear Power Plant to the meeting of experts, and explained the condition of the fault. However, it failed to convince the experts.

"The entire picture of the fault remains unclear," one of them said.

"We can't expect to receive any more convincing materials. A survey needs to be conducted to judge whether it's an active fault," another pointed out.

The No. 3 reactor at the power station has already been reactivated and operations at the No. 4 reactor are scheduled to be resumed on July 18.

Shinichi Kuroki, deputy director general for nuclear power at NISA, denied that the experts' opinions will affect operations at the Oi nuclear plant.

"I don't think the safety of the plant has been denied. There'll be no immediate impact on its operations," he told reporters.

NISA is set to work out criteria on judging whether the faults below these power plants are active faults as well as details of follow-up surveys.

A new atomic power regulatory body to be launched in September is expected to determine whether these faults are active.

July 19, 2012

## Beware of active faults

### **Yoroku: Heedless attitude to fault lines by gov't, electric companies risks disaster**

<http://mainichi.jp/english/english/perspectives/news/20120719p2a00m0na010000c.html>

In Japanese legend, earthquakes were caused by the thrashing of a giant Namazu catfish living in the mud beneath the archipelago. When did Japanese people start believing a catfish could cause earthquakes? Probably the oldest known written reference to the Namazu is in a letter by 16th century warlord Toyotomi Hideyoshi.

As Fushimi Castle was being built in Kyoto, Toyotomi wrote, "On the construction of Fushimi, be mindful of the Namazu." That is, the castle must be built to withstand earthquakes.

Before Fushimi was built, Toyotomi had ridden out an earthquake in Sakamoto Castle, on a causeway in catfish-rich Lake Biwa, so perhaps the association stuck in his head. Despite Toyotomi's orders, however, Fushimi Castle was in the end destroyed by the Keicho Fushimi earthquake of 1596. The quake killed many, but Toyotomi managed to survive.

Catfish are no longer the prime suspects when the earth moves, as we now know that quakes are caused by active fault lines. Knowing this, "be mindful of the active faults" ought to have been as basic an imperative during the construction of Japan's nuclear plants as it was to Toyotomi's castle architects more than 400 years ago. **And yet expert after expert is now telling us that the fault running right under Hokuriku Electric Power Co.'s Shika nuclear plant is a "textbook" active fault line.** How did this happen?

All of Japan is now reassessing the risks presented by active faults in the wake of the Great East Japan Earthquake and the knowledge obtained from that disaster. In the process, hitherto discounted possible active faults near the country's nuclear plants are getting renewed attention and evaluation. The fault under the Shika plant, which until now Hokuriku Electric had treated as at zero risk of producing an earthquake, is one such case.

**Recently, however, an expert committee begged to differ, pointing out that even the seismic evaluation data from the time the government gave the go-ahead for the plant's construction showed the fault under the site was active.**

"It's amazing that the plant plans passed inspection," the committee stated, heaping criticism on the government inspectors at the time. In other words, neither the electric company nor the central government was being "mindful of the active faults." Of course, if the re-evaluation of the site confirms the fault under it is indeed active, there will be no way that Hokuriku Electric will be able to avoid shuttering the Shika plant's reactors.

**Though the Shika power station has been getting all the headlines recently, it is by no means the only nuclear plant dangerously close to a fault line.** Plants nearby suspected active faults include the recently restarted Oi nuclear power station in Fukui Prefecture, and we cannot excuse a perfunctory seismic reevaluation there or at any other plant.

Even those mindful of the Namazu like Toyotomi Hideyoshi cannot outwit the great fish, never mind those -- like the government and electric companies -- who pay it no heed at all. ("Yoroku," a front-page column in the Mainichi Shimbun)

## **Petition to Ban Ki-moon**

on the "Blog de Fukushima":

### **An urgent appeal to avoid another global nuclear disaster**

Because the building of reactor no.4 has been badly shaken by the terrible earthquake of 3/11 and the violent explosions of March 15, 2011 and therefore its structure has suffered severe stress, which makes it very vulnerable,

Because the spent fuel in this unit sits in an elevated pool 30 metres high and threatens to collapse with the building or to drain because of a number of cracks,

Because this pool contains 1,535 spent fuel assemblies, i.e. the equivalent of 10 times the amount of cesium 137 released by Chernobyl,

Because failure of the water cooling of the fuel would cause the temperature to rise and the fuel to degrade, and the resulting fire would then release enormous amounts of radioactivity into the atmosphere,

Because a back-up cooling system for the pool is not available and the cooling system regularly fails,

Because a fire in the uranium and plutonium assemblies would make human intervention impossible due to the intense radioactivity,

Because the Fukushima Daiichi plant contains nearly 2,500 tons of nuclear fuel – a source of radiotoxicity equivalent to 90 times that of Chernobyl – and a fire at unit 4 would force the authorities to abandon the entire plant,

Because the strength of the earthquake of March 2011 increased the probability of further disastrous quakes which could in turn cause the half-ruined building of reactor no.4 to collapse,

Because numerous experts all over the world agree on the urgency to act in order to avoid having to evacuate the whole of Japan and at the same time prevent an international radiological disaster that would endanger the health of the world population and their descendants,

Because Tepco says there is no risk the pool will collapse and because the company plans to take years to transfer the spent fuel and store it in a safe place,

Because Tepco and the Japanese government are incapable of managing the crisis situation of the spent fuel pool at Fukushima Daiichi reactor no.4,

Because the UN, as guarantor of international security, is the only organisation capable of dealing with this permanent threat to humanity,

**We, citizens of the world,**

- **request that the UN rapidly set up an international, independent and interdisciplinary team. This team would be responsible for managing the transfer of the fuel at the Unit 4 pool and its safe storage.**
- **urge that every possible means be devoted to this crisis team, in order to avoid any delay and to ensure that the spent fuel be safely disposed of as soon as possible,**
- **demand that the UN facilitates every possible technical, scientific, economic and political means of collaboration, including non-governmental measures, in order to put an end to a global threat without equivalent in the whole history of humanity.**

### **An urgent appeal to prevent another global disaster**

<http://fukushima.over-blog.fr/article-an-urgent-appeal-to-avoid-another-global-nuclear-disaster-108329137.html>

***It has taken 16 months for the world to come to terms with the Fukushima disaster. This is 16 months too many: since that week in March 2011 where four reactors exploded on the same site, the situation has remained extremely dangerous. We have had 16 months to analyse and make sense of what happened. Now that we have got over the initial shock - this unthinkable "collision" - we must rally and resist the temptation to forget. The danger is still there and is becoming more threatening as times passes.***

Once again the Japanese population is showing the way. The Japanese refuse to give up and they manage to stand up to a government who has decided to restart the Ohi nuclear reactors, despite suspicion of active fault lines in the vicinity. They have also taken action and addressed the UN Secretary-General, in order to try and avoid the worst-case scenario: a loss of control of the system that cools the 264 tons of spent fuel stocked in the pool of Unit 4 at Fukushima Daiichi. This risk is far from trivial ; a failure of the cooling system would mean having to evacuate parts of Japan and would irreparably pollute the whole world for thousands of years.

All this we have known for 16 months but awareness of the urgency to solve this major problem has never gone beyond good intentions. Today, after being stunned into inaction by the sheer horror and enormity of the disaster, more and more people finally seem to realise we *can* still react. Enlightened voices can be heard from all over the world : Let us do something before it is too late!

Dear readers, I urge you to listen to these voices again. If you are already convinced of the need to act urgently, scroll down to the text of the petition we are now addressing to the UN Secretary-General.

### **About quake risks**



**Katsuhiko Ishibashi**, a seismologist teaching at the *Research Center for Urban Safety and Security, Kobe University*:

The magnitude 9.0 quake last year made it more likely that "*devastating*" earthquakes would follow in the future. (link)



**Dapeng Zhao**, geophysics professor at Japan's Tohoku University :

*"Given that a large earthquake occurred in Iwaki not long ago, we think it is possible for a similarly strong earthquake to happen in Fukushima."* (link)

### **About the stability of the building of reactor no.4**

**Masashi Goto**, a former nuclear engineer for Toshiba Corporation and expert in the design of quake-resistant nuclear plants:



*"Even though the walls exist, there is no simple way of knowing the stability of it. To what degree has the stability been compromised due to the high temperature of fire? Essentially, all data are required when you work out a structural calculation... But [TEPCO engineers] have never released a data which a third party could use to re-check their findings."* (link)

**Arnie Gundersen**, an American nuclear expert:



"I believe that the structural damage to Unit 4 is so great that if there is a 7.5 earthquake, it will not withstand it." (link)

**Jean-Louis Basdevant**, a physicist, research director at CNRS (Centre national de recherche scientifique), specialist in High Energy Physics and Astrophysics:



*"At this very moment, i.e. June 25, 2012 [the reactor no.4 building] is a constant source of worry because these pools that sit 30 meters above ground and have miraculously survived contain a large quantity of radioactive rods."* (link)

**About the radiation resulting from a loss of control  
of the pool at Unit 4**

**Olivier Isnard**, a French expert in nuclear safety at IRSN (Institut de Radioprotection et de Sûreté Nucléaire) :



*"The fuel in this pool would be exposed to the air; **radiation in the order of hundreds of grays per hour would spread over a kilometer and no human being could go near the site**"* (link)

**Hiroaki Koide**, a professor at Kyoto University Research Reactor Institute (KURRI):



*"If the spent fuel pool were to collapse due to another big earthquake, the release of radioactive materials will be huge.(...), **a conservative estimate is 5000 nuclear bombs.**"* (link)

**Chris Harris**, a former American nuclear engineer:

*"In the case of Unit 4... **you can get a recriticality.(...) That would be a never ending process threes no way to shut that down.(...) there you have another never ending fountain of particulates and gas.**"* (link)

**Robert Alvarez**, an American nuclear expert, adviser to the Federal Department of Energy of the American government (1993-1999)



*"The No. 4 pool is about 100 feet above ground, is structurally damaged and is exposed to the open elements. **If an earthquake or other event were to cause this pool to drain this could result in a catastrophic radiological fire involving nearly 10 times the amount of Cs-137 released by the Chernobyl accident.**"* (link)

### About the effects of the loss of cooling water in a pool

**Paul Gailey**, Physics professor at Ohio University:

*"A catastrophic failure of the unit 4 spent fuel pool could potentially **cascade into additional releases** from the other spent fuel pools and reactors."* (link)

**Yukiteru Naka**, a Japanese engineer for General Electric, now president of Tohoku Enterprise (TECO):



*"Should the spent fuel pool empty, no workers will be able to go near the reactor 4 building as well as the reactor 1, 2 and 3 building.(...) that's why I would like the government and TEPCO to prepare themselves with a sense of impending crisis in mind."* (link)

**Akio Matsumura**, a Japanese diplomat who worked for 30 years for various UN agencies :



*"[The collapse of No. 4 pool in case of a quake]would destroy the world environment and our civilization. (...) **This is an issue of human survival.**"* (link)

**Mitsuhei Murata**, former ambassador of Japan in Switzerland and Senegal:

*"Just 50 meters from the No. 4 reactor is the common pool for the No. 1 to No. 6 reactors. The common pool holds 6,375 spent nuclear fuel rods. If a fire should occur at the No. 4 reactor pool, the common pool would also not stand a chance."* (link)



*"It is no exaggeration to say that the fate of Japan and the whole world depends on No. 4 reactor"* (link)



**Ron Wyden**, an American Senator (Oregon):



***"The precarious status of the Fukushima Daiichi nuclear units and **the risk presented by the enormous inventory of radioactive materials and spent fuel in the event of further earthquake threats should be of concern to all and a focus of greater international support and assistance."***** (link)

**To prevent the worst-case scenario, let us take precautionary measures before it is too late !**

Please sign this petition to the UN  
(Click on the picture)



Check them, "just in case"



July 20, 2012

## **Research planned on faults at N-plants**

The Yomiuri Shimbun

<http://www.yomiuri.co.jp/dy/national/T120719003829.htm>

The Nuclear and Industrial Safety Agency has ordered Hokuriku Electric Power Co. to determine whether there is an active fault below its Shika nuclear power plant in Ishikawa Prefecture.

At an agency hearing on Tuesday, experts pointed out there was a high possibility the plant's No. 1 reactor had been built on top of an active fault, a fact that may have been overlooked by the central government during safety screenings in the 1980s. The agency, which is operated by the Economy, Trade and Industry Ministry, issued the request Wednesday. HEPCO was asked to submit its findings by next Wednesday.

**The agency also ordered Kansai Electric Power Co. to determine whether a fault near its Oi nuclear power plant in Fukui Prefecture is active.**

Although first-round stress test evaluations--a requirement for restarting reactors--for the Nos. 1 and 2 reactors at the Shika plant have been submitted, Yoshinori Moriyama, the agency's deputy director general for nuclear disaster response, said, "It's difficult to restart [the reactors] before receiving research results."

**The agency also plans to investigate the reasons why the potentially active faults were overlooked for years.**

In regard to the Oi plant, the agency said it decided to carry out the research "just in case" after listening to expert opinions on Tuesday.

## **Draw lessons from Fukushima?**

### **US panel to study Fukushima nuclear accident**

[http://www3.nhk.or.jp/daily/english/20120720\\_22.html](http://www3.nhk.or.jp/daily/english/20120720_22.html)

The US National Academy of Sciences has set up a committee to study the lessons from last year's accident at the Fukushima Daiichi nuclear plant in Japan.

Representatives of the government's Nuclear Regulatory Commission, nuclear experts and officials of the

US nuclear power industry took part in the first meeting in Washington on Thursday.

NRC officials said they took steps to ensure that nuclear plants have emergency power backup systems after the September 11th terrorist attacks in 2001. They said the commission has intensified these measures since the Fukushima disaster in March last year.

A participant said excessive confidence in the safety of nuclear power plants was partly to blame for the Fukushima disaster. NRC officials said they will examine whether safety is being overestimated in the US.

Another participant pointed out that the Japanese government meddled with the operator's attempts to deal with the accident immediately after it occurred.

The participants agreed to discuss ways to prevent a recurrence of this problem in the US.

The committee plans to compile proposals to improve the safety of nuclear plants in the US and submit the report to Congress **by mid-2014**.

More about the necessity of faults investigation

## **Editorial: Fault probes at nuclear plants overdue in quake-prone Japan**

The possibility that an active fault runs below the No. 1 reactor at Hokuriku Electric Power Co.'s Shika nuclear plant has grown increasingly likely. If the fault were to move, the nuclear plant could suffer damage. The construction of a nuclear power plant on top of a fault is extremely risky and unacceptable.

"Any other experts seeing the data would be appalled," said a participant at a meeting of specialists at the Ministry of Economy, Trade and Industry's Nuclear and Industrial Safety Agency (NISA).

One does not have to be a seismological expert to feel alarmed.

NISA has ordered a reinvestigation into the plant and the ground beneath it -- a natural move. If the survey confirms suspicions of the fault's existence, then the plant should be decommissioned.

Why had such a major risk been neglected all these years in the first place? In a 1987 application for the plant's construction, Hokuriku Electric denied that the fault in question was an active one, and nuclear regulatory authorities confirmed the claim. When the plant was checked for adherence to quake-resistance guidelines revised in 2006, no red flags about the fault were raised.

Did these instances of oversight take place against a backdrop of slapdash surveys and screenings? Was there an intentional cover-up of the dangerous fault through mutual back-scratching between the utility and regulatory authorities, as the Diet's Fukushima Nuclear Accident Independent Investigation Commission recently pointed out?

Along with a reinvestigation of the fault at the Shika Nuclear Power Plant, NISA has ordered a review of a crushed zone running beneath Kansai Electric Power Co.'s Oi Nuclear Power Plant, where two reactors were recently reactivated. Crushed zones are traces of crushed rock on faults, and have the possibility of being active. The zone's existence was known, but both Kansai Electric and the government had judged it to be harmless when they gave the go-ahead to the plant's restart. NISA's expert committee had also been dismissive of the possibility of an active fault.

However, it has now been revealed that the information that had heretofore been made available does not provide a complete picture of the situation. That nuclear reactors are being operated under such circumstances is unacceptable. On-site investigations should be conducted as soon as possible.

Questionable also is the approach Kansai Electric has taken. The utility was told to submit information to the NISA committee at a previous meeting, but did not make the deadline. They have shown to be careless in management and lacking in sincerity. It's not surprising that the public suspects the company has been calculating the effects of any information it releases on the reactivation of its Oi nuclear plant.

Doubts about faults emerged before the nuclear reactors were reactivated, and the restarts should have been kept on hold while on-site investigations were conducted. Now that authorities have ordered reinvestigations, the reasonable thing would be to fundamentally reconsider the decisions made about restarting the reactors. A renewed effort should be made to strike a balance between summertime power consumption and energy-saving efforts, and the risks of faults and other factors.

Meanwhile, NISA has instructed the review of other plants, including the Japan Atomic Power Co.'s Tsuruga nuclear plant, where the likelihood of active faults running underground is believed to be high. All nuclear reactors across the country should be subject to new, thorough inspections.

The decision to conduct these reinvestigations has come far too late. The Japanese archipelago is not only surrounded by plates that generate massive earthquakes, it also has countless faults. In choosing our energy policy, we must rethink what the risks are for such an earthquake-prone country as Japan.

## A "safety" team from utilities?

### Industry team set up to deal with nuclear accident

[http://www3.nhk.or.jp/daily/english/20120722\\_08.html](http://www3.nhk.or.jp/daily/english/20120722_08.html)

Japan's electric power companies are planning to jointly organize emergency response teams to deal with accidents at their nuclear power plants.

The Federation of Electric Power Companies of Japan says the first team will be formed by next March.

The team will consist of **100 workers** chosen from nuclear power plants across the country. They will have **3 robots** capable of removing debris and transporting equipment at sites contaminated with high levels of radiation.

The robots will be kept at a nuclear power facility in central Japan's Fukui Prefecture.

The cost for purchasing robots is estimated at 1.2 million dollars. Another 2.5 million dollars more will be needed every year to cover the costs of operating the team. Utilities that have nuclear power plants will share the costs.

The federation plans to form another team in 2015. Its goal is for an emergency team to be able to start on-site work within 24 hours of a nuclear accident anywhere in the country.

The federation chairman Makoto Yagi says forming emergency teams is part of efforts to increase the safety of Japan's nuclear power plants to the world's highest level.

July 24, 2012

## Emergency tsunami drill at Onagawa

### Disaster drill held at Onagawa nuclear plant

[http://www3.nhk.or.jp/daily/english/20120724\\_27.html](http://www3.nhk.or.jp/daily/english/20120724_27.html)

A Japanese power company has held an emergency tsunami drill at its nuclear plant in disaster-hit Miyagi Prefecture.

Tohoku Electric Power Company based Tuesday's drill on a scenario involving a magnitude-9.0 quake off Miyagi and an ensuing tsunami that hits the Onagawa plant.

About 150 workers used 4 power trucks to practice restoring external energy sources in case generators break down. The generators are on high ground to protect them from tsunamis.

In last year's Fukushima accident, emergency generators and other power sources were lost due to a tsunami, leaving workers unable to cool down reactors.

Onagawa workers also practiced using vehicles to inject water into reactors. The utility introduced the vehicles in March.

The plant's 3 reactors shut down automatically after last year's disaster.

## "No such thing as absolute safety"

### No such thing as absolute safety for Japan's nuclear power plants

<http://mainichi.jp/english/english/perspectives/news/20120724p2a00m0na003000c.html>

A final report by a government panel investigating the crisis at the Fukushima No. 1 Nuclear Power Plant and other reports presented by the Diet and the private sector share the position that the nuclear disaster could have been prevented had preparations for a major earthquake and tsunami been sufficient.

The "sufficient preparations" that the final report mentions start with predictions based on academic research on just how big an earthquake and tsunami could be. The latest report criticizes regulatory authorities and the Fukushima plant's operator, Tokyo Electric Power Co. (TEPCO), for failing to prepare for a tsunami on par with that generated by the Jogan Earthquake of 869. But it was only relatively recently, before the Great East Japan Earthquake, that it was learned there had been a tsunami of this size in the past.

Research into earthquakes and tsunamis is continually advancing. Accordingly, we don't know whether what is considered "sufficient preparation" now will be sufficient in the future. When restarting reactors at Kansai Electric Power Co.'s Oi Nuclear Power Plant in Fukui Prefecture, the government explained that it had taken "sufficient safety measures." But this was simply a case of applying knowledge from the Fukushima disaster.

Debate on the nation's future energy policy is at a crucial stage, with a decision set to be made on the level of Japan's dependence on nuclear power in 2030. But whatever the level of dependence, we cannot separate ourselves from nuclear power plants for the time being (or a considerably long time if we take the decommissioning of plants or the disposal of high-level waste into account). **In this respect, we can never have perfect safety measures at all times, and must come face to face with the nuclear plant issue.**

That being the case, **we must stand on the assumption that nuclear accidents can occur**, and just as the government panel investigating the Fukushima disaster suggests, we will have to consider our response after an accident, such as how residents should be evacuated.

As we now decide on the nation's future energy policy and choose whether or not to restart nuclear power plants, regardless of our choice, **the Fukushima disaster reports teach us that we must accept the fact that there is no such thing as absolute safety.** (By Tetsushi Teruyama, Science and Environment Department)

July 25, 2012

## Why is it a problem today?

### Ishikawa governor demands explanation

[http://www3.nhk.or.jp/daily/english/20120725\\_35.html](http://www3.nhk.or.jp/daily/english/20120725_35.html)

The governor of Ishikawa Prefecture says he wants to know why the government ordered the probe of a seam it deemed safe 25 years ago.

Masanori Tanimoto on Wednesday called for the Shika plant's operator to carry out the probe ordered by the nuclear safety agency.

**The government had not considered the fissure a problem when it authorized construction of the plant's No.1 reactor.**

Tanimoto asked why the government later had a different view based on the same data. He said it would be understandable if the government had seen new data.

Tanimoto said the agency should clarify its position rather than believe whatever scientists say.

## Hokoriku and Kansai to check below their reactors

### Hokuriku Electric promises in-depth check-up

[http://www3.nhk.or.jp/daily/english/20120725\\_36.html](http://www3.nhk.or.jp/daily/english/20120725_36.html)

The president of Hokuriku Electric Power Company Susumu Kyuwa has said the utility takes very seriously the government directive to conduct in-depth safeguarding analysis.

He added he believes the safety of his company's nuclear power plant has been established by the government's own testing.

Kyuwa noted the utility will activate thermal power plants in response to consumers' concerns over possible power shortages.



## Hokuriku Electric submits crack assessment plan

[http://www3.nhk.or.jp/daily/english/20120725\\_28.html](http://www3.nhk.or.jp/daily/english/20120725_28.html)

The operator of a nuclear power plant in Ishikawa Prefecture, on the Sea of Japan coast, has informed the government of its plan to probe a seam below the facility to determine whether it's an active fault.

Hokuriku Electric Power Company submitted the plan on Wednesday to the Nuclear and Industrial Safety Agency, which had ordered the probe.

Last week, a government panel of experts said that the 300-meter-long crack running about 250 meters below the No.1 reactor at the Shika nuclear power plant is highly likely to be an active fault, but that further assessment is needed.

The plant's two reactors are currently offline for regularly scheduled inspections.

The utility says it plans to start the probe next month by digging a tunnel below the reactor building to determine how long the seam runs and when the ground had shifted in the past.

The company also plans to ask experts to carry out an on-site assessment.

The results will be reported to the government after the investigation is completed in January.

On Wednesday, Kansai Electric Power Company also submitted its inspection plan to the agency. The utility will investigate a seam that runs about 900 meters from north to south between the No.2 and No.3 reactors of the Ohi nuclear power plant. The seam is at a depth of 150 meters. The company says it will report the results to the government as early as by the end of the year.

The government's quake-resistance guidelines ban the construction of key nuclear facilities directly above an active fault. This means the reactors may never be restarted depending on the outcome of the probes.

The nuclear safety agency has ordered similar assessments of underground seams at the Tsuruga nuclear plant in Fukui Prefecture and the Higashidori plant in Aomori Prefecture.

## Seams not checked for 25 years at Shika

[http://www3.nhk.or.jp/daily/english/20120725\\_29.html](http://www3.nhk.or.jp/daily/english/20120725_29.html)

Seams beneath the Shika nuclear plant were judged safe 25 years ago, and have not been reassessed since.

Hokuriku Electric, the operator of the Shika plant, applied for government permission to build the plant's No.1 reactor in January 1987.

The utility decided the seven underground breaches, including the one at issue, in the area were not a hazard, and the industry ministry agreed based on its own safety assessment. The ministry is in charge of nuclear power plants.

The decision was upheld by outside experts with the Nuclear Safety Commission in May 1988.

The government gave permission to build the No.1 reactor about 18 months after the utility applied for it.

In 2006, the government instructed power companies to reassess active faults and seams following a revision of quake resistance guidelines for nuclear plants.

Hokuriku Electric looked into 20 active faults around the Shika plant by drilling, but the underground fissures were not included in the inspection.

July 26, 2012

## Nuke safety agency urged to check probe properly

### Localities call for check on plant seam probe

[http://www3.nhk.or.jp/daily/english/20120726\\_28.html](http://www3.nhk.or.jp/daily/english/20120726_28.html)

Local government leaders have asked Japan's nuclear safety agency to strictly check a planned probe of a seam below a nuclear power plant in Ishikawa Prefecture, central Japan.

Ishikawa Vice Governor Hiroyasu Takenaka and the deputy mayor of Shika Town submitted the request to the Nuclear and Industrial Safety Agency in Tokyo on Thursday.

Last week, experts of a government panel said the crack below the Shika nuclear power plant's No.1 reactor is very likely an active fault.

This prompted Hokuriku Electric Power Company to submit to the agency a plan to conduct the probe.

The prefecture and town called the panel's remarks extremely regrettable, saying they greatly undermined public trust in the central government's checking system.

The localities asked the agency to fulfill its responsibility to assess the probe and explain it to the public.

Vice Governor Takenaka told reporters it's unclear whether the reactor can be restarted. He added that he hopes the agency will take strict measures to remove doubts about the plant's safety.  
Diverging conclusions - Questions left unanswered

July 27, 2012

## Fukushima probes leave questions

### Two blame tsunami for meltdowns but one still points to quake factor

<http://www.japantimes.co.jp/text/nn20120727a5.html>

By KAZUAKI NAGATA  
Staff writer

The final report handed in Monday by the government panel appointed to investigate the Fukushima nuclear disaster wraps up the work of the three major probes, but many questions remain unanswered.

Key among them is whether the 9.0-magnitude Great East Japan Earthquake may have damaged the Fukushima No. 1 plant's reactors and cooling systems before the tsunami struck.

The three investigative teams' findings diverge sharply over this critical point.

The government panel and an independent team set up by the Rebuild Japan Initiative Foundation and headed by Koichi Kitazawa, a former chemistry professor at the University of Tokyo — largely concluded that the monster tsunami, not the quake itself, critically damaged the plant, leading to the meltdowns.

But the Diet-appointed independent panel, imbued with stronger investigative authority, suspects the offshore quake, which preceded the tsunami by 40 minutes, severely damaged some of the three reactors.

This again raises **serious questions about the quake resistance of older reactors across the country, as well as most of the antidisaster measures the government has adopted since the Fukushima crisis started.**

Most of the Fukushima-inspired safety measures adopted for reactors focus on the tsunami risk, because Tokyo Electric Power Co. and the government played down the impact of the quake, which was rated a strong 6 on the Japanese intensity scale to seven at the Fukushima plant.

"We concluded that Tepco was too quick to cite the tsunami as the cause of the nuclear accident and to deny that the earthquake caused any damage. We believe there is a possibility the earthquake damaged equipment needed for ensuring safety," the Diet panel headed by Kiyoshi Kurokawa, the University of Tokyo professor emeritus, said July 5.

The Diet panel argued that the quake might have knocked out some of the emergency diesel generators and damaged pipes carrying coolant to the cores.

If a crack as small as even 0.3 sq.-cm developed in a pipe and was left untended for 10 hours, tons of coolant water would escape, causing the core to heat up and eventually melt, the panel said in its final report.

The temblor as recorded at the Fukushima plant was powerful, but still within the scope of jolts that could be expected anywhere in Japan. If the march Great East Japan Earthquake is actually found to have caused severe damage at the Fukushima plant, the government will again likely be forced to rescrutinize the quake resistance at many of the nation's older reactors.

The government's panel, headed by Yotaro Hatamura, another professor emeritus at the University of Tokyo, generally takes the utility's line on quake damage.

"It is unlikely that the reactors lost their ability to contain (the fuel) because of the earthquake," given the data currently available, said Shinji Ogawa, director general of Hatamura's panel, at a press conference on July 23.

The government panel, however, said that computer simulations suggest even a 0.1 sq.-cm crack would cause the pressure in the containment vessel to be significantly different from actually what happened, and thus it is difficult to assume the quake was the main cause of the meltdowns. It is not clear if any scenario was presented for multiple pipe cracks, or where.

Meanwhile, settling this critical debate may take years because the lethal radiation levels in the main reactor buildings will prevent anyone from getting close enough to search for cracks or other damage, including to pipes and other equipment.

Hatamura thus proposed the government set up another investigative body to guide the probe into the foreseeable future, because Tepco's nuclear repairmen are in for a long wait.

The Diet panel said the megaquake might have severely damaged water pipes in reactor 1 because nobody in the control room heard the safety-relief valves engage. Reactor 2's SRVs meanwhile were clearly and repeatedly heard.

The SRVs automatically open to release steam from the pressure vessel to the outer containment vessel if pressure rises dangerously. But if pipes are damaged and leaking water, the internal pressure won't rise and the SRVs won't open, either.

If water was leaking from some of the damaged pipes, the pressure vessel would lose coolant and heat up. This might have been the real cause of the reactor 1 meltdown, the Diet panel said.

Tepco strongly denied that, and the Diet panel has yet to find any evidence to back up its speculation, except for the testimonies of the workers who were there. Oddly, reactor 1 was not equipped to monitor SRV movements, although reactors 2 and 3 were.

Also, the Diet panel said the earthquake might have knocked out one of the emergency generators at reactor 1 before tsunami flooded the plant.

Tepco has claimed that the initial tsunami smashed into the power station at 3:35 p.m. on March 11 and knocked out all emergency generators and caused a total power outage — a scenario known as a station blackout.

But the Diet panel said that a wave gauge set up about 1.5 km off Fukushima's coast recorded the tsunami sweeping by at exactly 3:35 p.m., and estimated that it would have taken at least two more minutes for it to reach the plant.

This means the generators would have been knocked out sometime after 3:37 p.m. if they were halted by the waves.

Since the generator in question, which was set up in the basement of the turbine building, is believed to have been disabled between 3:35 and 3:36 p.m., this implies the quake and not the waves was responsible, the report said.

Since the tsunami flooded the basement, the generator would have stopped eventually.

The government panel said it is possible that the tsunami might have come after 3:37 p.m., but when analyzing the situation comprehensively, it natural to think that the diesel generator was knocked out by the tsunami.

Another point that the Diet panel differs from others is why engineers turned off an isolation condenser at reactor 1.

The IC is an emergency cooling system.

Shortly after the quake hit the plant, engineers used the IC to cool the reactor core and turned it on and off for three times.

The government panel's report said the engineers turned off the IC because they were trying to control the speed of the temperature drop inside the reactor no faster than 55 degrees per hour, which is stated in the manual for the IC.

But the Diet panel said the engineers told the panel that they wanted to see how the pressure level would change because they were concerned if the pressure was escaping from some cracks caused by the quake.

"It seems Tepco does not admit that the workers turned off the IC to check the leakage because it will bring up the unfavorable matter of the possibility of quake damage," said the Diet panel, adding that it is also conceivable that the pipeline for the IC might have been damaged by the quake.

The Diet panel asked Tepco if it could send investigators inside the reactor 1 building to view the quake damage as much as possible.

But Tepco declined because the utility did not want its employees to be exposed with more radiation more than was necessary.

## Tunnel under Shika Plant

### **Tunnel eyed to probe fault at nuke plant**

<http://www.japantimes.co.jp/text/nn20120727a1.html>

Hokuriku Electric Power Co. plans to tunnel under the reactor 1 building at its Shika nuclear power plant in Ishikawa Prefecture to investigate a suspected active fault.

The utility submitted the plan to the Nuclear Industry and Safety Agency Wednesday. If experts give their approval at a hearing Tuesday, the company will begin boring this autumn. A final report is expected around January.

After re-examining documents submitted at the time of the plant's construction, the industry ministry's agency noted the S-1 fault under the southwestern part of the reactor 1 building may have been active in the late Pleistocene Epoch, 120,000-130,000 years ago, or later.

Under guidelines for evaluating the seismic resistance of nuclear plant designs, the fault could be deemed active, so NISA ordered the utility to check it again.

According to the plan, **Hokuriku Electric will bore a vertical hole nearly 2 meters in diameter to a depth of 40 meters alongside the reactor building, then a horizontal 50-meter-long tunnel until just under the building.**

**The company will check the S-1 fault directly and conduct boring surveys at the nuclear plant's site. It will also examine faults around the plant site that could move with the S-1 fault.**

On Wednesday, Kansai Electric Power Co. submitted a plan to study the F-6 fault under its Oi nuclear power plant in Fukui Prefecture. Kepco said it will draw up a final report by year's end.

Safety specifications of nuclear plants have long been questioned in quake-prone Japan. Among other things, the Fukushima nuclear crisis has highlighted safety concerns of those living around nuclear plants.

In a fresh development adding to local worries, **Chubu Electric Power Co. said Wednesday that many parts of reactor 5 at its Hamaoka nuclear power station in Shizuoka Prefecture have been confirmed corroded.**

The corrosion was apparently caused by the seawater that was found to have flowed into the reactor in May last year during work to halt the plant, Chubu Electric told a meeting with experts hosted by the NISA.

In announcing the interim results of its probe, Chubu Electric said corrosion affects the equipment that raises and lowers the control rods, which moderate the chain reaction in the core.

Work to halt the plant, which is in Omaezaki, Shizuoka Prefecture, began on orders from then Prime Minister Naoto Kan amid warnings that the poorly protected site could suffer the same quake-tsunami double-punch that knocked out Tokyo Electric Power Co.'s Fukushima No. 1 power plant in March 2011.

Some 400 tons of seawater are believed to have flowed into the reactor because 43 narrow tubes in a steam condenser were broken, and 5 tons of the total apparently reached the pressure vessel.

In addition, tubes in a different condenser have been deformed, apparently because of corrosion, the firm said.

Chubu Electric will carry out the probes until December before announcing full details. **The industry ministry's agency said it will take years before it can tell prospects for the reactor.**

July 31, 2012

## IAEA inspects Onagawa nuke plant

### Team to assess quake impact, how workers got facility shut down

Kyodo

<http://www.japantimes.co.jp/text/nn20120731a1.html>

ONAGAWA, Miyagi Pref. — The International Atomic Energy Agency started an inspection Monday in Miyagi Prefecture of the Onagawa nuclear plant, which was relatively undamaged by the massive earthquake and tsunami that hit the area in March last year.

A 20-member delegation led by Sujit Samaddar, head of the IAEA's International Seismic Safety Center, will check on damage to facilities and equipment at the Tohoku Electric Power Co. plant, whose three reactors automatically shut down when the disaster struck.

During its inspection through Aug. 11, the IAEA team will also analyze the plant's operational data and interview workers about how they stabilized the reactors so the agency can share its findings with member countries and help them compile safety measures.



The IAEA has already conducted on-site investigations at Tokyo Electric Power Co.'s crisis-hit Fukushima No. 1 and nearby Fukushima No. 2 plants in Fukushima Prefecture and on Japan Atomic Power Co.'s Tokai No. 2 plant in Ibaraki Prefecture since the March 2011 disaster.

While the IAEA's inspections have focused on nuclear power plants in eastern regions, the west also poses several reasons for concern. The experimental Monju prototype fast-breeder reactor in Tsuruga, Fukui Prefecture, is one of them.

Monju's operator, Japan Atomic Energy Agency, said **an alarm early Monday indicated that sodium coolant was leaking**. No leak or environmental contamination was detected, it said.

The Monju project started as part of the government program to establish a perpetual nuclear fuel cycle, in which spent fuel from power plants is reprocessed for use as plutonium-uranium mixed-oxide fuel, or MOX.

But the program was hobbled by problems. Monju has not effectively been operational since it was damaged by a sodium coolant leak and fire in 1995, after which the operator tried to cover up the damage.

The government has been considering four options on Monju's fate — ranging from decommissioning to going ahead with the fuel cycle program.

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same article in the Mainichi except that it is missing some information:

### **IAEA team starts inspection of Onagawa nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20120730p2g00m0dm077000c.html>

ONAGAWA (Kyodo) -- The International Atomic Energy Agency on Monday started an inspection of the Onagawa nuclear power plant in Miyagi Prefecture, which was relatively undamaged by the massive earthquake and tsunami that hit the area in March last year.

A 20-member delegation led by Sujit Samaddar, head of the IAEA's International Seismic Safety Center, will check the damage to facilities and equipment at Tohoku Electric Power Co. plant, whose three reactors automatically shut down when the disaster struck.

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The IAEA has conducted on-site investigations at Tokyo Electric Power Co.'s crisis-hit Fukushima Daiichi and nearby Fukushima Daini nuclear power plants in Fukushima Prefecture and Japan Atomic Power Co.'s Tokai Daini plant in Ibaraki Prefecture since the March 2011 disaster.

August 2, 2012

## Oi reactors will be stopped if active fault is found

### **Tanaka urges caution on restarts / Nominee for new nuclear regulator says idled reactors need careful study**

Jiji Press

<http://www.yomiuri.co.jp/dy/national/T120801005901.htm>

Shunichi Tanaka, nominated to head the country's new nuclear regulatory commission, said Wednesday that decisions on the restart of nuclear reactors require careful examination.

Tanaka, former acting chairman of the government's Atomic Energy Commission, was summoned to a hearing at the Diet where he put forward his opinions ahead of an expected parliamentary vote on his appointment.

Regarding any decision about restarting an idled nuclear reactor, Tanaka told the House of Representatives Committee on Rules and Administration, "The new regulator needs to carefully verify and assess it, including the criteria for the decision."

Tanaka is originally from Fukushima and serves as an adviser on decontamination in Fukushima Prefecture, which bore the brunt of the crisis at the Fukushima No. 1 nuclear power plant. "Since the accident, I have come into contact with many people in Fukushima and seen their suffering," he said.

"This led me to believe that I should devote myself to establishing safety regulations that are convincing to the Japanese public," he said.

Some lawmakers have voiced opposition to Tanaka's appointment, saying he has been part of the "nuclear power village" that includes industry officials, politicians and academics with vested interests in promoting nuclear energy.

Tanaka refuted this criticism, saying, "I will not deny my background, but ensuring transparency in the making of regulations will enable me to draw a line with power suppliers."

Regarding the restart of nuclear reactors, he pointed out that, in the past, once a safety decision was made there were no follow-up reviews. "But I will stick to the stance of reviewing safety assessments on a daily basis as sciences and technologies are advancing," he said.

In line with the government's safety declaration, two reactors at Kansai Electric Power Co.'s Oi nuclear power plant in Fukui Prefecture were restarted in July. But it is suspected that an active fault lies under the plant site.

"The reactors will definitely be suspended if new research confirms there is an active fault," Tanaka said.

Tanaka defended the rule requiring nuclear reactors to be decommissioned 40 years after they start operating.

"It is a necessary system to secure the safety of old reactors. While the rule won't be applied automatically, it should serve as a very tough barrier" to keeping such reactors active, he said, clarifying that the safety assessments of aged reactors will be stringent.

Tanaka, 67, joined the Japan Atomic Energy Research Institute, which is now the Japan Atomic Energy Agency, in 1967 and later became its vice president.

### **Oi reactors will be idled if fault under them is active, new nuclear safety chief warns**

Kyodo

<http://www.japantimes.co.jp/text/nn20120802a4.html>

The man nominated to head the new atomic regulatory authority said Wednesday he expects the two reactors at the Oi nuclear plant in Fukui Prefecture to halt operations should there be any active fault found underneath them.

Shunichi Tanaka, former vice chairman of the Japan Atomic Energy Commission, made the remark about reactors 3 and 4 of the Kansai Electric Power Co. plant after they were restarted last month despite public safety concerns nationwide.

Before the two Oi reactor restarts, all 50 remaining workable commercial reactors nationwide had eventually shut down because of a stricter inspection regimen initiated amid the triple-meltdown disaster at the Fukushima No. 1 power plant and the strong public attitude against atomic power.

"If there is an active fault, we'll naturally have (the reactors) stopped," Tanaka said during a Diet session, while being questioned by members of the Lower House Steering Committee. His appointment must be confirmed by both Diet chambers.

The Nuclear and Industrial Safety Agency in July told Kepco to reinvestigate whether an active fault exists beneath the Oi plant following safety experts' warnings about such risks.

Tanaka, an expert in radiation physics, vowed the new regulatory body will be more involved in investigating whether there is a fault under the Oi plant and not simply rely on utilities to probe the matter.

The government hopes to launch the independent new regulatory authority by early September to enforce tougher rules for nuclear reactor operations. The new body will replace NISA, which faced withering criticism when the Fukushima No. 1 nuclear plant suffered three meltdowns in March 2011.

NISA has been criticized for lacking teeth because it is under the umbrella of the Ministry of Economy, Trade and Industry, which promoted nuclear power.

Tanaka, who hails from the city of Fukushima, also told the committee that standards for the restart of reactors need to be reassessed, as the existing regime may be insufficient when taking into account technical issues.

Tanaka said that given his background, he cannot deny being considered close to parties with vested interests in promoting nuclear power.

He has been criticized for being on the pronuclear power side, having been part of the Japan Atomic Energy Commission, a key panel involved in setting nuclear policy.

The government nonetheless nominated Tanaka as the new agency's first chief partly because of his work cleaning up radiation-contaminated soil from the Fukushima crisis.

Tanaka also said he is committed to upholding the government policy to basically limit the operation of nuclear reactors to 40 years.

"This system is needed to ensure the safety of old power plants," he told the Diet session. "We should strictly check nuclear reactors and take the stance of not allowing those older than 40 years to operate." He said Wednesday his Fukushima roots could have a significant impact if he is appointed.

"You will have to excuse me because I may impose very strict regulations," he said.

Tanaka has been an adviser for decontamination work in the city of Date and village of Iitate.

Four others to fill key posts in the new regulatory authority also need Diet approval. They are Kenzo Oshima, a former ambassador to the U.N.; Kunihiro Shimazaki, head of the Coordinating Committee for Earthquake Prediction; Kayoko Nakamura of the Japan Radioisotope Association; and Toyoshi Fuketa of the Japan Atomic Energy Agency.

August 10, 2012

## More studies for Monju and Mihama plants

### Experts want survey for 2 additional plants

[http://www3.nhk.or.jp/daily/english/20120810\\_33.html](http://www3.nhk.or.jp/daily/english/20120810_33.html)

Japanese experts say 2 additional nuclear power plants need to be re-examined for possible underground rifts near the facilities.

A panel of experts from the Nuclear and Industrial Safety Agency under the industry ministry is reviewing the safety of nuclear power plants nationwide.

Experts have said that power companies should reassess underground fissures below the power plants to determine whether or not they are active faults.

Surveys have already begun at 4 facilities, including Ohi in Fukui Prefecture. The nuclear plant resumed operation last month.

On Friday photos of underground cracks at other nuclear plants were presented.

The images were taken when plant operators surveyed the sites before they applied for permission to build the plants.

The experts said **further studies are needed for the Monju and Mihama plants in Fukui Prefecture**. They cited a lack of topographical surveys around the sites.

As for the Ohi plant, some experts stressed the need to expand the scope of the ongoing survey.

The agency wants to complete the review by the end of this month, but it may order additional surveys to examine possible active faults.

The government's quake-proof guidelines for nuclear plants do not allow important nuclear facilities to

be built directly above active faults. If cracks are found to be active the utilities may be barred from operating the reactors.

No active faults apparently under Sendai, Genkai, Ikata, Tokai and Onagawa plants

August 11, 2012

### **Monju, Mihama nuke plant sites must be checked for active faults: panel**

<http://mainichi.jp/english/english/newsselect/news/20120811p2a00m0na009000c.html>

An expert panel to the Nuclear and Industrial Safety Agency (NISA) has demanded that the sites of the Monju prototype fast-breeder reactor and the Mihama nuclear plant in Fukui Prefecture be checked for active fault lines.

The move comes as part of NISA's survey of nuclear power plants across the country for active faults beneath the facilities. Following a call by the expert panel on Aug. 10, NISA is set to consider whether to order such on-site surveys for the Monju reactor run by the Japan Atomic Energy Agency (JAEA), and the Mihama nuclear plant operated by Kansai Electric Power Co.

An active fault line called the Shiraki-Nyu fault runs some 500 meters west of the Monju reactor and about 1 kilometer east of the Mihama reactors. Experts have previously pointed to the possibility that the crush zones -- areas of rock composed of stone fragments produced by seismic activity -- on the nuclear complexes' premises could shift in conjunction with the fault. If these crush zones have moved within the past 120,000 to 130,000 years, they are recognized as active, but JAEA and Kansai Electric have denied there have been any shifts in that timeframe.

Experts have called for on-site investigations citing lack of evidence in the operators' assertions and a need for a forum for debate while examining the actual sites.

Experts have also pointed to insufficient grounds for declaring Kansai Electric's Takahama nuclear plant in Fukui Prefecture safe, but NISA is mulling its response as there is no active fault running nearby.

The panel reviewed 10 additional nuclear plants operated by seven power companies on Aug. 10, completing the review of all 18 nuclear facilities across the country.

While NISA denied there are active faults running under Chugoku Electric Power Co.'s Shimane nuclear plant in Shimane Prefecture and Chubu Electric Power Co.'s Hamaoka nuclear plant in Shizuoka Prefecture, the agency said, "There is a need to examine the possibility that the earth (under those facilities) could shift when earthquakes occur in distant areas."

NISA will ask the operators of the two facilities to examine to what degree the ground would shift and what effect that would have.

Meanwhile, NISA approved reports filed by the operators of five nuclear plants stating there are "no active faults" running beneath them: the Genkai nuclear plant in Saga Prefecture and the Sendai nuclear plant in Kagoshima Prefecture, both operated by Kyushu Electric Power Co.; Shikoku Electric Power Co.'s Ikata nuclear plant in Ehime Prefecture; Japan Atomic Power Co.'s Tokai No. 2 Power Station in Ibaraki Prefecture; and Tohoku Electric Power Co.'s Onagawa nuclear plant in Miyagi Prefecture.

NISA's review of potential active faults underneath nuclear plants started in July, after suspicions emerged that Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture may be sitting on an active fault line. In its previous meetings, the expert panel has pointed out that Hokuriku Electric Power Co.'s Shika nuclear plant in Ishikawa Prefecture is very likely located on top of an active fault line.

Since the central government does not allow nuclear reactor buildings to be built on active faults, reactors may face decommissioning if such faults are confirmed beneath them.

## "Remarkably undamaged"

### **IAEA: Nuke plant near Fukushima largely undamaged**

<http://mainichi.jp/english/english/newsselect/news/20120811p2g00m0dm040000c.html>

TOKYO (AP) -- The Japanese nuclear power plant that was closest to the epicenter of last year's earthquake suffered more ground shaking than Fukushima but was largely undamaged because it was designed with enough safety margins, nuclear inspectors said Friday.

The Onagawa plant in northern Japan recorded temblors that exceeded its design capacity and the basement of one of its reactor buildings flooded. But the plant maintained its cooling capacity, its reactors shut down without damage to their cores and there were no signs of major damage to crucial safety systems.

The U.N. nuclear watchdog's inspectors found the Onagawa plant managed to avoid a catastrophe like Fukushima because its safety systems "successful functioned," said Sujit Samaddar, who led the 19-member International Atomic Energy Agency mission.

"With the earthquake of this magnitude, we would have expected the plant to have more damages, and that was not the case," Samaddar said. "This indicated there were significant margins in the designs."

In contrast, the 9.0-magnitude earthquake on March 11, 2011, knocked out a power line at the Fukushima Dai-ichi plant and generated a large tsunami that flooded its emergency generators, destroying the plant's cooling systems. Catastrophic meltdowns occurred in three reactors, releasing radiation that has tainted the surrounding environment.

The plant has since stabilized but more than 100,000 people still can't go home due to radiation fears, while work to decommission the plant will take about 40 years. It was the world's worst atomic accident since Chernobyl.



A fisherman washes his fishing boat near the Onagawa nuclear power plant, seen at left, in Onagawa, Miyagi Prefecture, on July 31, 2012. (AP Photo/Koji Sasahara)

拡大写真



The Onagawa plant was about 70 kilometers (44 miles) from the quake's epicenter, while Fukushima Dai-ichi was nearly 180 kilometers (112 miles) from the epicenter. Onagawa is about 120 kilometers (74 miles) north of Fukushima Dai-ichi.

The tsunami was more than 13 meters (43 feet) high at both nuclear plants. Fukushima Dai-ichi's seawall was built to withstand a tsunami of up 5.7 meters (18.7 feet). Onagawa's seawall was nearly 14 meters (46 feet) high and survived the tsunami. It has since been extended to nearly 17 meters (56 feet) above sea level.

Investigations by the government, the parliament and private groups have found that Tokyo Electric Power Co. underestimated the earthquake and tsunami risks faced by its plant at Fukushima despite a history of quakes in the region. The investigations have also criticized TEPCO and government regulators, which have developed cozy relationships, for ignoring safety standards and recommendations, including those by IAEA and other groups.

The IAEA visit July 30-Aug. 9 visit was its first to the Onagawa plant since the disaster. The group inspected the plant and interviewed dozens of workers and officials to assess how its structure, systems and components responded to the quake and its violent shakings.

Samaddar said he hoped to make similar inspections at other plants in Japan to share information and improve safety at nuclear power across the world. No visits are scheduled yet and would only take place at Japan's invitation.

Five nuclear plants total suffered some level of damage from the earthquake and tsunami, but all but Fukushima Dai-ichi were shut down safely.

In May, the last of Japan's 50 working reactors were turned off as safety checks were carried out, but two are now back online and generating power. Despite public protests, the government is eager to restart reactors because of the ballooning cost of fuel imports to keep the power supply running.

### **IAEA only finds light damage at Onagawa**

<http://www.japantimes.co.jp/text/nn20120811a4.html>

By KAZUAKI NAGATA  
Staff writer

Although the Great East Japan Earthquake and tsunami wrecked the Fukushima No. 1 plant in Fukushima Prefecture, the younger Onagawa plant in neighboring Miyagi was "remarkably undamaged" by the violent temblor and tsunami and safely shut down, experts from the International Atomic Energy Agency said Friday.

Given a quake of this magnitude, "we would have expected the plant to have more damage, and that was not the case," Sujit Samaddar, who led the 19-member team, told reporters in Tokyo, wrapping up their two-week on-site probe.

From its visual investigation, the IAEA team did not find any signs that cooling pipes or other critical equipment were damaged or caused coolant loss at the 28-year-old plant, said Samaddar, who heads the IAEA International Seismic Safety Centre.

The IAEA team arrived last month to see how the magnitude 9.0 temblor on March 11, 2011, affected the Onagawa plant, which runs three reactors on the Pacific coast about 120 km north of the 40-year-old Fukushima plant.

Whether the quake itself damaged the pipes and cooling systems at Fukushima No. 1, which was swamped by tsunami and suffered three meltdowns, has been hotly debated since a Diet-appointed investigative panel suggested that possibility over denials by Tokyo Electric Power Co.

Samaddar stressed that while his team did not find any trace of such damage, its investigation didn't cover everything in great detail. He said the team only conducted visual checks — of samples of equipment — because time was limited.

Asked what the main differences are between Tepco's Fukushima plant and Tohoku Electric Co.'s Onagawa plant, Samaddar said various factors and data need to be scrutinized and that it will take time to find an answer.

The killer earthquake registered as a weak 6 on the Japanese seismic intensity scale to 7 at Onagawa, which saw tsunami reach about 13 meters high.

Samaddar said there was minor damage from the quake, including cracks in the turbine buildings, but that none of it would have led to a nuclear calamity like Fukushima.

The team investigated structural elements of the plant and the systems safeguarding the reactors, and held interviews with some of the engineers.

The data and experience collected from the investigation will be added to the IAEA's database to improve safety at nuclear power plants worldwide.

August 12, 2012

### **No active faults found under 5 N-plants**

<http://www.yomiuri.co.jp/dy/national/T120811003383.htm>

The Nuclear and Industrial Safety Agency has concluded five nuclear power plants have no active faults below their building sites.

NISA, the nuclear watchdog of the Economy, Trade and Industry Ministry, is looking into whether active faults exist below the sites of nuclear power plants nationwide. In a hearing of four experts held on Friday, the conclusion was reached that the five plants in question had no active faults below them, it said.

The five plants are: Kyushu Electric Power Co.'s Sendai plant in Kagoshima Prefecture and Genkai plant in Saga Prefecture; Shikoku Electric Power Co.'s Ikata plant in Ehime Prefecture; Japan Atomic Power Co.'s Tokai No. 2 plant in Ibaraki Prefecture; and Tohoku Electric Power Co.'s Onagawa plant in Miyagi Prefecture.

The experts examined whether faults below each plant's buildings could be subject to the following scenarios:

- Cause quakes just below nuclear reactors.
- Be pulled by active faults near the compounds and cause ground movement.
- Cause ground movement from an earthquake that occurs in a distant place.

Based on past excavation survey results and other data, the experts concluded the five plants' sites are not susceptible to any of the three possible scenarios.

Meanwhile, NISA requested additional research to draw conclusions on Kansai Electric Power Co.'s Mihama and Takahama plants and Japan Atomic Energy Agency's Monju fast-breeder reactor, all in Fukui

Prefecture, as it deemed the Mihama plant and Monju may fall into the second category and the Takahama plant into the third.

NISA has deemed Chubu Electric Power Co.'s Hamaoka plant in Shizuoka Prefecture and Chugoku Electric Power Co.'s Shimane plant in Shimane Prefecture fall into the third category.

August 17, 2012

## Another "safe" leak

### **Wastewater leaked at Oi nuclear plant, safety agency says no danger**

<http://mainichi.jp/english/english/newsselect/news/20120817p2g00m0dm032000c.html>

TSURUGA, Japan (Kyodo) -- Around two tons of alkaline wastewater leaked Thursday evening from the seawater desalination system at Kansai Electric Power Co.'s Oi nuclear power plant in Fukui Prefecture, the Nuclear and Industrial Safety Agency and the utility said Friday.

The water leak at the plant's Nos. 3 and 4 reactors has already stopped and has not affected the safety of the reactors and the surrounding environment, they said.

It is believed that the wastewater accumulated in a drainage tank and spilled out as its outflow into the sea was interrupted due to a malfunction in the measuring gauge of the tank, according to them. [does this mean the waste water goes directly into the sea as a rule ?? ]

The two reactors were restarted last month despite lingering public concerns over the nuclear safety in the wake of the disaster at the Fukushima Daiichi complex.

August 20, 2012

## New findings about faults near Japan Trench

## **Fault ruptures confirmed near Japan Trench**

[http://www3.nhk.or.jp/daily/english/20120820\\_14.html](http://www3.nhk.or.jp/daily/english/20120820_14.html)

Japanese scientists say they have found evidence of displacement of the tectonic plates caused by the March 11th earthquake last year.

A team from the Japan Agency for Marine-Earth Science and Technology conducted an acoustic wave study last year along the Japan Trench about 250 kilometers off the coast of Miyagi Prefecture. The study assessed the seabed structure to a depth of several kilometers.

The findings showed **at least 2 displacements near the trench axis where the Pacific plate begins to sink below the plate underneath northeastern Japan.**

The scientists say fault ruptures from the quake's epicenter located in the deep part of the plate boundary reached the seabed surface.

They say structural upheavals along the fault indicate big earthquakes have occurred repeatedly in the area.

A senior agency official says a detailed seabed survey is needed to uncover the mechanism of massive quakes and how often they occur.

August 23, 2012

## **Science Council of Japan on nuke disposal**

### **Scientists to call for review of nuclear disposal**

[http://www3.nhk.or.jp/daily/english/20120823\\_27.html](http://www3.nhk.or.jp/daily/english/20120823_27.html)

Japan's national scientists' organization is to propose a radical review of the government's plan for disposing of highly radioactive nuclear waste. The group says an initial plan to bury the waste more than 300 meters underground for tens of thousands of years is wrong for the country.

The Science Council of Japan is to present its proposal next week to the government's Atomic Energy Commission, which decides the country's nuclear policy.

The commission has been asking for advice on reviewing the initial plan, as it became stalled due to opposition from candidate sites.

In a copy of a draft proposal obtained by NHK, the council says the plan has been deadlocked over

fundamental issues, as the Fukushima nuclear accident has raised doubts about Japan's nuclear policy.

It says identifying a stable site in Japan to keep the waste for tens of thousands of years is quite difficult, as the country is prone to earthquakes and volcanic activity.

The council says the government should first **find temporary storage sites for decades to hundreds of years**. It says the government could use the time to develop technology for final disposal, and to build a national consensus on the issue.

An NHK correspondent says the proposal could start public debate as it could be seen as prolonging the disposal problem.

August 24, 2012

## "Rusty" water outside Hamaoka

### Rust found in Hamaoka nuclear reactor water

<http://mainichi.jp/english/english/newsselect/news/20120824p2a00m0na009000c.html>

High concentrations of rust have been found in the water in the Hamaoka nuclear plant's No. 5 reactor following a seawater inflow accident last year, plant operator Chubu Electric Power Co. has announced.

An estimated five metric tons of seawater gushed into the No. 5 reactor shortly after the plant was suspended for safety checks in May last year. Before the incident, the water sampled from around 10 of the reactor's fuel assemblies registered an iron rust concentration of about 62 parts per billion (ppb). More recent testing following the accident showed concentrations as high as 8,900 ppb -- about 14,000 times greater.

Chubu Electric, which has reported its findings to the Nuclear and Industrial Safety Agency (NISA), believes that the rust may have been carried in from the outside with the seawater. NISA, meanwhile, has stated that it will "examine whether the rust originated from inside the reactor and whether it would affect its operation."

Chubu Electric began withdrawing the No. 5 reactor fuel assemblies on Aug. 22 and expects to have all 872 assemblies out of the core by the end of the month. The utility will then check the interior for corrosion.

## Check those faults!

### **TEPCO to check for active faults beneath Kashiwazaki-Kariwa nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20120824p2a00m0na008000c.html>

Tokyo Electric Power Co. (TEPCO) will survey the earth beneath the Kashiwazaki-Kariwa nuclear power plant in Niigata Prefecture to check if two fault lines there are active, the utility announced on Aug. 23.

The two faults, labeled alpha and beta, run directly under the plant's No. 1 reactor. TEPCO had previously judged that they were inactive, and the central government accepted this conclusion after conducting its own examination.

However, as all of Japan's nuclear plants face renewed safety checks in the wake of the Fukushima No. 1 nuclear plant meltdowns, experts have called on TEPCO to conduct a detailed age assessment of the faults.

TEPCO decided to excavate the Kashiwazaki-Kariwa faults and date them by studying fossilized pollen deposits, among other telltale factors. The survey results will be released in February 2013.

In a 2006 government revision to anti-earthquake design inspection standards, it was decided that faults that had shifted in the past 120,000-130,000 years should be considered active. Before the change, only faults that had moved in the past 50,000 years were considered active.

TEPCO had until recently maintained that the alpha and beta faults under the Kashiwazaki-Kariwa plant hadn't moved for between 120,000 and 240,000 years, and were therefor inactive. Geological experts had, however, pointed out that the age estimation did not have a clear foundation, and called for a new survey.

August 25, 2012

### **NISA orders faults below Mihama, Monju reactors be reexamined**

<http://www.yomiuri.co.jp/dy/national/T120824004345.htm>

The Yomiuri Shimbun

The Nuclear and Industrial Safety Agency has decided to instruct two nuclear power plant operators to reexamine geological faults running underneath or near two nuclear facilities in Fukui Prefecture to assess whether they are active, the agency said Friday.

The faults in question are located underneath or near Kansai Electric Power Co.'s Mihama nuclear power plant and the Japan Atomic Energy Agency's Monju fast-breeder reactor.

Similar instructions have already been given to Japan Atomic Power Co.'s Tsuruga nuclear power plant in Fukui Prefecture and Hokuriku Electric Power Co.'s Shika nuclear power plant in Ishikawa Prefecture.

Restarting operations at any one of these facilities before a conclusion can be made from the detailed reexaminations, which will include boring surveys, would be difficult as it is possible active faults may be directly underneath key facilities such as reactor buildings, informed sources said.

The agency, which operates under the Economy, Trade and Industry Ministry, announced its decision at meeting held to hear experts' opinions on quake resistance at the nuclear plants.

The central government's criteria does not assume the existence of an active fault under important facilities, such as reactor buildings.

To be reexamined along the faults are so-called crush zones--a section of crushed rocks--near the two plants. The zone will not trigger a quake by itself, but could cause a slippage in the subsurface when pulled by a nearby active fault.

When the plant operators sought government permission to build the plants, the faults' existence was confirmed but they were considered inactive. As a result, they were judged to be safe.

However, the same type of fault was discovered to have moved during the Great East Japan Earthquake last year.

In light of this, the safety agency held an expert hearing in July, and designated the commercially operating nuclear plants and the Monju reactor for reevaluation based on documents submitted to the government when operators applied for building permission.

Regarding the faults near the Mihama plant and the Monju reactor, experts said they cannot say they are inactive with certainty and concluded that geological surveys should be conducted. An active fault is defined as one that has experienced movement within the last 130,000 years.



Like the reexaminations for the Tsuruga and Shika nuclear plants, for which excavation surveys have already been launched, **the upcoming evaluations will take more than six months**, the sources said.

Earlier, the safety agency instructed KEPCO's Oi nuclear power plant in Fukui Prefecture and Tohoku Electric Power Co.'s Higashidori power plant in Aomori Prefecture to reexamine geological faults running underneath the plants. However, neither fault is located directly underneath reactor buildings.

In the case of the Oi nuclear power plant, the safety agency determined it was "safe" early on. However, because documents submitted by KEPCO were later found to contain errors, the plant became subject to reexaminations.

### **More checks on faults ordered under Mihama, Monju atomic plants**

<http://mainichi.jp/english/english/newsselect/news/20120825p2g00m0dm002000c.html>

TOKYO (Kyodo) -- The Japanese government's nuclear safety agency ordered Kansai Electric Power Co. and Japan Atomic Energy Agency on Friday to reinvestigate faults under the Mihama nuclear power plant and the Monju prototype fast breeder reactor, respectively.

The Nuclear and Industrial Safety Agency called for onsite investigations at the facilities, both in Fukui Prefecture, central Japan, as there is a possibility a nearby active fault may set off a chain reaction in moving fault fracture zones, or soft earth layers, running under the facilities.

Additional checks have already been under way for faults running under Tohoku Electric Power Co.'s Higashidori nuclear power plant in Aomori Prefecture, Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture, Japan Atomic Power Co.'s Tsuruga plant and Kansai Electric's Oi plant in Fukui.

Tokyo Electric Power Co. reported at a meeting with the nuclear safety agency the same day its plan to conduct a boring survey at the premises of its Kashiwazaki-Kariwa plant in Niigata Prefecture to determine when faults under the facility were active.

August 27, 2012

### **Preventive Measures Alone Cannot Secure Nuclear Power Plant Safety: Risk Management and Crisis Management of Nuclear Power Plants**

<http://www.yomiuri.co.jp/adv/chuo/dy/opinion/20120827.htm>

Katsuya Sato

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Areas of Specialization: Risk Management and Crisis Management

Read in Japanese

#### *Safety comes with conditions attached*

Most people probably think risk exists when something is not safe. But actually, risk exists because something is safe. People feel they can relax if they think something is safe, whereas in fact there are always conditions attached to safety. A car is only safe on the assumption that its brakes work. The possibility of its brakes ceasing to work is a risk. Risk means the possibility of stopping functioning of the preconditions for safety. A car with damaged brakes is dangerous so we wouldn't drive it in the first place. Risk exists as we act feeling safe.

There have been too many cases of the lack of risk being mistaken for safety. Such a misconception has led to the safety myth that "being safe means having no risk." The result was TEPCO's "nuclear power plant accident beyond assumptions." Rather, it is important to try to secure safety as much as possible by preventing the occurrence of risk (risk management.)

#### *Risk management alone cannot secure safety*

If the reception staff at a hotel told you, "This hotel is a fireproofed building. We take all possible fire prevention measures so there are no emergency exits or sprinklers installed. You're in good hands so enjoy your stay," would you feel relaxed about staying there? However fireproofed the building was, wouldn't you worry about there being no emergency exits or sprinklers?

In such a case, the fireproofed building is a fire prevention measure, and therefore a form of risk management. Emergency exits and sprinklers are a form of crisis management, measures for preventing the spread of damage if a fire breaks out. I think you would choose a hotel with emergency exits and sprinklers rather than one that relied solely on fire prevention measures, however thorough such measure were. Fire risk management alone is not enough, and safety measures should also include crisis management in case a fire breaks out.

#### *Safety measures of nuclear power plants*

Nuclear power plants implement safety measures based on the concept of multiple safeguards. While Japan works on the principle of three levels of safeguards, international safety standards such as those of the IAEA (International Atomic Energy Agency) incorporate five levels of safeguards.

To prevent severe accidents such as the meltdown of a nuclear reactor, Japanese standards set out risk management to be conducted at different levels: fail safe systems, inter lock systems, and backup systems at level one (preventing an occurrence of a malfunction); reactor trip etc. at level two (preventing the spread of a malfunction); installation of emergency core cooling systems, reactor containment facilities etc. at level three (mitigating the effects in the event of an accident.) However, these standards do not cover crisis management in the event of a severe accident.

In addition to such risk management measures for preventing severe accidents, however, international safety standards such as those of the IAEA also govern crisis management at nuclear reactors in case a severe accident occurs (level four) and crisis management in the areas surrounding a nuclear power station where a severe accident has occurred, such as emergency evacuation (level five).

The debate about safety checks when restarting Oi Nuclear Power Plant seems to rest solely on the effectiveness of measures for preventing a severe accident (risk management), that is, whether an event like the Fukushima nuclear disaster can definitely be prevented. Japan's nuclear safety standards are still nowhere near international safety standards so long as there is insufficient specific verification between our power companies, related local governments, and national government about the effectiveness of the power companies' response measures to a nuclear reactor which is in meltdown (level four) and the effectiveness of securing evacuation means for neighboring residents (level five), as covered by international safety standards.

*Safety should be judged by crisis management*

As shown in the example of a hotel without emergency exits or sprinklers, the adequacy of safety measures should be judged by whether there is adequate crisis management for when risk becomes a reality.

Katsuya Sato

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Areas of Specialization: Risk Management and Crisis Management

Born in Tokyo in 1942. He is a Doctor of Science, having graduated from the Faculty of Science, Tohoku University and obtained an MSc and PhD from the same university. He worked at the Environment Agency and the Geo-Environmental Protection Center before taking up his current position in April 2005. His areas of specialization are risk management and crisis management and he argues strongly about the appropriate meaning of risk communication. His major publications include:

- *New Methods in Environmental Risk Management* [*Kankyo risuku kanri no atarashii shuho*], co-translator

and commentator, The Chemical Daily, 1998

- "Environmental Assessment and Risk Management [Kankyo asesumento to risuku kanri]", *Dictionary of Risk Studies [Risukugaku jiten]*, TBS Britannica, 2000

- "Before Starting Risk Communication—Basic Concepts of Risk Communication [Risuku komyunikeshon o hajimeru mae ni—Risukomi no kihongainen]," *Journal of Resources and Environment* Vol. 44, No.15, 2008

August 29, 2012

## **Ikata and Shika plants no problem**

### **Utilities say 2 nuke plants can withstand quakes triggered by multiple active faults**

<http://mainichi.jp/english/english/newsselect/news/20120829p2a00m0na006000c.html>

Shikoku Electric Power Co. and Hokuriku Electric Power Co. told the government's Nuclear and Industrial Safety Agency (NISA) on Aug. 28 that the Ikata Nuclear Power Plant in Ehime Prefecture and the Shika Nuclear Power Plant in Ishikawa Prefecture can withstand earthquakes triggered by multiple active faults moving closely together.

The two power companies reported to a NISA expert panel that nuclear reactors and other key facilities at the two nuclear power stations would have no safety problems even if they are struck by earthquakes triggered by multiple active faults moving together. There was no objection to their arguments at the meeting, and therefore NISA is expected to endorse the reports.

At the expert panel meeting, Chugoku Electric Power Co. and Hokkaido Electric Power Co. also reported that the Shimane Nuclear Power Plant in Shimane Prefecture and the Tomari Nuclear Power Plant in Hokkaido would have "no problems" if they were struck by earthquakes under similar conditions. NISA is set to discuss whether their reports are credible.

Meanwhile, Tokyo Electric Power Co. (TEPCO) is in the process of evaluating the possible effects of active faults on the Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture.

At the five nuclear power stations, tremors that can be triggered by active faults near the premises of the nuclear facilities moving together exceeded assumed maximum levels, or the standard earthquake ground motion, in some cycles of simulated ground motions. Therefore, NISA instructed the utilities verbally to assess the possible effects of active faults on key facilities at the nuclear power stations.

August 30, 2012

## Is NISA trying to avoid decommissioning?

### Nuke plants on faults may get OK to stay online

Kyodo

<http://www.japantimes.co.jp/text/nn20120830a2.html>

The government may allow nuclear plants to keep operating even if faults are found beneath them, **provided that ground displacements are deemed unlikely to affect their buildings.**

The Nuclear and Industrial Safety Agency plans new safety rules that OK operations even at plants under which faults are found, despite its current view that reactors must not be built above them, sources said Tuesday.

The agency will soon craft the new criteria for the evaluation of faults beneath nuclear plants based on expert opinions. The watchdog will then hand them over to its successor regulatory authority, which will begin operations in September.

These last-minute efforts by NISA to set new rules have drawn criticism from experts who suspect it is creating loopholes to ensure the safety of nuclear plants. **The agency has admitted that measures to properly assess ground displacements have not yet been established.**

Specifically, NISA plans to classify faults under nuclear reactors into three types: active faults that could trigger quakes, auxiliary faults that are structurally connected to active faults, and faults deemed weaker than the other two. When faults are determined to be of the last type, the agency will forecast the degree of ground displacements expected in the event of nearby quakes, and then assess their impact on reactor buildings.

When faults are classified as the first or second type, the operation of nuclear plants in that area will be banned.

Mitsuhsa Watanabe, a professor of geomorphology at Toyo University, said **it would be hard to distinguish auxiliary faults from rifts with weaker power and both types could cause displacements. "The agency appears to be contemplating how to avoid the decommissioning of reactors just before its disbandment,"** he said.

September 1, 2012

## **Safety more important than before - "A strong message to judges"**

### **Judges hold rethink on nuke safety**

Kyodo

<http://www.japantimes.co.jp/text/nn20120901a2.html>

The Fukushima nuclear crisis has judges nationwide calling for in-depth safety analyses in legal cases involving atomic plants, it was learned Thursday.

According to internal documents obtained by an information disclosure request, five of seven judges who submitted proposals at a study meeting on nuclear issues hosted by the Supreme Court **pointed to the need to examine safety more thoroughly than before.** The meeting was held from Jan. 26 to 27 and was attended by 35 judges.

Courts have routinely rejected appeals made in cases involving nuclear plants, but **now they are debating whether the government itself is taking appropriate safety procedures.**

The Supreme Court explained that the purpose of the study meeting was to enhance the knowledge and skills of the judges and that the discussion did not have a binding effect on each judge's decisions.

But lawyer Hiroyuki Kawai, who has represented clients involved in lawsuits against nuclear plants, said the fact that the Supreme Court held a meeting to study the issue is sending **a strong message to judges.**

Kawai said. "The opinions of the judges clearly show that their reliance on regulators and bureaucrats is losing ground."

## IAEA : Improve safety!

### **Nuclear meeting calls for more effort for safety**

[http://www3.nhk.or.jp/daily/english/20120901\\_07.html](http://www3.nhk.or.jp/daily/english/20120901_07.html)

An international conference on nuclear safety has ended with an appeal for countries to do more to improve safety of their nuclear power plants, based on lessons from the Fukushima disaster.

The 5-day meeting at International Atomic Energy Agency headquarters in Vienna adopted a president's summary on Friday. The countries are party to the Convention on Nuclear Safety.

The summary calls for countries to enhance independence of their nuclear regulators through such measures as legislation.

The summary says the Japanese government's Nuclear and Industrial Safety Agency did not work adequately during the Fukushima disaster.

The summary also urges countries to further incorporate IAEA safety standards into their own safety measures on nuclear plants.

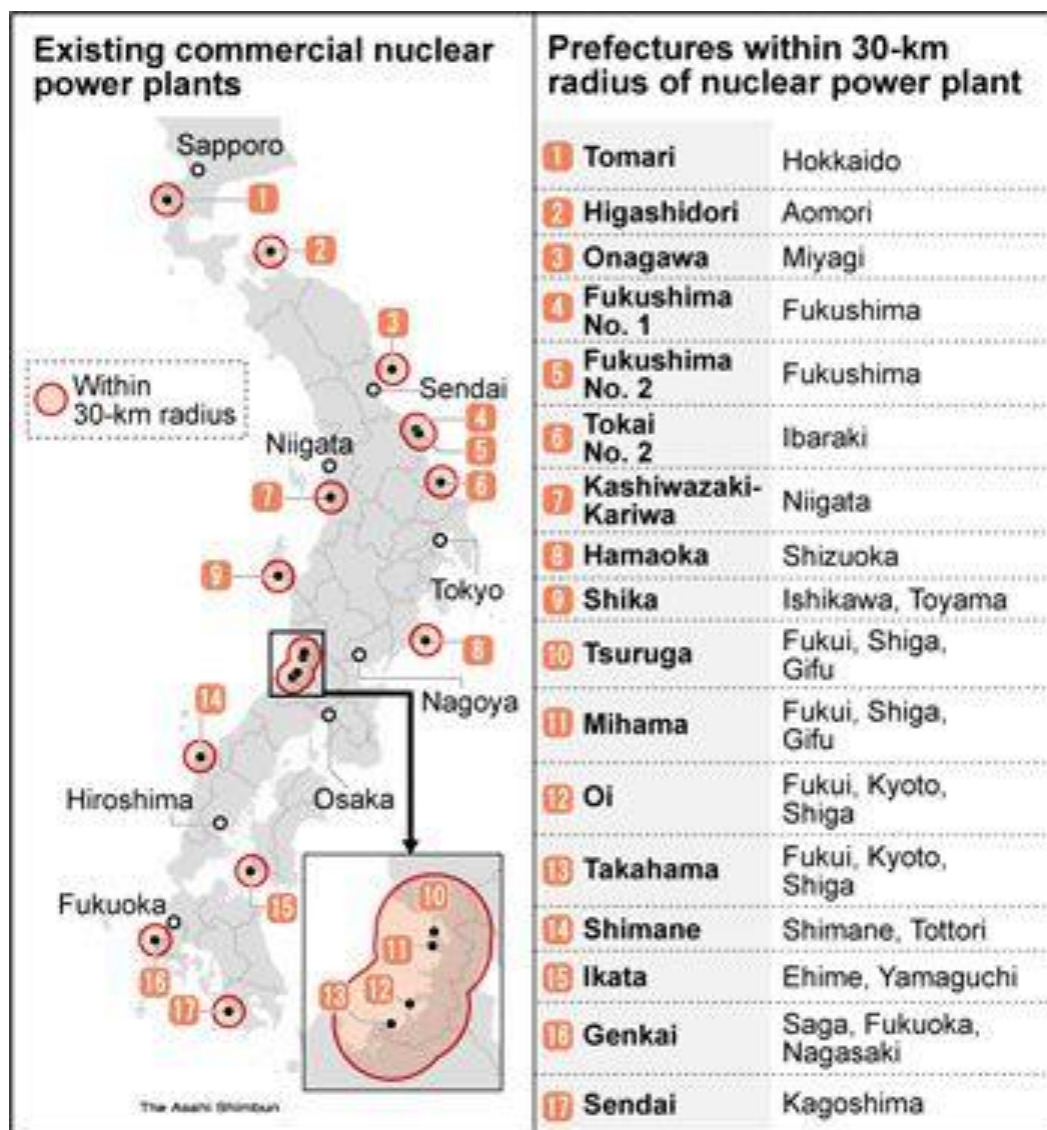
The signatory countries are to review the results of their efforts after the conference at a meeting to be held in 2014.

September 7, 2012

## "Sweeping new measures" in preparation for nuclear accidents

### **Government rewrites rulebook for nuclear disaster**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201209070078>



The central government is drastically overhauling preparations for nuclear accidents, mandating **sweeping new measures including requiring power plants to have more remote-controlled rescue tools and defining a broader evacuation zone for local residents.**

Local authorities will be required to plan to evacuate residents over a 30-kilometer radius, expanded from the current 8-10 km, which in the case of one nuclear plant would require commandeering enough vehicles to move almost a million people. Meanwhile power-plant operators will be ordered to prepare rescue crews and logistics bases that can operate even in a radiation release.

The measures were detailed Sept. 6 in an overhauled Basic Disaster Management Plan, produced by the Central Disaster Management Council. The plan calls on plant operators, and central and local



governments to rewrite their crisis manuals, and is the latest document to illustrate a fundamental rethink under way in the nation's disaster policy.

Several official inquiries and independent investigations by journalists into the March 2011 meltdowns and radiation release at the Fukushima No. 1 nuclear power plant faulted the operator, regulator and central government alike, alleging the early rescue effort suffered from insufficient equipment and the evacuation of residents from poor planning.

Until the magnitude-9.0 earthquake and tsunami, the central government and electric power companies never considered the possibility of a severe accident at a nuclear power plant because of a mistaken belief in the infallibility of existing safety measures. The new plan considers the impact of another complex disaster involving an earthquake, tsunami and nuclear accident.

The council has no power to enforce the changes, but the document will form the basis of new standards mandated by the new nuclear regulatory agency, which is due to be inaugurated in the near future.

Local governments within a 30-km radius of nuclear plants will need to compile new evacuation plans, perhaps coordinating with neighboring prefectures in order to secure temporary homes for evacuees. Local governments will be encouraged to sign support agreements to help each other in that event. The central government will be expected to help local authorities reach such agreements.

The new plan states clearly for the first time that the new nuclear regulatory agency should swiftly release radiation data, which it would acquire from the science ministry's System for Prediction of Environmental Emergency Dose Information, or SPEEDI.

That data was not immediately released after last year's Fukushima nuclear accident, giving evacuees little help in deciding where to move to.

At the same time, SPEEDI will in the future be used differently, to obtain a clearer picture of an accident as it happens.

In the event of an accident, all residents within 5 km would immediately evacuate, without waiting for data from SPEEDI.

Other changes in the basic plan arose from failure by the prime minister's office and the Nuclear and Industrial Safety Agency to share information as the Fukushima disaster unfolded.

Under the new plan, once an accident occurs, the chairman of the nuclear regulatory agency and other officials will immediately go to the prime minister's office to form a crisis secretariat that then serves as a clearinghouse for information.

Electric power companies will be asked to construct an emergency response center at each nuclear plant, as well as a support base in a location where on-site workers can receive deliveries of equipment and materials from outside.

The utilities will also be asked to form an accident response center at company headquarters and give free access to nuclear regulatory agency staff, who would then coordinate communications with other agencies and monitor the company's activity, such as its compliance with regulatory agency orders.

Plant operators will also be asked to install heavy machinery that can be operated by remote control. They will also need to form nuclear-accident rescue squads that can function regardless of the high radiation levels that make such work difficult and dangerous.

The companies will also have to conduct training exercises to deal with possible major accidents and will be required to report on the exercise results. If those results show failings, the nuclear regulatory agency will be able to order improvements.

Meanwhile, the utilities' share of the burden will be matched, if not exceeded, by what local governments will need to do.

For example, the Ibaraki prefectural government will need to prepare to evacuate close to 1 million residents in the event of an accident at the Tokai No. 2 nuclear plant, operated by Japan Atomic Power Co.

The new 30-km radius around that plant will include 14 municipalities, with a total population of about 940,000. One of the cities is Mito, the prefectural capital, which lies about 20 km from the plant. In a severe accident at the Tokai No. 2 plant, the prefectural government office itself could be rendered unusable.

Prefectural government officials plan to use cars and buses to evacuate residents. But even if they could round up all 7,000 or so buses in the prefecture, those vehicles would be able to transport only 240,000 people at a time.

A prefectural government official in charge of safety measures for nuclear accidents said more information is needed. The central government, the official said, should issue technical guidelines on what kind of accident requires which evacuation.

Other prefectures will need to depend upon the goodwill of neighboring prefectures to help house their evacuees.

Within a 30-km radius of the Shimane nuclear plant lie four cities, with a total population of about 396,000. However, across Shimane Prefecture, municipalities can house only 160,000 evacuees at most.

For that reason, the Shimane prefectural government asked four nearby prefectures to accept evacuees in the event of an accident. It obtained consent from Tottori, Hiroshima and Okayama prefectural governments, and in February came up with a list of 71 municipalities that could host evacuees.

September 10, 2012

## TEPCO's expert panel to "regain public confidence"

### TEPCO to set up expert panel to reform nuclear operations

<http://mainichi.jp/english/english/newsselect/news/20120910p2g00m0dm023000c.html>

TOKYO (Kyodo) -- Tokyo Electric Power Co. will set up an expert panel **to examine the nuclear crisis at its Fukushima Daiichi power plant and enhance the security of its nuclear plants**, sources close to the issue said Sunday.

The panel will consist of key domestic and foreign figures, including former U.S. Nuclear Regulatory Commission Chairman Dale Klein and management consultant Kenichi Omae, according to the sources.

By choosing the members from outside the so-called "nuclear power village," a close-knit community of academics, bureaucrats and utility officials with vested interests in promoting atomic power, the utility apparently aims to **regain public confidence before its planned resumption of the Kashiwazaki-Kariwa nuclear power plant** in Niigata Prefecture next April.

Based on the panel's debates, Tokyo Electric will have its own taskforce of around 30 members, including President Naomi Hirose, compile proposals for reform of the company's nuclear operations.

On the resumption of the Kashiwazaki-Kariwa plant, Niigata Gov. Hirohiko Izumida has said it should be discussed after the cause of the Fukushima nuclear accident is determined.

In the face of the negative stance of the governor, Hirose expressed readiness last month to set up a permanent in-house organization to examine the accident and promote security measures.

September 11, 2012

## Finally!

### New nuclear watchdog launches Sep 19th

[http://www3.nhk.or.jp/daily/english/20120911\\_14.html](http://www3.nhk.or.jp/daily/english/20120911_14.html)

Japan's government decided on Tuesday to formally launch its new nuclear regulator on September 19th. The creation of the nuclear watchdog comes more than 18 months after the disaster at the Fukushima Daiichi plant.

The new nuclear regulatory commission will be **largely independent of the government** and replaces the current Nuclear and Industrial Safety Agency. The agency was controlled by the Ministry of Economy, Trade and Industry, which has promoted nuclear power, and was criticized for a lack of independence following the disaster.

The new commission will oversee a new nuclear regulatory agency consisting of some 500 personnel.

Prime Minister Yoshihiko Noda plans to appoint the 5 members of the commission upon its launch.

Nuclear Crisis Minister Goshi Hosono said **the people of Japan will strictly monitor the performance of the new nuclear watchdog.**

He said he hopes the commission will work to win public understanding so that people will think nuclear regulation has changed for the better.

September 14, 2012

## NISA at fault

### NISA skipped check of active fault under nuke plant due to 'lack of data'

<http://mainichi.jp/english/english/newsselect/news/20120914p2a00m0na012000c.html>

The government's Nuclear and Industrial Safety Agency (NISA) did not evaluate a possibly active fault under a nuclear reactor in Ishikawa Prefecture because there were no documents supporting an active fault there, according to internal audit results finalized on Sept. 14.

The internal audit found that the agency had ample opportunity to survey the approximately 300-meter-long S-1 fault under the No. 1 reactor at Hokuriku Electric Power Co.'s Shika nuclear plant in 2008 and 2009, the same time plant buildings were being checked for earthquake resistance. The agency, however, apparently decided to skip the survey of the fault line because "there were no documents indicating the possibility of any active fault running under the plant's premises."

In 2006, the government established new earthquake-proofing building standards for nuclear facilities, and NISA initiated checks of existing buildings to make sure they met the new standards. NISA subsequently directed power companies to make sure their plants met the new requirements.

The agency, however, did not set a deadline for the power firms to submit their reports, and the checks were delayed at many locations. In 2007 -- before all the reports had been submitted -- the Niigata Chuetsu-Oki Earthquake hit off Japan's west coast, damaging Tokyo Electric Power Co.'s Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture.

In the wake of the quake, NISA began treating seismically active fault lines with new importance, and demanded that power companies submit mid-term reports on their earthquake readiness. The agency also set out a priority-based plant screening schedule, under which the examination of smaller faults on nuclear facility property was apparently pushed back.

Hokuriku Electric submitted its mid-term earthquake survivability report for the No. 2 reactor at the Shika plant in March 2008. In the report, the utility called the S-1 fault under the No. 1 reactor building "inactive." NISA never performed a follow-up survey of the fault, and approved the content of the Hokuriku Electric report in February 2009.

The S-1 fault was added to the NISA survey list only recently, after experts declared in July this year that the fault showed strong signs of being active.

September 18, 2012

**End of NISA and NSC**

## **Japan's two nuclear safety bodies to be scrapped for replacement**

<http://mainichi.jp/english/english/newsselect/news/20120918p2g00m0dm082000c.html>

TOKYO (Kyodo) -- Japan's key government entities that have been in charge of nuclear safety regulations are set to be scrapped at midnight Tuesday prior to the launch of a new regulatory authority.

The government has decided to revamp the current regulatory setup involving the Nuclear and Industrial Safety Agency and the Nuclear Safety Commission, a body overseeing the activities of NISA, as they have not proved capable enough in preventing and dealing with the Fukushima Daiichi nuclear power plant disaster last year.

While regretting that NISA, which is under the wing of the industry ministry, failed to prevent the devastating accident, Economy, Trade and Industry Minister Yukio Edano said he wants regulators assigned to serve for the new regulatory body to "fulfill the duties they did not achieve when they were in NISA."

As NISA will be replaced with the Nuclear Regulation Authority, some 350 members from NISA are expected to be transferred to the new organization's secretariat, according to a government official.

Meanwhile, the Nuclear Safety Commission also held its final meeting the same day, ending its 34-year-old history.

In a statement, the five-member commission admitted the country has "intentionally avoided explicit discussions about the potential risks accompanying nuclear power generation" and ended up not working sufficiently to compile specific measures to protect people from radiation risks.

It also said that, from now on, a regulatory organization should check whether utilities have not only satisfied safety standards but are making efforts to pursue the highest safety level.

The government has decided to create a new regulatory body that has greater independence than the existing one, aiming to prevent close relations between regulators and promoters of atomic power, which are said to have caused safety matters to be neglected.

The new body would also take on related tasks that have been carried out by other organizations, such as the NSC and the environmental radiation monitoring functions of the science ministry.

Haruki Madarame, chair of the NSC, told a press conference that the commission's role to double check the activities of NISA was not necessarily working efficiently and welcomed the government's move to unify regulatory functions.

September 19, 2012

## **It will be Tanaka, after all**

### **Noda appoints head of new nuclear body**

[http://www3.nhk.or.jp/daily/english/20120919\\_29.html](http://www3.nhk.or.jp/daily/english/20120919_29.html)

Japan's Prime Minister Yoshihiko Noda has appointed Shunichi Tanaka as the head of the country's new Nuclear Regulation Authority, or NRA. Tanaka was deputy head of the Atomic Energy Commission.

The NRA was launched on Wednesday to replace the Nuclear and Industrial Safety Agency. That agency was criticized for being under the control of the Economy, Trade and Industry Ministry, which promoted nuclear power.

Noda also appointed 4 NRA committee members, including a nuclear reactor expert and a seismologist. They serve under Tanaka, the committee's chairman.

Noda asked the authority to do its best to regain public trust in nuclear power operations. He said that trust was broken by the Fukushima nuclear plant disaster.

Tanaka told reporters that the NRA must deal with the aftermath of the Fukushima nuclear disaster and establish a system of disaster preparedness.

He pledged to start with lessons learned from the disaster to ensure nuclear power safety.

## **Launching of the new Nuclear Regulatory Authority (NRA)**

### **Vowing no more disasters, new atomic regulator launched**

<http://www.japantimes.co.jp/text/nn20120919x5.html>

By KAZUAKI NAGATA  
Staff writer

The government launched a new nuclear regulatory body Wednesday that vowed never to let a disaster like the Fukushima triple meltdown occur again.

The new body — the Nuclear Regulation Authority — has been imbued **with a high level of independence and authority**. But it has a lot of work to do to win back the public's trust in nuclear power regulation after the crisis at the Fukushima No. 1 power plant.

"We are starting this new regulatory body under very difficult circumstances," Shunichi Tanaka, head of the five-member commission, said during its first meeting.

"Our mission is to protect people's lives and their properties. This means we will never, ever let an accident like Fukushima happen again," said Tanaka, a physicist and former vice chairman of the Japan Atomic Energy Commission, a policy-drafting body of the government.

The Nuclear and Industrial Safety Agency, the NRA's predecessor, was heavily criticized for its lack of expertise and independence in regulating the utilities because it was part of the Ministry of Economy Trade and Industry, which for decades had been tasked with promoting nuclear power.

One of the major criticisms of NISA was that it failed to get Tokyo Electric Power Co., the operator of the Fukushima No. 1 plant, to take the measures needed to reduce the risk of a large tsunami knocking out power at the plant, even though the risks had been raised before the major earthquake and ensuing tsunami crippled it on March 11, 2011.

The NRA, along with its secretariat consisting of about **480 employees**, has been established as an outside agency under the environment ministry separate from METI. The NRA has also been given "article 3 commission" status, which gives the body a greater independence from politics to the extent that even the prime minister cannot easily change commission members.

**The secretariat employees are mostly from NISA, while others are from the science ministry, land ministry and the Cabinet Office.**



Under the previous regulatory system, nuclear-related matters were handled not only by NISA but also by other ministries, which resulted in sectionalism. Now, the NRA and its secretariat will handle all nuclear-related matters, including drafting safety standards for reactors, deciding whether to restart idled reactors and decommissioning the crippled Fukushima plant.

One of the most pressing tasks for the NRA will be to draw up new safety standards that will be applied in reactivating reactors and examining possible active faults underneath some plants.

Currently, only two reactors — both at the Oi plant in Fukui Prefecture — are in operation out of the nation's 50 reactors. Most have been halted for regular checkups and have not been restarted due to safety concerns after the Fukushima disaster.

The NRA will also be in charge of deciding whether to allow reactors to operate after they have run for 40 years. The government has said it will not allow utilities to operate reactors more than 40 years in principle, which is a key policy for the government's plan of zero-reliance on nuclear energy.

### **Japan launches new nuclear regulatory body after Fukushima disaster**

<http://mainichi.jp/english/english/newsselect/news/20120919p2g00m0dm038000c.html>

TOKYO (Kyodo) -- Japan on Wednesday launched a highly independent organization to oversee the safety of its atomic reactors, marking a fresh start in nuclear regulation following the disaster at the Fukushima Daiichi complex last year.

The Nuclear Regulation Authority, headed by radiation physicist Shunichi Tanaka, will play a key role in enforcing tougher rules the government has decided to introduce, such as limiting the operation of reactors to 40 years and requiring utilities to apply the latest scientific findings to existing facilities.

The authority is also tasked with formulating criteria for restarting reactors, many of which have been left idled amid heightened public concerns over their safety in the wake of the Fukushima accident. Of the 50 commercial reactors in the quake-prone country, only two have been put back online.

The organization has already got off to a rocky start, with lawmakers and civic groups questioning whether Tanaka is appropriate as chairman because he previously served in key positions in entities that contributed to Japan's nuclear energy drive before the Fukushima crisis.

Tanaka has pledged in a paper submitted to the Diet that he will handle regulatory issues by "keeping a distance" from nuclear power plant operators, but the government ended up appointing Tanaka and the four other members under the authority of Prime Minister Yoshihiko Noda, rather than winning Diet approval.

The four others are **Kenzo Oshima, former ambassador to the United Nations, Kunihiro Shimazaki from the Coordinating Committee for Earthquake Prediction, Kayoko Nakamura from the Japan Radioisotope Association, and Toyoshi Fuketa from the Japan Atomic Energy Agency.**

The authority's secretariat will consist of around 500 people, including about 350 from the now-defunct Nuclear and Industrial Safety Agency, according to government officials.

Amid criticism that NISA lacked teeth because it was under the umbrella of the Ministry of Economy, Trade and Industry, which has been promoting nuclear power, the independence of the new organization is guaranteed legally by giving it a status akin to the country's antimonopoly watchdog, the Japan Fair Trade Commission.

The revamped regulatory setup is also aimed at rectifying the situation in which various government organizations were involved in nuclear safety issues, making it unclear who had the primary responsibility for ensuring citizens' safety in emergency.

NISA and the Nuclear Safety Commission, a body tasked with overseeing the activities of NISA, were scrapped Tuesday midnight.

September 25, 2012

**Good bye to stress tests - New standards within 10 months**

## **New nuclear regulatory body not to continue 'stress tests'**

<http://mainichi.jp/english/english/newsselect/news/20120925p2g00m0dm030000c.html>

TOKYO (Kyodo) -- Japan's new nuclear regulatory authority will not continue the current procedure to assess the safety of reactors for their reactivation because it plans to create fresh criteria, the authority's head Shunichi Tanaka said Monday.

"We will not use 'stress tests' as our judgment criteria," Tanaka said in an interview with Kyodo News, referring to the two-stage safety examination process that the government introduced after the nuclear disaster at the Fukushima Daiichi complex erupted in March last year.

Utilities seeking to restart reactors have submitted the results of the first phase of the stress tests to the authority's predecessor, the Nuclear and Industrial Safety Agency, which was to check the results.

Of the country's 50 surviving commercial reactors, results on 30 have been submitted and Kansai Electric Power Co.'s two reactors in Fukui Prefecture were put back online in July.

But Tanaka's remarks mean that utilities will have to go back to square one in trying to restart their reactors.

Tanaka also emphasized that he has "no intention" to decide on whether the submitted results of the stress tests are proper.

The Nuclear Regulation Authority, launched earlier this month as part of the country's efforts to enhance regulation in the wake of the Fukushima crisis, **plans to formulate new safety standards within 10 months.**

September 27, 2012

## **UPZ extended to 30km-Fault under Oi plant will be surveyed**

### **New N-disaster response plans on way**

<http://www.yomiuri.co.jp/dy/national/T120926003572.htm>

The Yomiuri Shimbun

The Nuclear Regulation Authority plans to next month compile new guidelines on nuclear disaster management, the main pillar of which likely will be a significant expansion of the area in which urgent measures will be taken to protect residents in the event of a nuclear accident.

According to sources, the designation will apply to areas within a 30-kilometer radius of a nuclear power plant--triple the the current eight- to 10-kilometer radius.

At a regular meeting Wednesday, the recently launched authority decided to survey a fault under the Oi nuclear power plant in Fukui Prefecture late next month. The survey at Kansai Electric Power Co.'s plant, whose Nos. 3 and 4 reactors were restarted in July, will be conducted jointly with outside experts.

Under existing government guidelines, areas within eight to 10 kilometers of nuclear plants are designated as nuclear disaster management priority areas. But after the crisis started at the Fukushima No. 1 nuclear power plant in March 2011, a no-entry zone was set within a 20-kilometer radius of the plant, causing confusion among residents over whether to evacuate. In March this year, the Cabinet Office's Nuclear Safety Commission, which was abolished with the launch of the new authority, compiled draft revisions of the guidelines to expand the priority areas.

In line with the draft revisions, the new authority will compile new guidelines. Existing guidelines are regulations set internally by the safety commission. The new authority intends to make new guidelines sanctioned under special legislation concerning nuclear disaster management so local governments and other entities concerned would be required to obey them.

Under the envisaged guidelines, the urgent protective action planning zone (UPZ) for intensive priority measures will be expanded to 30 kilometers around nuclear plants. Residents within five kilometers of a plant will be asked to immediately evacuate if a nuclear accident occurs.

Based on the new guidelines, prefectural and municipal governments are expected to compile fresh disaster management plans by March to determine areas for priority measures and devise detailed evacuation plans for residents.

As for the fault under the Oi plant, the regulation authority decided to inspect an excavation survey that KEPCO conducted with outside experts who pointed out the fault could be active.

The authority decided it will conduct its own excavation survey if it deems KEPCO's survey to be insufficient.

October 2, 2012

## Museum doesn't want to cohabit with nuclear waste

### Museum opposes decision on nuclear waste disposal

<http://www.yomiuri.co.jp/dy/national/T121001003445.htm>

The Yomiuri Shimbun

A museum is strongly objecting to the planned construction of a final disposal site for radioactive waste in a national forest in Takahagi, Ibaraki Prefecture.

The Tokugawa Museum, a public interest incorporated foundation, took a stand against the Environment Ministry's decision because the Tokugawa Forest it co-owns is adjacent to the candidate site, which is to be used to bury waste contaminated by radiation from the Fukushima No. 1 nuclear power plant.

The museum said the ministry's decision has thrown a wrench in its own plans to open a mountain villa in its forest to the public and eventually have it designated as an important cultural asset.

The mountain villa, called Tenryuin Sanso, was built in 1886 by Tokugawa Akitake, the 11th lord of the Mito domain and the younger brother of the 15th and last Tokugawa shogun, Yoshinobu (1837-1913).

The museum's forest, located in Takahagi and Hitachi-Ota in Ibaraki Prefecture, has an area of about 1,420 hectares. The villa is in Hitachi-Ota and about three kilometers from the candidate site.

"I was surprised when I learned [the candidate site] would be so close to our forest. I wonder if the Environment Ministry considered adjacent lands," said Royichi Ishii, head of the Ibaraki office of Oono Forestry Co. that jointly owns and manages the forest.

"We're worried about all sorts of rumors [concerning radioactive waste] ahead of [our application] to have the villa designated as an important cultural asset," the museum said. "We'll strongly oppose construction" of the site for disposal of the waste.

The museum already has said it will cooperate with Takahagi Mayor Yoshio Kusama, who strongly opposes the ministry's decision.

The museum will officially express its opposition to the ministry's decision during a board of directors meeting on Wednesday, it said.

October 3, 2012

## **The NRA will be involved with decommissioning Fukushima Daiichi**

### **NRA to closely monitor Fukushima decommissioning**

[http://www3.nhk.or.jp/daily/english/20121003\\_27.html](http://www3.nhk.or.jp/daily/english/20121003_27.html)

Japan's Nuclear Regulation Authority will designate the defunct Fukushima Daiichi nuclear power plant a special nuclear facility so that it can be involved in its decommissioning process.

Procedures to scrap the plant are being carried out in line with a plan submitted to the government by its owner, Tokyo Electric Power Company.

The Nuclear Regulation Authority, the new nuclear regulatory body that was launched last month, currently has no say regarding the plan.

Chairman Shunichi Tanaka said on Wednesday that the authority will designate the Fukushima plant a special nuclear facility by the end of this month.

This would enable the authority to order Tokyo Electric to submit plans to stabilize the plant's cooling system and to prevent the spread of radioactive pollution.

The authority would also be able to monitor work at the plant and the development of safety technology. It could also order the decommissioning plan to be revised accordingly.

Tanaka told reporters he believes the Fukushima plant remains unstable, contrary to the government's announcement that the reactors have stabilized.

He pledged efforts to ensure a safe decommissioning process, which is expected to go on for 30 years.

## The NRA proposes new safety guidelines

### Nuclear disaster guidelines to be expanded

[http://www3.nhk.or.jp/daily/english/20121003\\_25.html](http://www3.nhk.or.jp/daily/english/20121003_25.html)

Japan's Nuclear Regulation Authority has called for expanding evacuation areas in case of nuclear disasters. It's also considering distribution of iodine tablets to people near nuclear power plants.

The agency on Wednesday presented a draft of revised guidelines for dealing with nuclear disasters.

It calls for expanding evacuation areas around nuclear plants from the current 10 kilometers to 30.

The number of municipalities covered by the guidelines is to increase from the current 45 in 15 prefectures to 135 in 21 prefectures. The municipalities are to reestablish by March 2013 their plans for handling nuclear disasters.

The plan calls for consideration of instructing people to stay home during nuclear disasters, and distributing iodine tablets to people within 50 kilometers of nuclear plants to protect them from radioactive plumes that could cause thyroid damage.

Since iodine tablets can have side effects, it would be necessary to explain their risks before distribution and to decide how to compensate for such effects.

The authority also calls for increasing the maximum distance between nuclear power plants and offsite emergency response centers from the current 20 kilometers to 30.

The agency also proposes prohibiting centers from being located within 5 kilometers of plants and establishing alternative facilities outside of the 30-kilometer area.

### Crisis centers to be moved farther from reactors

[http://www3.nhk.or.jp/daily/english/20121003\\_18.html](http://www3.nhk.or.jp/daily/english/20121003_18.html)

A Japanese government agency has proposed new guidelines for dealing with nuclear disasters, including locating emergency response centers farther away nuclear power plants.

The Nuclear Regulation Authority presented a draft of the guidelines on Wednesday.

The plan calls for increasing the distance between nuclear power plants and off-site emergency response centers to a **30-kilometer radius from the current 20 kilometers**. It also proposes prohibiting centers from being located within 5 kilometers of a plant.

The decision came after the emergency response center serving the Fukushima Daiichi nuclear power

plant lost almost all functions during the disaster in March last year.

The Fukushima center, located about 5 kilometers from the plant, was exposed to radiation.

Five of the 16 off-site emergency response centers around Japan are located within 5 kilometers of a nuclear plant.

The guidelines also propose **expanding evacuation areas around nuclear plants to a 30-kilometer radius from the current 10 kilometers.**

The plan also calls for **distributing iodine tablets to people within 50 kilometers** of a nuclear plant as a safeguard against the spread of radioactivity. It also proposes **instructing them to stay at home.**

The new guidelines will be finalized by the end of the month

October 4, 2012

## Not too much plutonium, says US

### U.S. urges Japan to keep stored plutonium to a minimum

<http://www.japantimes.co.jp/text/nn20121004a5.html>

Kyodo

The United States has urged Japan to keep the amount of plutonium it stores at a minimum, following the recent shift in energy strategy that aims to end atomic power generation by the 2030s, several Japanese and U.S. government sources said Wednesday.

Washington has aired concerns over the possibility of nuclear proliferation since the government decided last month to continue to reprocess spent nuclear fuel even though it appears inconsistent with the zero nuclear reliance target, the sources said.

The United States has said keeping the fuel recycling policy, despite the planned phaseout of nuclear power generation, would undermine the basis of the current Japan-U.S. civilian nuclear cooperation pact, under which Washington approves Tokyo's spent fuel reprocessing, according to the sources.



The 1988 accord promotes bilateral technological cooperation in the nuclear energy area. Washington gave the green light to Japan's commercial use of fuel reprocessing technologies that can be diverted to military use based on Tokyo's promise in the international arena not to keep excess plutonium.

Japan is the only non-nuclear state in the world that has a commercial nuclear fuel reprocessing facility. What appears to be a contradictory energy policy could adversely affect negotiations between Tokyo and Washington to revise the nuclear cooperation pact by 2018.

Shortly before the government decided on the new energy strategy on Sept. 14, Seiji Maehara, then policy chief of the ruling Democratic Party of Japan, and Akihisa Nagashima, then special adviser to Prime Minister Yoshihiko Noda for foreign and defense matters, briefed senior U.S. officials on the fresh policy.

U.S. Deputy Secretary of Energy Daniel Poneman and other officials raised concerns about the increase of plutonium, which can't be reused in Japan under the zero nuclear reliance policy, the sources said.

They were also worried that fossil fuel prices would soar in the global market if the world's third-largest economy abandons nuclear power generation and depends more on such fuels.

The officials also pointed out that the nuclear phaseout would hamper exports of nuclear power generation technologies by Japan-U.S. joint ventures to the rest of the world, giving advantage to rival exporters Russia and China, according to the sources.

Washington expressed particular concern over the issue of plutonium and called on Tokyo, which has adhered to international nonproliferation rules, to keep the amount of the weapons-grade fuel at a minimum.

The United States **requested that Japan flexibly implement the new energy strategy** and that the Noda Cabinet refrain from adopting it at a Cabinet meeting, the sources said.

Before the Fukushima disaster that led to the reversal of nuclear energy policy, the government had planned to reprocess all spent nuclear fuel and reuse extracted plutonium and uranium as reactor fuel at 16 to 18 light-water reactors.

Based on the bilateral nuclear cooperation pact, Japan obtained prior approval of the United States to use fuel made of U.S.-provided uranium and to reprocess fuel spent at U.S.-made nuclear reactors.

## NRA in Ohma?

### Regulator may inspect Ohma plant

[http://www3.nhk.or.jp/daily/english/20121004\\_18.html](http://www3.nhk.or.jp/daily/english/20121004_18.html)

The Nuclear Regulation Authority will consider an on-site investigation of possible active faults near a nuclear power plant under construction in Aomori Prefecture.

The authority's chairman, Shunichi Tanaka, said on Wednesday that any doubts about the active faults near nuclear plants must be cleared. He said the authority may order the operator, Electric Power Development Company, to reinvestigate possible active faults, if necessary. He also said the authority may decide instead to conduct an on-site investigation of the Ohma plant.

The remarks came just 2 days after the construction of the plant resumed. The work had been suspended in the wake of last year's nuclear disaster in Fukushima.

Electric Power Development Company says there are no active faults under the compound.

But Toyo University Professor Mitsuhsa Watanabe and other experts have pointed out that a gigantic active fault off the coast could trigger the movement of a fault running below the Ohma plant.

The nuclear authority is already planning on-site investigations of 6 nuclear facilities, including the Ohi plant in Fukui Prefecture. The Ohi plant was the first to resume operations since last year's disaster at Fukushima Daiichi.

## More info on NRA guidelines

### N-watchdog issues disaster guidelines

<http://www.yomiuri.co.jp/dy/national/T121003003856.htm>

The Yomiuri Shimbun

The Nuclear Regulation Authority released Wednesday a draft of guideline measures to cope with nuclear disasters that includes a request to preemptively distribute stable iodine pills to houses within a 50-kilometer radius of nuclear power plants.

The NRA released the draft for a new guideline for protecting residents in the event of an accident at a nuclear power plant at its regular meeting.

The draft expands the range of priority areas for emergency measures to a 30-kilometer radius from each nuclear power plant.

In addition to the distribution of iodine pills, the draft guideline also presented for the first time measures to cope with situations where large quantities of radioactive substances have been discharged.

The NRA will finalize the draft guideline by the end of this month.

Compiling the new guideline was one of the first tasks of the NRA, which was established in September. In previous guidelines for nuclear disaster prevention, the priority area for countermeasures was roughly defined as a radius of eight to 10 kilometers from a nuclear power plant.

The size of this area was expanded because the no-entry zone created following the accident at the Fukushima No. 1 nuclear power plant had a 20-kilometer radius, which was much larger than originally forecasted.

As a result, the number of municipalities to be covered under the new guidelines will increase from the current 45 to 135.

Under the draft guideline, areas within five kilometers of a nuclear plant are designated as places where residents must immediately evacuate if a serious accident is anticipated.

The NRA will also start deciding numerical criteria, such as radiation levels, that will be used to determine whether an evacuation is necessary.

The draft guideline also proposed stable iodine pills be directly distributed in advance to all households that may be affected to prevent radiation exposure to thyroid glands.

The previous guidelines stated that iodine pills should be stored near nuclear plants by local governments and only be distributed after an accident actually occurs.

The change was the result of lessons learned from the Fukushima accident, when local governments were unable to distribute the pills quickly enough.

Off-site centers, which will act as countermeasure bases in the event of a nuclear accident, will be located within a five- to 30-kilometer radius of nuclear power plants. The draft guideline also proposed that additional off-site centers be built outside the 30-kilometer radius in case others become unable to function.

The previous guidelines stipulated that each off-site center be located within a 20-kilometer radius of a nuclear plant.

At the time of the Fukushima nuclear accident, people in charge of prevention work gathered at an off-site center in Okuma, Fukushima Prefecture, which is about five kilometers from the nuclear plant. However, the center's functions were paralyzed partly because of rising radiation levels.

In addition, the evacuation of patients at Futaba Hospital in the town was delayed and many died as a result.

The new draft guideline urges the compilation of feasible evacuation plans that can minimize burdens on patients based on the assumption that all patients may have to be evacuated.

In the Fukushima accident, coolant water containing large quantities of radioactive substances leaked into the sea. The new guideline urges that measures to cope with such incidents should be considered.

Local governments nationwide that are close to nuclear power plants will compile their own disaster prevention plans based on the NRA's new guideline by March next year.

The plans will be the basis for decisions on whether to allow the reactivation of reactors at nuclear power plants across the nation.

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Outline of draft

- The range of priority areas for nuclear disaster prevention measures will be expanded from an eight- to 10-kilometer radius to a 30-kilometer radius from nuclear power plants.
- Residents within a five-kilometer radius will evacuate immediately when a serious nuclear accident is anticipated.
- Stable iodine pills to prevent radiation exposure in thyroid glands will be distributed in advance to all residents in a 50-kilometer radius.

- Off-site centers serving as bases in the event of a nuclear accident should be built within a five- to 30-kilometer radius. Additional centers should be built outside the 30-kilometer radius zone in case other centers are unable to function.
- Feasible plans to evacuate hospital patients should be compiled.

October 5, 2012

## All Japanese nuclear plants will be screened for active faults

### All nuclear plants to undergo quake fault assessment: NRA official

<http://mainichi.jp/english/english/newsselect/news/20121005p2a00m0na010000c.html>

All nuclear power plants across Japan will undergo screening for active earthquake faults, a senior Nuclear Regulation Authority (NRA) official has told the Mainichi.

Kunihiko Shimazaki, acting chairman of the NRA, revealed the planned inspections, which will also apply to nuclear plants under construction, during an interview with the Mainichi Shimbun on Oct. 4.

Under the plan, six nuclear plants and facilities that had earlier been ordered resurveyed by the NRA's predecessor, the Nuclear and Industrial Safety Agency (NISA), will undergo field surveys. The remaining nuclear plants will also be screened under new safety standards, whose outline will be put forth by the NRA as early as the end of fiscal 2012.

NISA, which is now defunct, had ordered the six nuclear facilities re-examined on the grounds that "the possibility of active faults existing (under their premises) cannot be ruled out." The NRA will dispatch research teams comprising external experts to those facilities, starting with the Oi nuclear plant in Fukui Prefecture in late October.

Referring to the Oma nuclear plant in Aomori Prefecture, whose construction was recently restarted by Electric Power Development Co. (J-Power), Shimazaki said, "If we receive a report from the plant operator (on fault survey results), we will take similar measures," hinting that the plant would undergo a field survey. Some experts have pointed to the possibility of faults running under and around the plant being active.

"We will formulate new safety standards, and will proceed with regulations by applying them to existing nuclear plants. In the future, all nuclear plants will eventually be reviewed (for earthquake fault evaluations)," Shimazaki said.

Previously nuclear plants under construction had not been included in plans for fault re-examinations.

Asked how NRA will respond should an active fault be found directly beneath a reactor building, Shimazaki said, "We will take appropriate responses, including demanding the operator to suspend the facility's operation."

## Shika plant on trial

### Shika nuke shutdown trial kicks off

Kyodo

<http://www.japantimes.co.jp/text/nn20121005a9.html>

KANAZAWA, Ishikawa Pref. — Hokuriku Electric Power Co. is seeking the dismissal of a lawsuit in which 120 people are demanding that reactor 2 at the Shika nuclear plant in Ishikawa Prefecture be suspended due to safety concerns.

As the trial got under way Wednesday at the Kanazawa District Court, the plaintiffs argued that a geological fault under the plant's adjacent No. 1 reactor is active and could result in a catastrophic accident, but the utility countered by assuring that "safety is sufficiently secured."

The suit was filed in June by residents of Ishikawa Prefecture and adjacent Toyama Prefecture. It claims the Fukushima disaster showed that nuclear plants can't be deemed safe merely because they are in compliance with the government's safety guidelines.

The now-defunct Nuclear and Industrial Safety Agency ordered Hokuriku Electric in July to reinvestigate the fault.

"The existence of an active fault will be a major point of this suit. We will never accept a coverup of an active fault," Susumu Kitano, leader of the plaintiffs, told the court Wednesday.

The utility is scheduled to release the findings of its probe into the alleged fault under reactor 1 in January. If the government judges it is active, the unit could be decommissioned and Hokuriku Electric also could be forced to halt operations at reactor 2.

The government gave the green light to construct reactor 1 in August 1988 after Hokuriku Electric's underground surveys did not detect any active faults. The power station launched operations in July 1993.

This is not the first time residents near the Shika power station have sought a court order to close the facility. The Kanazawa District Court ruled in favor of the plaintiffs and ordered the suspension of reactor 2 in 2006, but the Nagoya High Court's Kanazawa branch overturned the ruling three years later. The Supreme Court finalized it in 2010.

## First NRA drill in Rokkasho

### Japan's new nuclear regulator stages 1st drill

[http://www3.nhk.or.jp/daily/english/20121005\\_26.html](http://www3.nhk.or.jp/daily/english/20121005_26.html)

Japan's Nuclear Regulation Authority, or NRA, has staged its first emergency drill since its launch in September.

The drill on Friday was based on a scenario involving a massive earthquake and resulting power blackout at a nuclear fuel reprocessing plant in Rokkasho, in the northern prefecture of Aomori.

The authority's commissioner Toyoshi Fuketa flew to the plant on a Self-Defense Force aircraft with NRA secretariat staff.

The NRA has designated Fuketa to meet nuclear plant operators during emergencies to command disaster response.

Last year's nuclear accident at the Fukushima Daiichi power plant exposed serious flaws in communication between the government, the disabled plant and its operator's headquarters.

In Friday's drill, NRA secretariat official Yoshihide Kuroki went to an emergency response center near the Rokkasho plant.

Kuroki used a video link with the NRA in Tokyo to practice confirming evacuation and other steps to ensure residents' safety.

Kuroki said the simulation went smoothly but that reaching the center took as long as 5 hours.

The NRA consists of a 5-member commission and a secretariat. It aims to singlehandedly oversee nuclear safety, with a high degree of independence.

October 11, 2012

## Dam failure could be much worse than Fukushima tsunami

### **NRC whistle blowers warn of nuclear accidents caused by dam failures and effort to suppress disclosure**

<http://www.beyondnuclear.org/nuclear-power/2012/10/11/nrc-whistleblowers-warn-of-nuclear-accidents-caused-by-dam-f.html>

Independent warnings from government whistleblowers within the U.S. Nuclear Regulatory Commission (NRC) have surfaced alleging that U.S. nuclear power stations sited along major rivers and below reservoirs are vulnerable to a catastrophic nuclear accident following major dam failures.

In July 2011 with the flood waters along the Missouri River still rising around Nebraska's Fort Calhoun nuclear power station, David Loveless, a NRC Senior Reactor Analyst concluded in a post-Fukushima technical review for the flood analysis at the nuclear power stations, that the reactor would not survive the gross failure of the Oahe dam—one of six dams on the Missouri River upstream from the nuke. Loveless cites analysis that a dam break would hit the reactor on the Missouri River with a wall of water knocking out electrical power systems and water pumps vital for reactor cooling.

The group, Clean Nebraska, has recently written to NRC Chairwomen Allison Macfarland in an appeal to not allow the restart of the reactor pending a full investigation.

Then in September 2012, Richard Perkins, an Nuclear Reactor Regulations engineer and the lead author of "Flooding of U.S. Nuclear Power Plants Following Upstream Dam Failure," asked the agency's Office of Inspector General to investigate his allegations that the NRC "*staff intentionally mischaracterized relevant and noteworthy safety information as sensitive, security information in an effort to conceal the information from the public*" where "*agency records that show the NRC has been in possession of relevant, notable, and derogatory safety information for an extended period but failed to properly act on it. Concurrently, the NRC concealed the information from the public.*"



Perkins further charges that his concerns regard a government deliberate cover-up and violation of law involving fraudulent safety claims to surrounding communities and their representatives.

Another NRC anonymous whistleblower, drew even more attention to risk of nuclear accidents following dam failure to the Oconee reactor in Seneca, South Carolina, stating, *"The probability of Jocassee Dam catastrophically failing is **hundreds of times greater than a 51 foot wall of water hitting Fukushima Daiichi**," the engineer said. "And, like the tsunami in Japan, the man-made 'tsunami' resulting from the failure of the Jocassee Dam **will -- with absolute certainty -- result in the failure of three reactor plants along with their containment structures.***

October 19, 2012

## There is no such thing as "earthquake prediction"

### Editorial: Seismological Society should notify public on limits to earthquake predictions

<http://mainichi.jp/english/english/perspectives/news/20121019p2a00m0na010000c.html>

The Seismological Society of Japan (SSJ) has drafted an action plan aimed at reforming itself. In the draft, the group admits that it is extremely difficult at the current stage to accurately predict earthquakes and says it will not use the phrase, "earthquake prediction," to mean stochastic forecasts.

However, just changing the phrase is far from sufficient. The society should continue to discuss specific measures that the government should take to prevent damage from earthquakes and how to forecast tremors.

Earthquake prediction has been defined as grasping when and where earthquakes will occur and how large and powerful they are in advance.

Such predictions are regarded as highly accurate information based on which the government issues quake warnings. The Act on Special Measures concerning Countermeasures against Large-scale Earthquakes, which came into force in 1978 in anticipation of a Tokai earthquake expected to hit central Japan, is based on this definition.

However, the Great Hanshin Earthquake that devastated Kobe and surrounding areas in 1995 has proven that predicting earthquakes is impossible at the present time. Nevertheless, the phrase, "earthquake prediction," has been widely used at universities and government bodies. The nation as a whole should reconsider the use of the phrase.

On the other hand, earthquake forecasting shows the chance that an earthquake with a certain scale will occur in a specific area within certain years. Since the Great Hanshin Earthquake, the government's Earthquake Research Committee has worked on long-term forecasts for powerful earthquakes in Japan.

However, the March 2011 Great East Japan Earthquake has shown that such long-term forecasting is also unreliable. The committee had forecast the chances of earthquakes hitting several areas off the Boso Peninsula in Chiba Prefecture to the Sanriku area in the Tohoku region within 30 years and the scales of the tremors. However, it was unable to forecast the magnitude-9 Great East Japan Earthquake, which occurred as a result of multiple plates moving together.

As such, **an important lesson learned from the March 11, 2011 earthquake is that predicting earthquakes immediately before they occur and long-term forecasting are unreliable.** It is theoretically difficult to forecast massive earthquakes because such disasters do not occur frequently and experts have not clarified the mechanism of such massive temblors occurring.

The SSJ should not send the wrong message that long-term earthquake forecasting is reliable while it is impossible to accurately predict earthquakes shortly before they hit by overemphasizing that it will stop using the phrase, "earthquake prediction." **The SSJ should rather place priority on fulfilling its role of correctly notifying the public of the current seismology situation as it pledges in the draft of its action plan.**

Limits on seismology should be kept in mind in surveying active faults near nuclear power plants. The government's Nuclear Regulation Authority will conduct an on-the-spot inspection on the Oi Nuclear Power Plant operated by Kansai Electric Power Co., and will consider whether it is necessary to conduct such an inspection on active faults near six other nuclear-related facilities. **Regardless of the outcome of such inspections, it is indispensable to take into consideration the risks of massive earthquakes hitting these facilities.**

October 21, 2012

## Research base in Fukushima

### **Japan, IAEA plan joint project in Fukushima from 2013**

<http://mainichi.jp/english/english/newsselect/news/20121021p2a00m0na011000c.html>

### **Japan, IAEA working on Fukushima decontamination and disposal base**

<http://www.japantimes.co.jp/text/nn20121021x2.html>

Kyodo

The International Atomic Energy Agency and the Japanese government plan to set up a long-term research base in Fukushima to study ways to decontaminate radiation-tainted areas and dispose of radioactive waste, government sources said Saturday.

Because of the massive fallout unleashed by Fukushima No. 1 core meltdowns following last year's massive earthquake and tsunami, vast areas of Fukushima Prefecture remain under evacuation. As of the beginning of the month, some 110,000 people were banned from their homes.

Through the multiyear project, the government aims to conduct field research it hopes will allow residents to return to the hot zone as soon as possible without endangering their health.

The IAEA is expected to dispatch researchers from Belarus, Ukraine and Russia who participated in the research and rebuilding efforts launched following the 1986 Chernobyl disaster in Ukraine, which was then a part of the former Soviet Union, the sources said.

At the ministerial conference on nuclear safety in Fukushima on Dec. 15, the two parties hope to see Fukushima Gov. Yuhei Sato and IAEA Director General Yukiya Amano sign an agreement for the project.

Fukushima initially called on the IAEA to open an office in the prefecture, but the nuclear watchdog was unable to secure the funding needed.

The Japanese government, with the cooperation of Fukushima Prefecture, is seeking to secure a facility stocked with the necessary equipment by January, the sources said.

The central government has allotted ¥930 million from the fiscal 2011 budget to conduct joint projects with the IAEA and is negotiating to use part of those funds for the research project.

On Aug. 31, Sato visited IAEA headquarters in Vienna to request the IAEA's help with decontamination and other efforts.

October 24, 2012

## Radiation projections

### **Draft guideline expands evacuation zone**

[http://www3.nhk.or.jp/daily/english/20121024\\_24.html](http://www3.nhk.or.jp/daily/english/20121024_24.html)

Japan's Nuclear Regulation Authority has proposed expanding the evacuation radius for nuclear accidents from the current 10 kilometers to 30 kilometers.

The new figure was included in a draft disaster response guideline submitted to the authority's meeting on Wednesday.

The authority looked into the fact that many elderly and hospitalized patients died in the course of evacuating the Fukushima accident in March last year.

The draft guideline calls for deciding evacuation shelters in advance and setting up temporary shelters for those who cannot move far away.

The authority plans to complete the guideline before the end of this month.

The guideline will form the basis of disaster plans to be created by the end of next March by 135 municipalities in 21 prefectures that lie within 30 kilometers of a nuclear plant.

## **Japan regulator projects nuclear radiation spread**

[http://www3.nhk.or.jp/daily/english/20121024\\_23.html](http://www3.nhk.or.jp/daily/english/20121024_23.html)

Japan's Nuclear Regulation Authority has unveiled projections for the spread of radiation from nuclear power plants across the country in the event of an accident like the one last year at the Fukushima Daiichi plant.

The regulatory body says severe accidents at 4 of the 16 nuclear power stations examined could result in widespread contamination beyond a 30-kilometer radius of the plants, and exceeding an international benchmark for evacuation.

The authority proposed increasing the current size of the evacuation zone around Japan's nuclear plants from a 10-kilometer radius to 30 kilometers.

The projections released on Wednesday simulate an event equivalent to the Fukushima accident, with a one-time massive release of radioactive substances from each plant. Assumptions include weather patterns recorded over the past year.

The projections show locations where effective doses of radiation in the first 7 days would reach 100 millisieverts the international benchmark for evacuation.

At 12 plants, including the Tomari plant in Hokkaido and the Ikata plant in Ehime Prefecture, these locations were all within the 30-kilometer radius.

Locations with 100 millisieverts of radiation showed up outside the 30-kilometer radius of 4 plants.

At the Kashiwazaki-Kariwa plant in Niigata Prefecture, which has 7 nuclear reactors, high-level radiation locations were projected in Uonuma City, about 40.2 kilometers from the plant.

The other 3 plants examined are the Fukushima Daini in Fukushima Prefecture, the Ohi plant in Fukui Prefecture, and the Hamaoka plant in Shizuoka Prefecture.

The projections are expected to serve as a reference for municipalities compiling evacuation plans for their residents by the end of next March.

The regulatory body says the projections don't take into account the geological features of areas surrounding the plants and should therefore be viewed as rough estimates only.

## **Post-disaster radiation predictions for nuclear plants released**

<http://mainichi.jp/english/english/newsselect/news/20121024p2a00m0na014000c.html>

The Nuclear Regulation Authority (NRA) on Oct. 24 released predictions for the spread of radiation for all of Japan's nuclear plants besides the crippled Fukushima No. 1 Nuclear Power Plant in the event of future nuclear disasters.

They are the first such predictions to be released, and for four plants, the predictions extend past a 30-km evacuation radius proposed by the national government.

Two scenarios were calculated -- one where around the same amount of radiation that was released from the Fukushima No. 1 Nuclear Power Plant's first through third reactors is released, and one where all of a plant's reactors have melted down. For most of the plants, weather conditions used in calculations were those of last year.

For each plant, the farthest point where the International Atomic Energy Agency's evacuation standard of 100 millisieverts of combined external and internal exposure over one week would be reached following a nuclear disaster was mapped in 16 directions. To eliminate the influence of extreme weather, the top three percent of distances were omitted.

In the results, the Fukushima No. 2 Nuclear Power Plant in Fukushima Prefecture, the Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture, the Hamaoka Nuclear Power Plant in Shizuoka Prefecture, and the Oi Nuclear Power Plant in Fukui Prefecture were all predicted to see radiation spread further than 30 kilometers.

At the Kashiwazaki-Kariwa plant, a site with a very high power output, the predicted spread went 40.2 kilometers east-southeast to the city of Uonuma. For the Hamaoka plant, the spread was over the ocean. The other 12 nuclear plants' spreads were within 30-km radiuses.

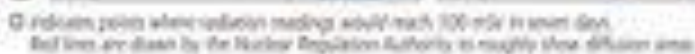
The office of the NRA, however, pointed out, "The calculations are based on hypotheticals and there are limits to their accuracy and reliability."

The maps were made by the NRA and the Japan Nuclear Energy Safety Organization for use as reference by municipal governments in putting together area disaster response plans by the end of March next year.

October 25, 2012

## NRA simulates N-disasters / High radiation of 4 plants could spread beyond 30 km

<http://www.yomiuri.co.jp/dy/national/T121024003544.htm>



Highly radioactive substances dispersed in a nuclear accident could spread beyond the 30-kilometer-radius zones used for disaster management planning, according to diffusion simulation results released Wednesday by the Nuclear Regulation Authority.

In worst-case scenarios at four of 16 nuclear plants in Japan, high levels of contamination would be found beyond the 30-kilometer zones set as priority areas in new disaster management guidelines drafted by the NRA.

The simulations showed accumulated radiation readings in areas around the four nuclear plants could reach 100 millisieverts--the level at which the International Atomic Energy Agency considers it necessary for residents to evacuate--in seven days.

The four plants are the Kashiwazaki-Kariwa plant in Niigata Prefecture, the Hamaoka plant in Shizuoka Prefecture, the Oi plant in Fukui Prefecture and the Fukushima No. 2 plant in Fukushima Prefecture.

It is the first time the government has released such simulation data. But the forecasts were based on weather conditions alone, and geographical features were not taken into account.

At the outbreak of the nuclear crisis at the Fukushima No. 1 plant last year, data from the System for Prediction of Environment Emergency Dose Information, called SPEEDI, to predict the diffusion of radioactive substances were not made public. The government thus failed to use the system effectively to evacuate residents.

The NRA said the simulations this time were made to provide reference data for local governments, which are working on their respective disaster management plans, at their request. Targeting all 16 commercial nuclear plants in the nation, except for the Fukushima No. 1 plant, the authority said it applied a method used in the United States for simulations.

The simulations were made for each plant in two different scenarios--one in which radioactive substances leak in the same amount as in the Fukushima No. 1 plant disaster, and the other in which meltdowns occur at all reactors to release radioactive substances. The latter is the worst-case scenario.

On maps, the NRA showed points at which the accumulated exposure dose of radiation could reach 100 millisieverts in seven days. These points are on lines in 16 evenly divided directions from each nuclear plant. The International Commission on Radiological Protection has estimated that exposure to radiation of 100 millisieverts would increase the risk of death from cancer or other causes by 0.5 percent.



Geographical features, such as plains or mountains, are not factored in at all, said the NRA, adding the simulations were based on meteorological data such as direction and speed of the wind as well as precipitation last year.

Simulation results showed, in the worst case scenario, radioactive substances from the Kashiwazaki-Kariwa nuclear plant would reach as far as Uonuma, about 40 kilometers away. Including this case, high simulated diffusions were seen in six cities beyond the 30-kilometer zones around the four plants.

In the scenario in which the amount of radioactive substances was set at the same level as the Fukushima No. 1 plant case, simulated diffusions were all within the 30-kilometer zones.

In areas where simulated diffusions were seen beyond the 30-kilometer priority areas, local governments likely will need to review their evacuation guidelines and other related matters, observers said.

The NRA's Secretariat said the same day it would hold a briefing for local governments to give advice in their disaster management plans.

## Projections for severe accidents

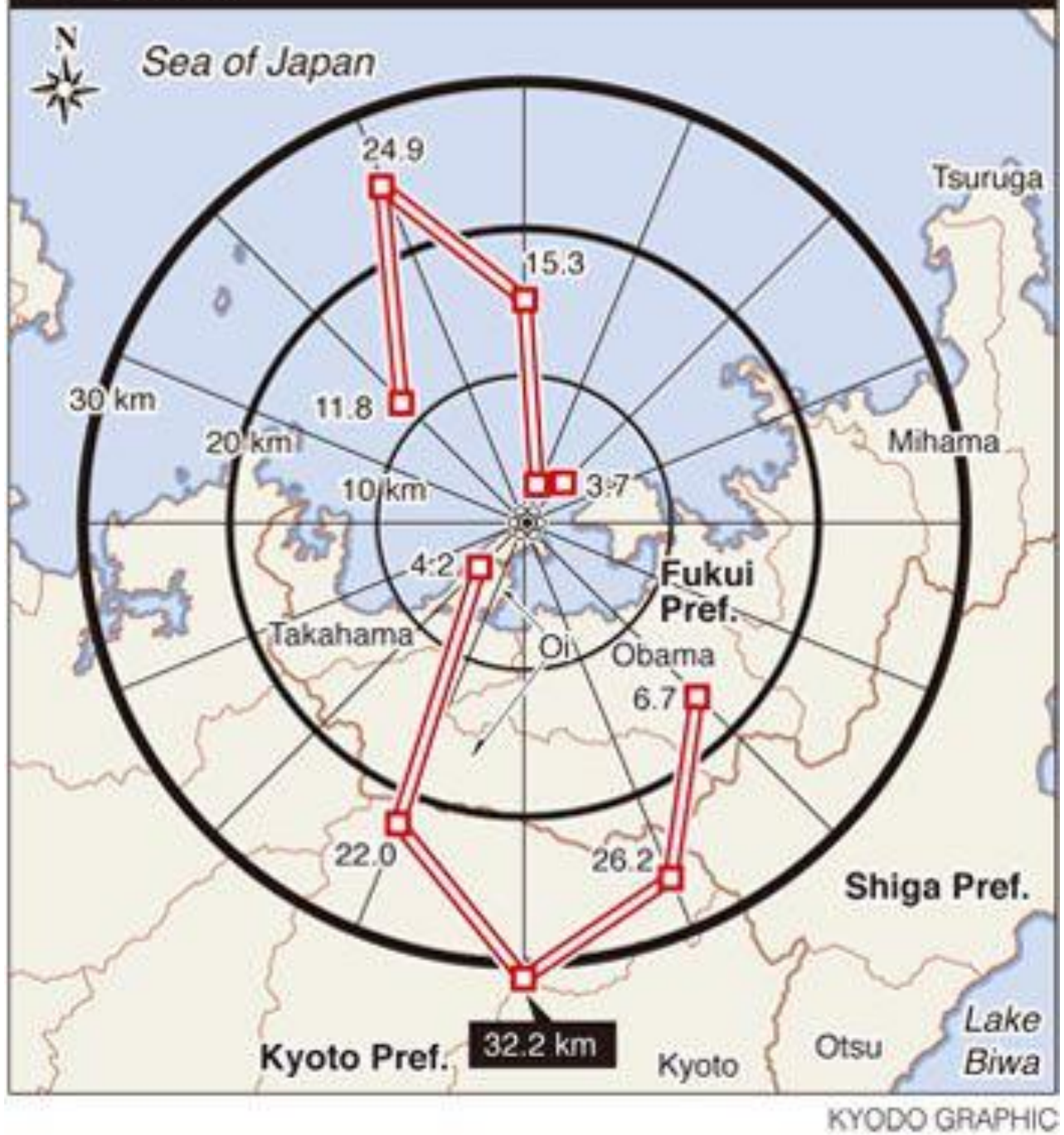
### **Regulator to urge wider nuclear safety zones**

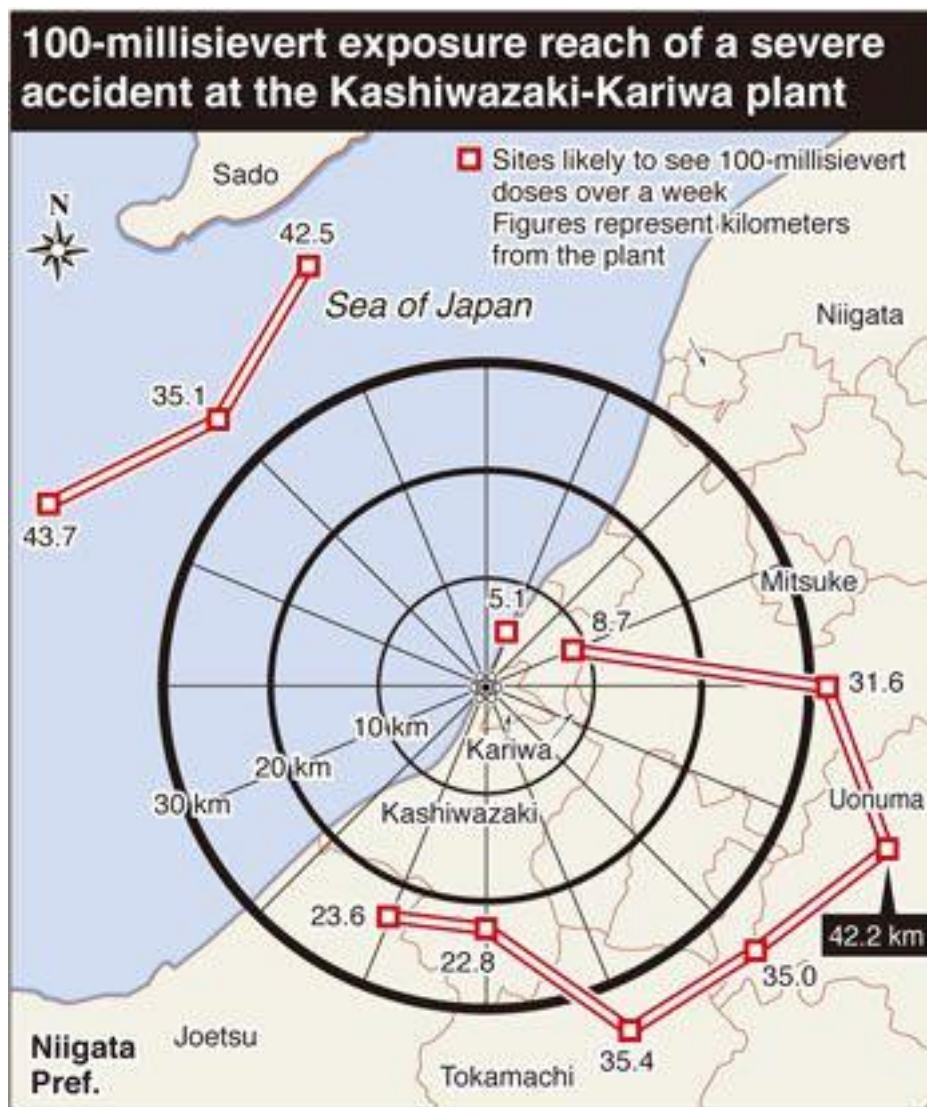
<http://www.japantimes.co.jp/text/nn20121025a1.html>

Kyodo

Nuclear regulatory authorities on Wednesday released their first projections for the spread of radiation from nuclear reactors in the event of severe accidents like the meltdowns at the Fukushima No. 1 power plant last year, and the results show that bigger evacuation zones may be needed.

# Oi plant





The amount of radiation released a week after a catastrophic accident at Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant in Niigata Prefecture could reach the level where evacuation is recommended for people living as far as 40 km away, the Nuclear Regulation Authority said.

The regulatory body conducted radiation simulations for 16 nuclear plants to provide references for regional governments to expand areas subject to special preparations for nuclear disasters from the current distance of 10 km from facilities.

The Nuclear Regulation Authority plans to propose disaster-mitigation guidelines under which 30-km emergency zones would be set around nuclear facilities, but the new estimates may prompt local governments to designate bigger areas. The new guidelines are to be compiled this month based on lessons learned from the Fukushima disaster.

The NRA found that radiation levels could reach 100 millisieverts in Uonuma, Niigata Prefecture, about 40.2 km from the Kashiwazaki-Kariwa plant, based on the assumption that all seven of its reactors suffer meltdowns.

Radiation doses could also reach 100 millisieverts in locations a little more than 30 km from Chubu Electric Power Co.'s Hamaoka plant in Shizuoka Prefecture, Kansai Electric Power Co.'s Oi plant in Fukui Prefecture and Tepco's Fukushima No. 2 plant in Fukushima Prefecture. The only commercial reactors currently operating are two units at the Oi plant.

The simulations were based on calculations of precipitation and wind velocity in each area throughout a year.

The NRA, however, noted that the simulations should be used only as a "guide" to likely trends of dispersal of radioactive substances because they did not take into account geographical features around the plants or changes in wind direction.

NRA Commissioner Kunihiro Shimazaki said the results are "very important" in getting a basic idea of how far contamination can spread but acknowledged the need to create simulations that also reflect land features so local governments can compile their evacuation plans in line with real-life conditions.

The International Atomic Energy Agency calls for evacuations when effective doses exceed 100 millisieverts in the first seven days of an emergency.

The NRA plans to introduce the idea of a "precautionary action zone" and "urgent protective action planning zone" in line with IAEA standards.

People in the precautionary zone would be told to evacuate immediately after an accident. It is expected to cover a 5-km radius around nuclear plants. People in the other type of zone, which is expected to cover a 30-km radius, would be told to prepare to get out, depending on the situation.

Local governments are expected to define the actual scope of the zones by themselves, but officials have called for more details about the simulations.

## What's an active fault?

### Editorial: Nuclear regulator must prioritize safety in active fault assessments

<http://mainichi.jp/english/english/perspectives/news/20121025p2a00m0na007000c.html>

The government's Nuclear Regulation Authority (NRA) will launch on-the-spot surveys to confirm whether there are active faults under nuclear power stations across the country, beginning at the Oi Nuclear Power Plant in Fukui Prefecture in November. **If active faults just below a nuclear plant trigger a powerful quake, it could cause catastrophic damage to the reactors.**

NRA Commissioner Kunihiro Shimazaki, the nuclear regulatory body's second-in-command, said the panel will review what constitutes an active fault in its nationwide surveys. The government's current guidelines for quake-resistance of nuclear plants recognize faults that have moved in the past 120,000-130,000 years as active faults. **The NRA reportedly intends to broaden the scope to cover those that were active hundreds of thousands of years ago.** We laud this move to prioritize safety.

Active faults are generally defined as faults that show traces of repeated past movement and may trigger earthquakes in the future. Countermeasures against earthquakes triggered by active faults are regarded as an important pillar of nuclear plant safety inspections, and the government does not allow nuclear reactors and other key facilities in nuclear power stations to be built above such faults.

However, suspicions have arisen that the government's assessments of faults around nuclear plants conducted in the wake of the March 2011 Great East Japan Earthquake may have overlooked active faults below some of the power stations. In response, the NRA is set to conduct on-the-spot surveys on five other facilities, including Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture and Hokuriku Electric Power Co.'s Shika power station in Ishikawa Prefecture, following the Oi plant run by Kansai Electric Power Co.

It has been pointed out that electric power companies have underestimated the impact of earthquakes that could hit their nuclear stations. For example, **utilities' forecast of the scale of earthquakes that could occur near their power plants tends to be smaller than predictions by the government's Headquarters for Earthquake Research Promotion.** In a report released in 2010, the headquarters defined faults that triggered temblors 400,000 years ago on as active faults. In other words, such a wide gap in the definition of active faults was unreasonable. The NRA should investigate whether power companies and the NRA's predecessor had deliberately covered up active faults near nuclear plants.



A serious problem is that there is a possibility that even experts will be split on whether the faults are active. However, once a serious accident breaks out at a nuclear plant, its impact will be immeasurable. Regarding a survey on faults below the Oi plant, NRA Chairman Shunichi Tanaka said, "**We must make a serious judgment even if faults are only suspected of being active, let alone cases in which the faults are confirmed to be active.**"

The NRA should closely examine faults near nuclear plants across the country, and if the panel deems them active, it should demand that the power stations near them be suspended or decommissioned. **It goes without saying that priority must be placed on the safety of members of the public over power suppliers' profits.**

The NRA should incorporate criteria for assessing active faults from the standpoint of safety and procedures for decommissioning nuclear plants based on assessment results into new safety standards for nuclear power stations it will draw up by July next year. The NRA must keep in mind that there are active faults all over this earthquake-prone nation.

October 26, 2012

## Mushrooms and radiation

### **Yoroku: Mushrooms remind humans of dangers they brought on themselves**

<http://mainichi.jp/english/english/perspectives/news/20121026p2a00m0na004000c.html>

Austrian psychoanalyst Sigmund Freud is said to have taken a hat with him whenever he went on walks in the nearby woods with his family. Whenever he spotted a porcini or another type of mushroom, he would quickly throw his hat on it and declare, "That one's mine!"

Though Freud was an avid mushroom picker, his wife is said to have preferred buying mushrooms from the store, lacking confidence in her husband's ability to distinguish the edible ones from the poisonous. Surely there's nothing as troublesome as a careless mushroom-picking enthusiast.

The radiation contamination of Austrian mushrooms attracted attention following the 1986 Chernobyl disaster in the former Soviet Union. A quarter of a century later, radiation is no longer detected in much of the agricultural products that were initially affected by the disaster, except for in wild mushrooms, in which relatively high concentrations of radioactive cesium are still found.

In Japan, many people enjoy going mushroom picking in the mountains in autumn. But according to media reports, radioactive cesium levels above the national permissible limit have been found in gypsy mushrooms and weeping milk caps in several municipalities in eastern Japan. Such municipalities, as a result, have imposed voluntary bans on the distribution and sale of wild mushrooms.

According to Makoto Ogawa's book "Kinoko no Oshie" (The teachings of mushrooms), mushrooms' tendency to absorb cesium had attracted attention in Europe since the 1960s. The ones that grow from the ground are the most absorbent, serving to circulate the radioactive cesium on the soil surface and confine it inside the forests for a long time.

The radioactive substances that have made their way into the forests look like they'll be sticking around for a while. Meanwhile, mushrooms kindly alert us to the dangers of radiation contamination that humankind has wrought.

## Just a reference, that's all

**Local govts urged to set N-disaster plans / NRA chairman describes simulation data as reference, says no cause for excessive concern**

<http://www.yomiuri.co.jp/dy/national/T121025004053.htm>

## Distances from nuclear plants to the farthest municipalities where radiation levels are predicted to reach 100 millisieverts

*\*In worst-case scenarios where meltdowns occur in all nuclear reactors*

Nuclear power plant	Distance from plant (in kilometers)	Municipality
Tomari (Tomari, Hokkaido)	19.9	Kutchan
Higashidori (Higashidori, Aomori Prefecture)	13.6	Higashidori
Onagawa (Onagawa, Ishinomaki in Miyagi Prefecture)	18.3	Ishinomaki
Fukushima No. 2 (Tomioka, Naraha in Fukushima Prefecture)	32.5	Naraha
Kashiwazaki-Kariwa (Kashiwazaki, Kariwa in Niigata Prefecture)	40.2	Uonuma
Tokai No. 2 (Tokai, Ibaraki Prefecture)	13	Hitachinaka
Hamaoka (Omaezaki, Shizuoka Prefecture)	30.9	Makinohara
Shika (Shika, Ishikawa Prefecture)	19.6	Hakui
Mihama (Mihama, Fukui Prefecture)	18.2	Mihama
Takahama (Takahama, Fukui Prefecture)	29.7	Nantan, Kyoto Prefecture
Oi (Oi, Fukui Prefecture)	32.2	Kyoto
Tsuruga (Tsuruga, Fukui Prefecture)	19.9	Nagahama, Shiga Prefecture
Shimane (Matsue)	24.2	Yasugi, Shimane Prefecture
Ikata (Ikata, Ehime Prefecture)	21.9	Ikata
Genkai (Genkai, Saga Prefecture)	27.5	Karatsu
Sendai (Satumasendai, Kagoshima Prefecture)	21	Akune

*(Source: The Secretariat of the Nuclear Regulation Authority)*

Local governments will be urged to make new regional disaster management plans based on results from the Nuclear Regulation Authority's diffusion simulation of radioactive substances in the event of a nuclear accident.

The NRA released the simulation data Wednesday, which are rough indicators of diffusion taking into account only weather conditions, such as estimated wind direction and speed.

However, some experts say the simulation results are not necessarily realistic, as the effects of geographic features, such as mountains or plains in the potentially affected areas, were not taken into consideration.

The diffusion simulation, conducted by the government for the first time, showed that at four of 16 nuclear power plants across the nation, high levels of contamination could spread beyond the 30-kilometer-radius zone.



The four plants are the Kashiwazaki-Kariwa plant in Niigata Prefecture, the Hamaoka plant in Shizuoka Prefecture, the Oi plant in Fukui Prefecture, and the Fukushima No. 2 plant in Fukushima Prefecture.

Although the NRA designated the 30-kilometer-radius zones as priority areas in its draft of disaster management guidelines, the simulation showed accumulated radiation levels could reach 100 millisieverts in areas outside the radius in seven days.

At a press conference after Wednesday's announcement, NRA Chairman Shunichi Tanaka emphasized the data is just for reference.

"The figures [are not intended] to attract too much attention," he said.

The NRA plans to hold explanatory meetings for local governments early next month to advise them to use the data in their efforts to devise regional disaster management plans.

The NRA aims to legislate the new safety guidelines for nuclear power plants and is making utmost efforts to prevent a recurrence of a Fukushima-style nuclear crisis. But to reactivate nuclear power plants, measures based on the assumption that a nuclear accident can occur are deemed necessary.

The diffusion simulation data may be a useful reference for local governments when making their disaster management plans.

Accordingly, the NRA decided to release the data despite the risk of creating some confusion.

The simulation was conducted using a computer system similar to that of the U.S. Nuclear Regulatory Commission, which was used to forecast diffusion of radioactive substances.

As this system could not take geographical landscape features into account in its calculations, the simulation was done purely based on weather conditions.

Specifically, calculations were based on hourly weather data, such as wind direction, wind speed, rainfall and the stability of air observed last year. The data was collected over one year for a total of 8,760 hours--equivalent to 24 hours a day for 365 days.

Data was gathered for sites on equidistant straight lines from power plants in 16 directions, and sites where accumulated radiation levels could reach 100 millisieverts in seven days were highlighted on maps.

Sites on these lines closer to the nuclear power plant would show higher levels of radiation than the highlighted sites.

But some sites did not appear on the map because calculations could not be made there. This was because sufficient weather data was not available, which may have occurred if, for example, no remarkable winds were observed last year.

Among the 16 nuclear power plants, the Kashiwazaki-Kariwa plant has the world's largest output capacity with seven reactors, and highly radioactive substances would travel the farthest during a meltdown. The accumulated radiation level could exceed 100 millisieverts at sites about 40 kilometers from the plant.

Tanaka said even if there are sites where the radiation levels may reach 100 millisieverts outside the 30-kilometer zones, he does not intend to change the designation of 30-kilometer priority zones in the NRA's new disaster-management guidelines.

Prof. Hiromi Yamazawa of Nagoya University's graduate school, an expert on diffusion simulation and environmental radioactivity, said: "The method used in the United States, where many nuclear power plants are located on vast plains, was used for [the calculations on] Japanese nuclear power plants, which are mostly located in mountainous regions. The calculation did not include geographical features, which largely affect diffusion.

"Even if you're in one of the areas with high projected radiation levels, there is no cause for excessive concern. But that does not mean you should be complacent. If a large quantity of radioactive substances is actually discharged, weather conditions will largely affect the diffusion, and at any rate, radioactive substances may go beyond the 30-kilometer radius. Local governments should make evacuation plans with these factors in mind."

## **Gov'ts strategy too inconsistent for panel to even debate it**

### **Gov't hits deadlock over energy plan as experts cite inconsistencies in nuclear stance**

<http://mainichi.jp/english/english/newsselect/news/20121026p2a00m0na015000c.html>

The government's efforts to draw up a new basic energy plan in the wake of the crisis at the tsunami-hit Fukushima No. 1 Nuclear Power Plant have come to a deadlock.

Economy, Trade and Industry Minister Yukio Edano is eager to complete the plan by the end of this year to make it an important point of contention during the upcoming House of Representatives election. However, an experts' panel on energy has refused to deliberate on the plan, saying the government's policy is so unclear that they cannot discuss it.

The work to draw up the new energy plan remains up in the air as lawmakers from the ruling Democratic Party of Japan (DPJ) are split between those seeking to eliminate nuclear power by the 2030s and those promoting nuclear energy.

The government was to draw up the basic energy plan based on its Innovative Strategy for Energy and the Environment, which was worked out in September and proposed the shutdown of all nuclear plants in the 2030s.

However, the Fundamental Issues Subcommittee of the Advisory Committee for Natural Resources and Energy pointed out on Sept. 18 that there were inconsistencies in the strategy. Specifically, the subcommittee recognized the government's intention to approve the operations of nuclear plants already under construction while at the same time seeking to get rid of nuclear power stations by the 2030s as problematic.

Akio Mimura, chairman of the subcommittee, declared that it would not deliberate on the new basic energy plan until the inconsistencies were eliminated. "The government's strategy lacks consistency. Its goal is vague," he said. Since then, the panel has not held a meeting.

The Innovative Strategy for Energy and the Environment is equivocal as it appeals to both pro- and anti-nuclear power legislators within the ruling party.

Edano had emphasized that the strategy is consistent, but has failed to provide a convincing explanation to Mimura.

Still, Edano, who wants to make the zero nuclear plant policy a major campaign issue at the next general election, has told his aides that he wants to make sure that the basic energy plan will be completed within this year.

"I'd like you to coordinate views among party members on the basic plan and pressure the panel to open deliberations," he recently told DPJ policymakers, but the policymakers did not take any action.

A DPJ legislator said he believes DPJ Policy Research Committee Chairman Goshi Hosono blocked the move.

"Hosono is skeptical of eliminating all nuclear plants because it could have negative impacts on the economy. So he apparently didn't negotiate with panel members to open deliberations," the legislator said.

Edano told a news conference on Oct. 19 that he will convene the subcommittee in the near future to deliberate on the basic plan. However, even if such a meeting is held, there is no prospect that discussions on the details of the plan will progress.

One of the panel members reacted coolly to the move.

"The party appears to be trying to incorporate a 'zero nuclear plant policy' into the basic plan as a kind of catch phrase for its election campaign. But it's impossible to work out the details of something that's unclear," the member said.

Speculation is spreading within the government that Mimura intends to boycott any panel meeting until the largest opposition Liberal Democratic Party regains control of the government following the next lower house election and the government resumes its pro-nuclear power policy. (By Susumu Maruyama and Yoshinori Ogura, Tokyo Business News Department)

October 27, 2012

## New signs help safety feeling

### **City in Shizuoka to show distances to Hamaoka nuclear plant on signs**

<http://mainichi.jp/english/english/newsselect/news/20121027p2a00m0na006000c.html>



The style of the signs to be erected is depicted in this image provided by the Fujieda Municipal Government.

SHIZUOKA -- The Shizuoka Prefecture city of Fujieda, which lies within 30 kilometers of Chubu Electric Power Co.'s Hamaoka Nuclear Power Plant, has announced it will erect signs next month to let people in various areas know how far away they are from the plant.

The municipal government plans to erect signs, each measuring 45 by 60 centimeters, in 60 locations. The placards will display the distance from the plant and how high above sea level each area is. City officials say it is the first time for signs showing the distance from the nuclear power plant to be set up.

About one-quarter of Fujieda lies within 30 kilometers from the plant, and the city hall is 29.1 kilometers away from the plant's No. 3 reactor. With the introduction of urgent protective action planning zones that have a radius of 30 kilometers from nuclear power plants, many residents have been asking how far away from the plant and how high above sea level various areas are. The city decided to install the signs to provide residents with accurate information and help them evacuate during a disaster.

The signs will be placed at the city hall, at all elementary and junior high schools and at JR Fujieda Station and other locations.

"It's a significant step in terms of local residents' peace of mind," Fujieda Mayor Shohei Kitamura said.

October 29, 2012

## Fault under Oi plant not active?

### Kansai Electric to report disputed fault under Oi plant not active

<http://mainichi.jp/english/english/newsselect/news/20121029p2g00m0dm064000c.html>

TSURUGA, Japan (Kyodo) -- Kansai Electric Power Co. plans to report to the government that it has not found data that could prove that a disputed fault running under its Oi nuclear power plant in Fukui Prefecture is active, company officials said Monday.

The interim report on the fault underneath the sole nuclear power plant operating in quake-prone Japan is expected to be submitted to the state as early as Wednesday. The Nuclear Regulation Authority plans to carry out an on-site inspection on Friday.

Since August, Kansai Electric has been conducting additional investigations into the fault called F-6, running north-south between the plant's Nos. 1-2 reactors and Nos. 3-4 reactors, through digging and boring surveys.

But it has so far not come up with results that would lead the company to change its current view that F-6 is not active, or data showing that it could move in tandem with other faults located on the periphery, the officials said.

Kansai Electric plans to compile a final report on the issue by the end of the year.

Utilities are not allowed to build reactors and other related facilities important for safe operation of reactors directly above active faults, defined as ones that have moved in the last 120,000 to 130,000 years under the current Japanese criteria.

An NRA member, however, has suggested broadening the definition of active faults to those that have moved in the last 400,000 years.

The planned NRA-led inspection could affect the fate of the plant's Nos. 3 and 4 reactors that the government approved for restarting earlier this year on the assumption that they were safe to operate.

### **Ohi plant operator: Seam may not be active fault**

[http://www3.nhk.or.jp/daily/english/20121029\\_02.html](http://www3.nhk.or.jp/daily/english/20121029_02.html)

An electric utility in western Japan will submit its interim report this week on whether the Ohi nuclear power station sits atop an active earthquake fault.

The Japanese government ordered Kansai Electric Power Company to conduct a geological survey at the nation's only on-line nuclear plant.

The company is expected to submit its report to the Nuclear Regulation Authority as early as Wednesday. It will say the underground seam beneath the plant may not be an active fault that could result in an earthquake.

The company began its assessment in August to determine whether an underground fissure at the site is an active fault.

National guidelines prohibit building major facilities of a nuclear plant on an active fault.

In its interim report, Kansai Electric says there's no evidence to counter a previous evaluation that concluded the seam is not an active fault.

But the nuclear authority is planning to conduct its own survey of the Ohi plant on November 2nd. If the underground seam is determined to be an active fault, the plant could be shut down.

October 30, 2012

## **Extremely confusing**

### **Nuclear simulations find local govts flat-footed**

<http://www.yomiuri.co.jp/dy/national/T121029003065.htm>

The Yomiuri Shimbun

Situated about 40 kilometers away from the Kashiwazaki-Kariwa nuclear plant, the city government of **Uonuma**, Niigata Prefecture, probably spent little time worrying about what to do if a major nuclear crisis were to break out at the plant--until the government released the results of its latest disaster simulations, that is.

"I'd never dreamed [radioactive substances] could reach as far away as here," Uonuma Deputy Mayor Taichi Nakagawa said after the Nuclear Regulation Authority's studies showed radiation could reach his city in the event of an accident at the plant run by Tokyo Electric Power Co.

Local officials in cities, towns and villages more than 30 kilometers away from nuclear power plants around the country expressed surprise at the results of the latest simulations, which were based on accident scenarios at four nuclear plants, including Kashiwazaki-Kariwa.

**The simulations showed high levels of radioactive substances could spread farther than 30 kilometers from nuclear plants, a distance that had previously been regarded as the limit for which disaster countermeasures needed to be in place.**

These municipalities, embarrassed at being caught unaware, will be required to designate priority areas for disaster planning and will be urged to reconsider evacuation plans.

As the Niigata prefectural government and municipalities in the prefecture began working on new disaster plans, the Uonuma city government was especially shocked, as it had recently decided to accept evacuees from within the 30-kilometer radius.

The government simulation indicated radioactive substances could reach central areas of the city.

"A study panel [of affected municipalities] will have to reexamine in a wider manner what responses need to be taken, and integrate its conclusions into regional disaster planning," Mayor Etsuko Odaira said.

Neighboring Tokamachi faces a similar situation. The city government had planned to have residents within 30 kilometers of the power plant first evacuate to other, what they thought were safer, parts of the city.

Only if the effects of the nuclear crisis spreads, the city plans to evacuate residents outside Tokamachi.



But since the latest simulation showed some areas outside the 30-kilometer radius could be affected in a nuclear accident, the city will have to reexamine its evacuation plans. "The city can't act on its own. **We need detailed guidance from the central government to move forward,**" one city official said

Revamping evacuation plans is only part of the problem. **Both Uonuma and Tokamachi produce the renowned rice brand Uonuma Koshihikari.**

An official of the Kita-Uonuma Japan Agriculture branch said: "We're worried about what will happen if a crisis were to break out. After we get good information, we'll inform farmers we work with and think about what needs to be done."

Kansai Electric Power Co.'s Oi nuclear plant in Oi, Fukui Prefecture--currently the nation's only operating nuclear plant--was one of the four power stations where radiation was predicted to spread beyond 30 kilometers.

The simulation showed that if large amounts of radioactive substances escaped from all four of its reactors, in the worst case contamination could reach Nantan, Kyoto Prefecture, which is 32.2 kilometers south of the plant.

Nantan has 2,100 residents in 850 households that live within 30 kilometers of the Oi plant, but the latest simulation added more to the list of those who would be potentially affected by a nuclear disaster.

The city government conducted an evacuation drill Oct. 21 to prepare for an accident at the Takahama nuclear power plant in Takahama, Fukui Prefecture, which is closer to the city than the Oi plant.

Since the city already has disaster plans in place for a contingency at the Takahama plant, a city official said the new simulation results would not affect their countermeasures much.

Nevertheless, an increase in the number of residents who have to evacuate would make the city's fiscal burden heavier. "Implementing our plans without aid from the central government would be difficult," the official said.

Officials from Fukui Prefecture and the town of Oi complained that the latest simulation did not take geographical features into consideration.

A prefectural disaster-prevention official said, "With only mechanical data like maps and numbers, we can't understand what the projections really mean."

Hiroshi Nakatsuka, speaker of the Oi town assembly, said: "Simply releasing projections on the spread of radioactive substances will only fuel people's fears. The authorities should present plans for larger-scale evacuations."

November 1, 2012

## New NRA guidelines

### **N-accident zones set at 30-km radius / NRA decides to use IAEA standards**

<http://www.yomiuri.co.jp/dy/national/T121031003759.htm>

The Yomiuri Shimbun

The Nuclear Regulation Authority on Wednesday issued new guidelines to establish 30-kilometer-radius zones in which intensive disaster-prevention measures will be taken in preparation for a serious nuclear accident.

About 4.8 million people in 135 municipalities are in these zones and will need particular protection under the new guidelines. Previously, only 45 municipalities were affected.

In a simulation released by the NRA on Oct. 24, the spread of radioactive substances from the nation's nuclear power plants was recorded beyond the 30-kilometer radius in some cases.

**The NRA, however, decided not to expand the key zones beyond the 30-kilometer mark, sticking to the standards of the International Atomic Energy Agency.**

Within this year, the NRA will set such standards as radiation levels to determine at what level it would be necessary to evacuate residents.

**Local governments, which could be affected in a nuclear plant disaster, will draw up disaster-prevention plans by the end of March.**

The new guidelines are mostly in line with a draft the authority presented on Oct. 3.

However, the NRA withdrew a plan to distribute stable iodine pills to households within 50 kilometers from nuclear plants. The pills are to prevent thyroid glands from internal exposure to radiation. The authority will reconsider how to distribute the pills and the dosage.

The plan was withdrawn because some local governments questioned the reasons behind distributing the pills over such a large area, and **the NRA itself felt it necessary to reexamine steps to prevent the pills from being used incorrectly and to determine the side effects.**

The NRA will first issue instructions on the use of the pills and then notify medical staff in affected areas.

It also emphasized that over the mid- and long-term, it was important to continue decontamination work to deal with the crisis at Fukushima No. 1 nuclear power plant and provide proper health care for nearby residents.

In its simulation of the spread of radioactive substances, radiation exposure levels reached 100 millisieverts in seven days beyond a radius of 30 kilometers from four nuclear power plants, including the Kashiwazaki-Kariwa plant in Niigata Prefecture.

The NRA said these results are for worst-case scenarios and are used only for reference.

After the onset of the crisis at the Fukushima plant after the devastating earthquake and tsunami on March 11, 2011, many inpatients died at Futaba Hospital in Okuma, Fukushima Prefecture, because evacuation was delayed.

Taking this lesson to heart, the NRA called for more effective steps by assuming all hospital patients should be evacuated.

Each local government affected will compile disaster-prevention plans based on the NRA's new guidelines, the simulation results and other data by the end of March.

Main points of new guidelines:

- **Zone of key areas for disaster-prevention measures is expanded to a 30-kilometer radius around nuclear power plants from the current radius of eight to 10 kilometers.**
- **Residents living within a five-kilometer radius will be asked to immediately evacuate when a severe nuclear accident is expected.**
- **Paying consideration to potential health effects on residents in areas affected by the crisis at the Fukushima No. 1 nuclear power plant, proper measures should be taken to care for them.**
- **Instructions for use of stable iodine pills will be decided by the NRA, which will notify relevant local medical staffs.**

### **Emergency areas tripled to 30 km around plants - Nuke regulator sets wider safety zones**

Kyodo

<http://www.japantimes.co.jp/text/nn20121101a1.html>

The Nuclear Regulation Authority set new guidelines Wednesday for fallout disaster mitigation measures, expanding the distance where special preparations are required to 30 km from atomic power plants.

While details need to be fleshed out, such as specific criteria for evacuation, the guidelines were revised to meet international standards and rewritten in plain language to be more easily understood, the NRA said. The NRA's predecessor was harshly criticized over its handling of the Fukushima crisis.

Based on the guidelines and other information provided by the NRA, local governments hosting nuclear plants and those on the periphery are expected to craft their own disaster mitigation plans and set the scope of the emergency zones by March.

"Compiling the guidelines is not the end of the work. . . . The guidelines will prove useful after (disaster mitigation) plans are created and drills are held," NRA Commissioner Kayoko Nakamura said, adding the guidelines should be constantly reviewed.

The existence of disaster mitigation plans is not a legal requirement when resuming operation of nuclear reactors, but NRA Chairman Shunichi Tanaka has said it will be difficult for reactors to be brought back online unless local governments devise plans in line with the new guidelines.

The most notable change is that emergency zones have been widened to a 30-km radius around each nuclear plant, from 10 km. A "precautionary action zone" extends about 5 km from a plant and residents will evacuate based on certain plant conditions before a radioactive release starts, while an "urgent protective action planning zone" covers a radius of about 30 km and residents will evacuate depending on radiation levels or other information.

Recently announced projections for the spread of radiation showed that points more than 30 km away from some nuclear plants could see radiation levels reach 100 millisieverts a week into a meltdown crisis, a level where evacuation is recommended. Tanaka has said 30 km is enough for emergency zones, but local governments may expand the zones further.

Due to the expansion of the zones, the number of prefectures that include such areas will increase to 21 from 15. The number of people who could be affected will total 4.8 million.

The NRA has to set criteria for starting evacuations and taking other protective action to enable swift decision-making, but the guidelines state it plans to establish them by the end of this year.

NRA Commissioner Toyoshi Fuketa stressed the need to hold substantial discussions on the issue, saying the criteria are "extremely important to make the guidelines workable."

Other issues that need to be studied include whether to distribute iodine tablets in advance to prevent residents from developing thyroid cancer.

November 2, 2012

## Myth of nuclear safety over

### **NRA guidelines presume accidents**

<http://www.yomiuri.co.jp/dy/national/T121101003165.htm>

Yuki Inamura and Yuki Koike / Yomiuri Shimbun Staff Writers

The new nuclear disaster management guidelines adopted by the Nuclear Regulation Authority on Wednesday are expected to serve as the foundation for measures to be taken in preparation for a possible nuclear disaster.

**The guidelines aim to restore the public's trust in the nation's nuclear authorities**, which was lost due to the poor handling of the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, by incorporating lessons learned from the disaster. However, there are still many obstacles ahead.

The new guidelines dispense with the myth of safety--the assumption a nuclear accident would never happen in this country--and assume instead that "a nuclear accident could happen," said NRA Chairman Shunichi Tanaka.

Tanaka and the other four NRA commissioners tried to make the guidelines easier to understand by minimizing the use of technical jargon and using unambiguous descriptions.

As a 20-kilometer no-entry zone was designated around the crippled Fukushima nuclear plant, the guidelines designate a 30-kilometer-radius zone around each plant as an Urgent Protective Action Planning Zone (UPZ), in which intensive disaster countermeasures will be taken in preparation for a nuclear crisis.

The UPZ zones were created by expanding the former Emergency Planning Zones (EPZ), which covered an eight- to 10-kilometer-radius area around nuclear plants.

The guidelines also designate a five-kilometer-radius Precautionary Action Zone (PAZ), in which all residents would be immediately evacuated after the outbreak of a nuclear crisis but before the release of radioactive materials in order to prevent serious health damage.

UPZ and PAZ are international standards set by the International Atomic Energy Agency in 2002 on the basis of nuclear crises such as the Three Mile Island incident in 1979 in the United States.

Measures to be taken in a UPZ, including distribution of iodine pills, staying indoors and evacuation, are aimed at minimizing serious health damage due to radiation.

The former EPZ zones were designated as priority areas for implementing disaster-response measures such as taking refuge indoors and evacuation on the assumption of a possible crisis situation at a nuclear plant.

Japan considered adopting the IAEA standards in 2006 at a working group of the now-defunct Nuclear Safety Commission. However, the idea was turned down by the Nuclear and Industrial Safety Agency--the NRA's predecessor, which said the changes "could give the public the impression that the present countermeasures are inadequate, which could increase anxiety among people."

Tanaka, however, has shown an enthusiastic attitude in fulfilling the NRA's role as an independent body by breaking with the past regulatory administration, which has been criticized as "a prisoner of the nuclear power businesses."

"We've made safety the top priority and will rebuild the public's trust," Tanaka said.

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Many issues left unresolved

Local governments that are compiling for the first time disaster management plans to prepare for a severe nuclear accident have complained the new guidelines alone are ineffective.

On Wednesday, the NRA listed the issues that still require consideration, among which are questions that directly affect the formation of local governments' disaster plans. One example is which radiation level determines the necessity to evacuate residents. Another is what standards should be used to decide on the use of stable iodine pills, which can protect thyroid glands from radiation damage. The NRA aims to resolve these remaining issues by the end of this year.

In particular, the vague evacuation criteria have led to several complaints from concerned local governments. It has yet to be decided who should issue the order to evacuate or seek shelter indoors, or at what stage of a severe nuclear accident the order should be given. One Fukui prefectural government official said, "It's impossible to draw up detailed evacuation plans using the new guidelines." Therefore, these governments are asking the NRA to decide the details of the criteria as soon as possible.

The evacuation issue is more serious for municipalities with larger populations.

In Ibaraki Prefecture, which hosts Japan Atomic Power Co.'s Tokai No. 2 Power Station, the nuclear plant closest to the Tokyo metropolitan area, five municipalities and about 220,000 people were expected to be affected by a severe nuclear accident under the previous system. Under the new guidelines, the numbers jumped to 14 municipalities and about 930,000 people.

The prefecture's current disaster management plan includes buses as the primary means of evacuation. However, even if all of about 7,000 buses currently in the prefecture were used in the case of a severe nuclear disaster, they would only carry about 240,000 people.

"It's problematic if the NRA only decides on an outline and then leaves the details up to the respective local governments," an official of the Ibaraki prefectural government said.

The NRA is also set to determine the necessity of stable iodine pills. While the central government's involvement in this measure is clear, it has not yet been decided who would issue instructions for taking the pills.

Additionally, other issues still need to be resolved, such as who would be responsible if a person experienced side effects from the pills.

Local governments are asking the NRA to create standards on how to use the pills, including ways of storing them and how to administer them to affected people. They are also seeking the establishment of a system to exempt them from responsibility for side effects.

In regard to the reactivation of suspended nuclear power plants, NRA Chairman Shunichi Tanaka said, "It will be difficult to reactivate suspended nuclear power plants without effective local disaster management plans or the approval of residents."

In order to obtain the approval of local residents, it will be necessary to show sufficient and convincing safety measures in disaster management plans, which should be drawn up based on the new guidelines.

The number of municipalities designated as parts of key zones for disaster-prevention measures increased to 135 in 21 prefectures from the previous 45 municipalities in 15 prefectures. Also, the number of potentially affected people increased sevenfold to about 4.8 million.

As the areas and number of people that could be affected by an accident at a nuclear power plant increase, it likely will become more difficult to obtain residents' approval for reactivating suspended facilities.

Nevertheless, the shortest path to reactivation is the creation of disaster management plans that are in accordance with the new guidelines.



## Division of roles unclear

### **NRA official calls for legislation on nuclear plant safety agreements**

<http://mainichi.jp/english/english/newsselect/news/20121102p2a00m0na014000c.html>

Nuclear Regulation Authority (NRA) Commissioner Kenzo Oshima has pointed to the need to consider legislation on nuclear power plant safety agreements that power companies and local municipalities hosting such facilities sign on a voluntary basis.

"The division of roles between the national government, prefectural governments and municipalities in nuclear power policy isn't provided for by any Japanese law and is unclear," Oshima, former ambassador to the United Nations, pointed out in an exclusive interview with the Mainichi Shimbun.

He then cited an example in France, where local bodies hosting nuclear plants are involved in atomic power policy under a 2006 law, and said, "The example is worth considering even though it remains to be seen whether a similar system will take root in Japan."

Oshima then pointed out possible harmful effects of nuclear plant safety accords. "In Japan, publicly elected governors and mayors have a big say in nuclear policy. Therefore, requirements for local communities' consent on operations at nuclear plants they host could undermine the national government's energy policy."

Nuclear plant safety agreements, which provide for rules on local communities' consent on operations at nuclear power stations they host, are gentlemen's agreements without legal basis.

A growing number of municipalities are expected to demand that they sign such accords with utilities since a zone where preparations for nuclear disasters are required will be expanded from 8-10 kilometers from such power stations to 30 kilometers under new guidelines for nuclear disaster countermeasures. Such moves could be a hurdle for the reactivation of idled nuclear reactors.

## Oi Fault : Active or not ?

### **Nuclear regulator researches Ohi plant**

[http://www3.nhk.or.jp/daily/english/20121102\\_32.html](http://www3.nhk.or.jp/daily/english/20121102_32.html)

Japan's Nuclear Regulation Authority has surveyed the country's only operating nuclear power plant to determine whether a seam under the facility is an active fault.

The authority says it may ask the Ohi plant's operator -- Kansai Electric Power Company -- to suspend operations, depending on the survey results.

Its member Kunihiro Shimazaki and 4 other outside experts visited the plant on the Sea of Japan coast in Fukui Prefecture on Friday.

They were first briefed by Kansai Electric about what it has found in its own survey.

Later, the team took samples from under the northern part of the plant's premises.

In the afternoon, they examined a column of soil layers taken from ground in and around the seam to check its hardness and other properties.

After the inspection, Shimazaki said the team learned a lot and that the agency is to hold a meeting on Sunday to assess the results. He also said an additional survey may take place if necessary.

Nuclear plant operators in Japan are not allowed to build reactors or other facilities crucial for safe operation of reactors directly above active faults. The Ohi plant has a water channel above the seam to take in seawater for cooling reactors.

Kansai Electric submitted an interim report of its own survey to the agency on Wednesday. It says the fissure is not an active fault.

The regulator plans to conduct similar surveys at five other nuclear plants across Japan in the wake of the massive earthquake and tsunami in March last year. The disaster devastated the Fukushima Daiichi nuclear power plant in northeastern Japan.

## **Nuclear regulatory body starts studying disputed fault at Oi plant**

<http://mainichi.jp/english/english/newsselect/news/20121102p2g00m0dm032000c.html>

Nuclear Regulation Authority Commissioner Kunihiro Shimazaki and other members of the government body examine layers of earth in a trench at the Oi Nuclear Power Plant in Oi, Fukui Prefecture, on Nov. 2. (Mainichi)

TOKYO (Kyodo) -- Japan's nuclear regulatory authority on Friday started a one-day investigation at Kansai Electric Power Co.'s Oi nuclear power plant in Fukui Prefecture to check whether a disputed fault running underneath it should be viewed as active.

Depending on the outcome of the investigation, the sole operating plant in the quake-prone country could be asked to shut down, just months after two of its reactors were allowed in July to restart having cleared a safety screening process carried out by the Nuclear Regulation Authority's predecessor.

It is the first time for the NRA to conduct an on-site inspection of a nuclear plant following its establishment in September.

At the government's request, Kansai Electric is further studying the F-6 fault, which runs north-south between the plant's Nos. 1-2 reactors and Nos. 3-4 reactors. But it has said that it has so far not found data suggesting movements in the last 120,000 to 130,000 years -- the current definition of an active fault in Japan.

The NRA, however, plans to make its own judgment based on Friday's investigation, which is being carried out by a team consisting of NRA commissioner Kunihiro Shimazaki and four other experts selected from outside the regulatory body.

The experts include Toyo University professor Mitsuhiro Watanabe, who has highlighted the risk posed by the F-6 fault, where a zone of crushed rocks has been found in bedrocks.

The shattered zone in question will not trigger an earthquake, but it is feared it could move together with active faults near the plants' premises and damage a water channel that would be used to take in seawater to cool reactors in the event of an emergency.

Utilities are not allowed to build reactors and other related facilities important for safe operation of reactors directly above active faults.

Prior to the investigation, NRA Chairman Shunichi Tanaka has said that, if the F-6 is determined to be an active fault, or strongly suspected to be, the authority would ask for the suspension of the currently operating Nos. 3 and 4 reactors.

Public concerns remain strong over the safety of nuclear power in the wake of the nuclear crisis at Tokyo Electric Power Co.'s Fukushima Daiichi plant last year, and the NRA is in the process of devising new safety standards for reactors.

The NRA-led investigation team is expected to meet Sunday to discuss the outcome of the on-site inspection.

The regulators also plan to implement similar investigations at five other nuclear facilities, including Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture and Kansai Electric's Mihama plant in Fukui.

November 3, 2012

### **Watchdog inspectors divided on fault activity at Oi nuclear plant site**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201211030057>

The government's nuclear industry watchdog on Nov. 2 inspected a geological fault line at the site of the Oi nuclear power plant in Fukui Prefecture, which some experts suspect could open up in a future earthquake.

The fault in question, called the "F-6 fracture zone," cuts across the Oi plant site in a north-south direction between the No. 2 and No. 3 reactors.

The Nuclear Regulation Authority has not offered an opinion on the possible risk as members of the survey team remained divided on the issue.

It is set to meet Nov. 4 to discuss the matter further after Kunihiro Shimazaki, the agency's deputy chairman, conducts his own assessment.

"Requesting additional surveys is one option," he said.

Experts have expressed concern that slippage of an active fault near the Oi plant could induce movement along the F-6 fracture zone, with catastrophic results.

At the behest of the Nuclear and Industrial Safety Agency, the NRA's predecessor, Kansai Electric Power Co., the Oi plant operator, has been doing additional surveys since August. These have included work to expose geological formations.

KEPCO on Oct. 31 submitted an interim report to the NRA, saying it had so far found no data to contradict its previous assessment that the F-6 fracture zone is inactive.

It will issue a final report in December.

Four outside experts joined Shimazaki during the NRA's on-site fault survey on Nov. 2, where they inspected fault outcrops at two sites where KEPCO exposed geological formations.

The team members offered an array of opinions on the likelihood of fault activity.

Norio Shigematsu, a senior research scientist at the National Institute of Advanced Industrial Science and Technology, said: "There was little evidence that geological formations had shifted because of the fault. I'm not able to jump to an immediate conclusion."

But Mitsuhsa Watanabe, a professor of geomorphology at Toyo University, said there was clear evidence that geological formations had shifted, but at what period in the past he could not say.

Daisuke Hirouchi, an associate professor of geography at Shinshu University, and Atsumasa Okada, a professor of active fault studies at Ritsumeikan University, both said they were unable to assess the activity of the fault until they knew more about when the fault shifted.

Geological time is deemed relevant because the government's current nuclear reactor construction guidelines define active faults as those that have shifted during the past 120,000 to 130,000 years. Thus, the conventional wisdom is that an active fault that slid recently may move again in the future.

Shimazaki has said the definition of active faults should be broadened to include those that have shifted during the past 400,000 years.

Experts are hard-pressed to identify when fault movements occurred, partly because of an inherent difficulty in assessing geological faults and a dearth of evidence.

When KEPCO built the Oi plant, it stripped off geological formations that would have helped to identify when the last fault activity occurred. A lack of evidential materials and photographs of the geological formations means that a re-examination of controversial sites is no longer possible as pipes were embedded in the bedrock.

An "emergency water intake channel," a vital part of the facility that is designed to receive seawater to cool down diesel generators and other emergency equipment, runs directly above the F-6 fracture zone.

The government's guideline on building nuclear facilities to withstand earthquakes says no key component of a plant should be built directly above an active fault.

NRA Chairman Shunichi Tanaka has said he will ask KEPCO to shut down the Oi plant if the fault is considered to be active.

### **Regulators study disputed fault at Oi nuke plant**

<http://www.japantimes.co.jp/text/nn20121103a6.html>

Kyodo

The Nuclear Regulation Authority conducted a one-day investigation Friday at the Oi nuclear power plant in Fukui Prefecture to check whether a disputed fault running underneath it should be viewed as active.

**Less than solid ground? Inspectors from the Nuclear Regulation Authority on Friday check the geological stratum at Kansai Electric's Oi nuclear plant in Fukui Prefecture. KYODO**



Depending on the outcome of the investigation, Japan's only operating nuclear plant could be told to shut down, just months after two of its reactors were allowed to restart.

It is the first time the NRA, established in September, has conducted an on-site inspection at a nuclear plant.

At the government's request, Kansai Electric Power Co. is further studying the F-6 fault, which runs north to south, separating the plant's reactors 1 and 2 from units 3 and 4.

Kepeco has said it has yet to find data suggesting movements in the last 120,000 to 130,000 years, the current definition of an active fault in Japan.

The NRA plans to make its own judgment based on Friday's check, which was carried out by a team consisting of NRA Commissioner Kunihiko Shimazaki and four other experts selected from outside the authority.

They include Toyo University professor Mitsuhisa Watanabe, who has highlighted the risk posed by the F-6 fault, where a zone of crushed rocks has been found in the bedrock.

The shattered zone will not trigger an earthquake, but it is feared it could move together with active faults near the plant and damage a water channel that would be used to take in seawater to cool the reactors in the event of an emergency.

Utilities are not allowed to build reactors and other related facilities important for safe operation of reactors directly above active faults.

Prior to the investigation, NRA Chairman Shunichi Tanaka said that if F-6 is determined to be active, or if it is strongly suspected, the authority would call for the currently operating reactors be shut down.

The investigation team is expected to meet Sunday to discuss the outcome of the on-site inspection. The regulators plan to conduct similar investigations at five other nuclear facilities, including Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture and Kepeco's Mihama plant in Fukui.

November 4, 2012

## No decision on Oi fault yet

### Decision on Japan nuke plant fault line postponed

THE ASSOCIATED PRESS

Experts have postponed a decision on whether a fault line underneath Japan's only operating nuclear power plant is active or what to do with the facility.

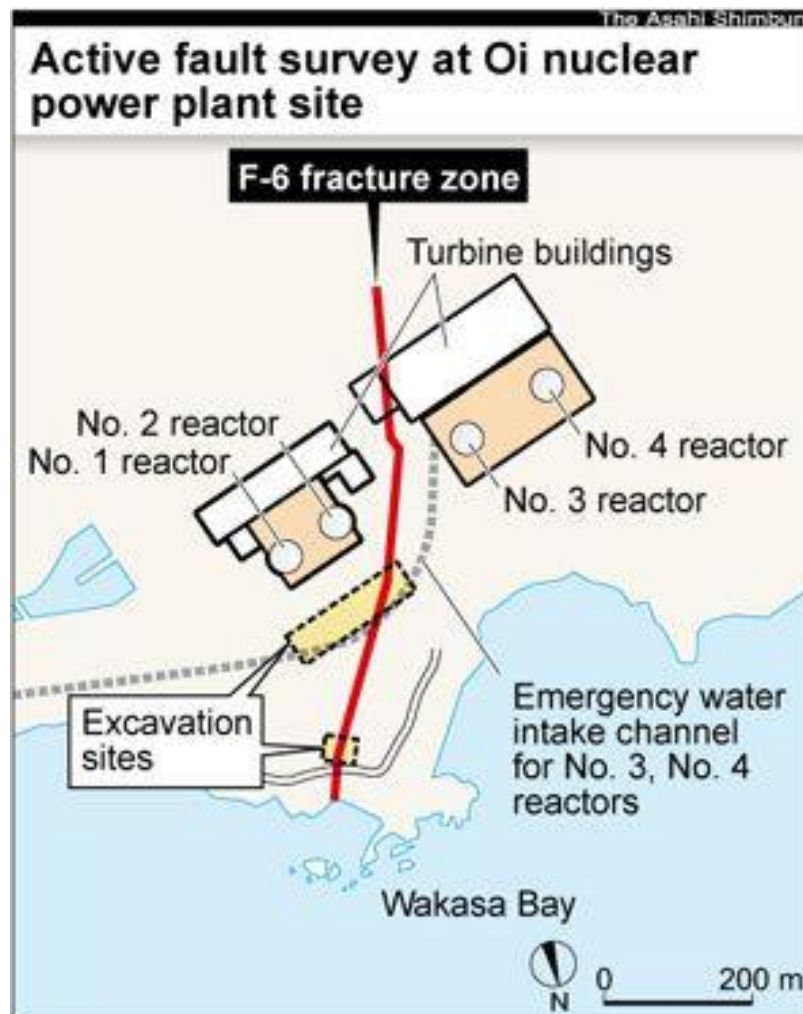


A five-member team commissioned by the Nuclear Regulation Agency inspected the Oi nuclear power plant in western Japan last week to examine a suspected fault line there.

Two of Oi's four reactors resumed operation in July for the first time since last year's nuclear crisis triggered by a quake and tsunami that hit other reactors in Fukushima No. 1 nuclear power plant in Fukushima Prefecture.

The experts agreed on Nov. 4 that part of Oi's underground structure slid as far back as 125,000 years ago but couldn't tell if it was because of an active fault line. They will meet again this week.

Chief regulator Shunichi Tanaka has suggested a plant closure if the fault line is judged active.



## 400,000 years?

### **Stricter standards for nuclear sites**

<http://www.japantimes.co.jp/text/ed20121104a1.html>

The Nuclear Regulatory Authority has broadened the definition of active geological faults that is used in the review of the safety of nuclear power plants. Until this point, faults that have shifted in the past 120,000 to 130,000 years have been regarded as active.

Now the NRA says that faults that have shifted at least once in the past 400,000 years should be labeled as active. This new definition will be incorporated into the NRA's new post-Fukushima safety standards, which are expected to go into force next July.

This change strengthens one of the main pillars of nuclear safety standards. Even under current standards it is prohibited to build reactors and other critical nuclear facilities on active fault lines. Given how quake-prone Japan is, the NRA's broadening of the definition of active faults is a welcome step in the right direction.

The NRA's new definition of active faults will likely result in significant changes. It will now be necessary to adopt new assumptions concerning future large earthquakes and to reinforce the structures of nuclear power plants. Furthermore, plants that are found to be located on active faults will be subject to calls for decommissioning.

On the basis of the new definition, an NRA team headed by Mr. Kunihiro Shimazaki, a seismologist and professor emeritus at the University of Tokyo who serves as the NRA's deputy chairman, has begun to conduct on-site examinations of the geological characteristics of the sites of several nuclear power stations, including Kansai Electric Power Co.'s Oi plant, Japan Atomic Power Co.'s Tsuruga plant, Kepco's Mihama plant and the Japan Atomic Energy Agency's fast-breeder reactor Monju, all in Fukui Prefecture, Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture, and Tohoku Electric Power Co.'s Higashidori plant in Aomori Prefecture.

In the past, experts took part in on-site examinations under the now-defunct Nuclear and Industrial Safety Agency of the trade and industry ministry, but bureaucrats made the final judgments. It is hoped that this time final decisions will reflect the experts' views.

It is important for the NRA to study the geological characteristics in and around the sites of nuclear plants from scratch, free from the influence of past examinations carried out under NISA. Toward this end, the NRA has excluded experts who took part in geological examinations under NISA. This is a reasonable step. The NRA should also consider expanding the scope of the examinations if other experts or even ordinary citizens raise suspicions that active fault lines exist below or near other nuclear plants.

NRA chairman Shunichi Tanaka said if nuclear plants are judged "black" or "strong gray" in terms of their proximity to an active fault line, the NRA will decide to halt their operation. From the viewpoint that priority should be given to ensuring public safety, this policy should be strictly enforced.

## Oi fault definitely active, says Watanabe

### Panel at odds over fault at Oi nuke plant

<http://www.japantimes.co.jp/text/nn20121104x2.html>

Kyodo

A fault running under the Oi nuclear plant in Fukui Prefecture is definitely active, an expert on a Nuclear Regulation Authority panel investigating the compound's safety said Sunday, as other members continued to debate the potential danger.

Toyo University professor Mitsuhsa Watanabe is calling for the immediate halt of two reactors at the plant, the only nuclear facility reactivated since the Fukushima disaster last year, arguing evidence points to an active fault.

"It's certain there is an active fault. Operations should be stopped and another investigation should be conducted" at the Oi plant, Watanabe said.

But Norio Shigematsu, a researcher at the National Institute of Advanced Industrial Science and Technology, cautioned that the panel should not reach any conclusions until experts on landslides are consulted.

The panel ended its session Sunday without reaching a final decision.

The future of Japan's nuclear policy depends on whether the panel concludes the fault is active. Many activists have called for an immediate shutdown of the Oi reactors, but the government has so far rejected their demands.

While panel members are in agreement that a fault runs beneath key water pipe equipment for the No. 3 and 4 reactors, which are currently in operation, they are examining photos of soil samples taken from the complex to determine whether it is active.

Panel head Kunihiro Shimazaki, a professor emeritus at the University of Tokyo, said that if necessary, its members may ask operator Kansai Electric Power Co. to conduct another investigation into the fault before drawing a conclusion.

November 6, 2012

## So, is it safe or not?

### **Experts split over Oi plant fault / Inability to agree raises questions over whether reactors are safe**

<http://www.yomiuri.co.jp/dy/national/T121105003218.htm>

The Yomiuri Shimbun

Experts remain divided over whether an active fault runs under Kansai Electric Power Co.'s Oi nuclear power plant in Fukui Prefecture, raising questions about whether it is safe to continue operating two reactors at the plant.

On Friday, outside experts participated in the Nuclear Regulation Authority's inspection of the No. 3 and No. 4 reactors, currently the only active reactors in the country. The experts were unable to agree at a meeting held Sunday to assess the results and determine whether a crush zone underneath the plant constitutes an active fault.

The NRA, which was inaugurated in September to revamp the country's nuclear regulatory framework, decided to hold another meeting Wednesday.

The inspection was the NRA's first survey of the area beneath a nuclear plant. It was held after the now-defunct Nuclear and Industrial Safety Agency, the nuclear authority's predecessor, told Kansai Electric in July to again look into a crush zone, known as F-6, running directly underneath an emergency water intake channel for reactors at the Oi plant.

The agency made the request to the power utility during the course of reviewing the assessment of faults under nuclear plants around the nation after the Great East Japan Earthquake.

The agency claimed data on geographical features was not sufficient to prove the crush zone beneath the Oi plant is not an active fault.

At the end of October, Kansai Electric reiterated in an interim report to the government there is no data suggesting the crush zone is an active fault. In the report, Kansai Electric said traces of F-6 could not be confirmed at a trench made near the beach to conduct the fault survey, and that the crush zone might be shorter than expected.

This is why the discovery in the same trench, by a team of experts sent by the NRA, of a trace of displaced layers that could have been caused by the movement of an active fault, came as an unexpected development.

In particular, Mitsuhsa Watanabe, a professor at Toyo University, asserted the displacement of layers at the location clearly suggests movement of the fault in the period up to 120,000 to 130,000 years ago.

Watanabe, who had raised questions about the crush zone, also said Kansai Electric was wrong in its projection of the location of F-6. "The active fault we confirmed is the real F-6," Watanabe said.

Daisuke Hirouchi, associate professor at Shinshu University, said Watanabe's interpretation of inspection results is consistent.

But Atsumasa Okada, a professor at Ritsumeikan University, was cautious in the interpretation of the survey results and said such displacement of layers can be caused by landslides and other factors.

Norio Shigematsu, a senior researcher at the National Institute of Advanced Industrial Science and Technology, said the direction of forces acting on bedrock in the area did not match the direction the fault is likely to take.

This difference in opinion is due to the **difficulty in determining by mere inspection of displacement traces whether layers were moved by an earthquake.**

The same traces could result from the sudden breakup of bedrock or more incremental moves due to events such as landslides.

**The location and shape of the fault will need to be examined in detail at various spots before drawing a final conclusion.**

Under guidelines for earthquake resistance of nuclear plants, faults are considered active if they have moved in the last 120,000 to 130,000 years.

However, according to the government's Headquarters for Earthquake Research Promotion, which calculates earthquake probability, faults are considered active if they have experienced movement within the past several hundred thousand years.

November 6, 2012

## Japanese cities & storms

### Japan's cities vulnerable to storms

<http://www.japantimes.co.jp/text/ed20121106a2.html>

The shocking photos and reports of superstorm Sandy, which struck America's east coast last week, were an important reminder that Japan's coastal cities could suffer a similar fate. According to a report from the Organization for Economic Cooperation and Development, many Asian mega-cities remain highly vulnerable to such storms. In that survey, New York City ranked 17th for risks from storms, while Tokyo ranked 19th overall.

Japan's largest cities have dense populations and high concentrations of assets in coastal areas. In terms of assets exposed, Osaka-Kobe, Tokyo (including Chiba and Yokohama) and Nagoya are among the top 10 vulnerable cities in the world. That ranking is partly due to the relatively higher building costs and land values compared with cities in developing countries; however, damage from storms would be higher as well.

The exposure of the population in Japanese port cities to potential wind damage is extremely high. Tokyo ranks highest in the world for exposure to potential wind damage, with Osaka-Kobe in sixth place.

These risks are not likely to decrease. Climate specialists note that changing conditions make it more likely that extreme weather will continue. Sea levels are rising and the rise in average temperature of the oceans increases the severity of storms.

Warmer water and warmer air combine to fuel hurricanes and form conditions that make storms more severe. The season for hurricanes is starting earlier and lasting longer.

Japanese cities have a reasonably high degree of preparation compared with other Asian cities. But the Tohoku disasters of March 11, 2011, clearly demonstrated that better preparation can save more lives. Even though superstorms like last week's Sandy are considered "once in a hundred years" events, Japan's central government and local governments in coastal areas still need to increase preparedness in the short run and urban planning in the long run.

Japanese buildings, particularly older ones near coasts, need inspection and infrastructure that citizens depend on during typhoons needs regular upgrading. New buildings constructed in vulnerable coastal areas should be made to withstand the most fierce typhoons. Post-storm management is also essential since the difference in damage between short-term flooding and long-term flooding, for example, is immense.

Although it is impossible to predict when, or if, a superstorm like Sandy will hit Japan, investment in protective measures should still be undertaken to ensure the safety of Japan's population.

## **"Vague discussions" will not reassure population**

### **Fault check at Oi plant hit for lack of findings**

<http://www.japantimes.co.jp/text/nn20121106a9.html>

By ERIC JOHNSTON

Staff writer

OSAKA — The failure of a Nuclear Regulation Authority panel to conclude Sunday whether a fault underneath the Oi nuclear plant in Fukui Prefecture is active has created concern and alarm in Fukui and neighboring prefectures.

Panel head Kunihiro Shimazaki told reporters the fault dates from around 125,000 years ago and it is not a contradiction to think of it as an active fault. Under current guidelines, the government defines an active fault as one that has shifted during the last 120,000 to 130,000 years.

The panel will convene again Wednesday because it wants to hear from Kansai Electric Power Co. and discuss with experts the possibilities of landslides before reaching a final decision. This prompted criticism and concern from local officials.

"It's critical to carry out the investigation and render a decision that everyone can understand, one based on objective data and scientific proof, but that's not what we have. The members shouldn't have these kinds of vague discussions," Hiroshi Sakuramoto, a Fukui prefectural official in charge of safety, said Sunday evening.

"A fair and impartial investigation is directly tied to safety and peace of mind," said Oi Mayor Shinobu Tokioka, who strongly supported restarting the Kepco plant's reactors 3 and 4.

Concern about what might happen in the event the fault triggers an earthquake underneath the plant is especially strong in neighboring Kyoto and Shiga prefectures. The city of Kyoto has designated evacuation areas that can hold up to 160,000 people. But a large quake could trigger a need to evacuate as many as 300,000 people.

Towns in Kyoto Prefecture have held evacuation drills in the event of a meltdown crisis in Fukui. On Sunday, officials in Kyotanba, parts of which are within 30 km of the Oi plant, staged an emergency evacuation drill.

November 7, 2012



## More errors found in Japan nuclear regulatory body's accident projections

Kyodo

<http://www.japantimes.co.jp/text/nn20121107b6.html>

The Nuclear Regulation Authority said Tuesday it has found more errors in its recently announced projections for the spread of radiation from reactors in the event of a severe accident.

The errors surfaced about a week after the NRA had corrected simulation results for six nuclear power plants and Chairman Shunichi Tanaka had instructed the secretariat staff to make sure they would prevent a recurrence.

The latest errors were found in the projections for the Kyushu Electric Power Co. Genkai power plant in Saga Prefecture, and Sendai plant in Kagoshima Prefecture. The NRA secretariat said wind direction data submitted by Kyushu Electric were in error.

Spokesman Hideka Morimoto, however, said **the blame is on the secretariat and the Japan Nuclear Energy Safety Organization, which were tasked with creating the projections, because they relied on utilities to secure firsthand information and did not have sufficient checking functions on their own.**

In Fukuoka, Kyushu Electric Executive Vice President Masanao Chinzei had to hold the obligatory news conference.

"We sincerely apologize for causing trouble" by providing the erroneous data, Chinzei said.

The simulation results were announced Oct. 24 to provide references for local governments to expand areas that should be subject to special preparations against nuclear disasters to 30 km from a facility.

**It is the third time the NRA corrected the results.** The authority revised part of its initial presentations immediately after announcing them Oct. 24.

As the current simulation results have limitations in that they do not take into account geological formations in areas around the plants, Morimoto said Tanaka also ordered the secretariat staff to swiftly develop an "advanced" version.

**The NRA hopes to provide new projections that will be useful for local governments to craft nuclear disaster mitigation plans by March,** Morimoto added.

November 8, 2012

## NRA to correct more of its estimates - for the third time

### NRA to fix radiation spread estimates again

<http://www.yomiuri.co.jp/dy/national/T121107004925.htm>

Jiji Press

The Nuclear Regulation Authority has said it will correct estimates on how far radioactive materials would spread if a severe accident happened at a nuclear power plant.

Misleading presentations by Kyushu Electric Power Co. led to **wrong use of wind direction data in estimates for the firm's Genkai nuclear power plant in Saga Prefecture and Sendai plant in Kagoshima Prefecture**, the nuclear regulatory commission said.

The commission will correct its estimates, first released in late October, for the third time. The corrected version will be released Thursday.

The NRA secretariat said the directions in which radioactive materials are expected to spread from the two nuclear plants were 180 degrees off in the opposite direction.

## Oi fault - Not enough data?

### Experts to gather more data before conclusion on faults under Oi plant

<http://mainichi.jp/english/english/newsselect/news/20121108p2g00m0dm029000c.html>

TOKYO (Kyodo) -- A team of experts investigating the Oi nuclear power station in western Japan decided Wednesday to carry out further field surveys and collect more data to determine whether active faults are running under the country's only operating atomic power plant.

"It's desirable for the five members to reach a conclusion by consensus," Kunihiro Shimazaki, a commissioner of Japan's nuclear regulatory body and head of the investigation team, said at a meeting of the team, attributing the failure to reach a conclusion to a lack of sufficient data.

If the experts conclude there is an active fault that could undermine the safety of the plant, the Nuclear Regulation Authority is expected to ask plant operator Kansai Electric Power Co. to suspend the two operating reactors at the Oi plant in Fukui Prefecture.

The focus of the discussions has been on displacements found at trench walls in the northern part of the plant's premises during an on-site investigation last Friday, with team members **divided over whether to view them as resulting from active faults or a landslide.**

Toyo University professor Mitsuhiro Watanabe has said the displacements can be considered active faults and that they may be an extension of a fault called F-6, a zone of crushed rocks which runs north-south between the plant's Nos. 1-2 reactors and Nos. 3-4 reactors.

Watanabe was chosen as the member of the team because he pointed out in June that the F-6 could move together with active faults outside the plant and damage a water channel that would be used to take in seawater to cool reactors in the event of an emergency.

He expressed concern during the meeting that Shimazaki's decision to continue further study may make the investigation process drag on. "I thought this panel's mission is to decide, with a sense of speed, whether there is no danger in terms of active faults, given that the Oi plant is actually operating," he said.

But Shimazaki insisted the members would be able to reach a consensus as long as there is "proper data." To gather more data, the seismologist said there is a need to dig deeper into the trench in question and excavate a new trench closer to a point where the F-6 is said to have been confirmed when the utility sought to build the Nos. 3 and 4 reactors.

"If this (F-6) fault shows up, it will become very clear on how it would affect which part of the plant," Shimazaki said.

But the investigation may take time, with the length of the new trench expected to reach up to 300 meters.

The next meeting of the team will be convened when one or more members find an important "observed fact" as a result of the additional research, Shimazaki said.

During the meeting, Kansai Electric officials reported to the experts they have not confirmed in the F-6 fault features that are usually seen in active faults.

The Nos. 3 and 4 reactors resumed operation in July after all of the country's reactors went offline amid strong public concern over the safety of nuclear power in the wake of Tokyo Electric Power Co's Fukushima Daiichi plant disaster last year.

The two reactors have remained online since, with the Nuclear Regulation Authority's predecessor saying the fault is unlikely to be active. **The body was launched in September as part of the country's efforts to enhance nuclear regulations.**

In quake-prone Japan, utilities are not allowed to build reactors and other facilities important for the safe operation of reactors directly above active faults.

### **NRA to continue Oi fault probe**

<http://www.japantimes.co.jp/text/nn20121108a6.html>

By REIJI YOSHIDA  
Staff writer

A panel of experts under the Nuclear Regulation Authority decided Wednesday to continue examining a fault running under the Oi nuclear plant in Fukui Prefecture, rejecting calls by one of its members that the facility immediately cease operations.

It was the panel's second meeting since its members conducted an on-site geological survey Nov. 2 at the Oi complex, the only nuclear plant to be reactivated following the Fukushima disaster last year. As part of the survey, they examined the F-6 crushing belt fault that runs directly below critical pipes carrying coolant water for reactors 3 and 4 during emergencies.

The two units were restarted in July amid a public outcry.

If the fault is considered active, the NRA is likely to demand that all operations at the Oi plant immediately halt. However, the panel failed to reach a conclusion Wednesday.

At its meeting, Kansai Electric Power Co., which operates the Oi facility, issued a new 66-page interim report concluding that geological traces and analysis suggest the fault is not active and has not moved recently.

But Toyo University professor and panel member Mitsuhsa Watanabe argued the geological samplings are insufficient to support Kepco's interim conclusion.

Watanabe, who believes the fault is active and potentially highly dangerous, demanded the panel curtail its technical discussions, but its deputy chairman, Kunihiro Shimazaki, declared it would hold further sessions, saying, "I don't think we have reached any conclusion for now."

Meanwhile, panel member Daisuke Hirouchi, an associate professor at Shinshu University, said he would prefer to conduct another on-site survey before arriving at a definitive conclusion.

The panel's ultimate decision is likely to massively influence Japan's atomic and basic energy policies, since strong antinuclear sentiment among the public has prevented the government from firing up any more reactors since the Oi units, and because crippling supply shortages are feared in the Kansai region if those two reactors were to be shut down.

Kepco claims it won't be able to meet projected peak power demand if the Oi reactors are idled.

## Countries better prepared for disasters, says UN

### Amano: Nuclear power safer than before 3/11

Kyodo

<http://www.japantimes.co.jp/text/nn20121108f3.html>

NEW YORK — The head of the U.N. nuclear watchdog says nuclear power is safer than before the 2011 meltdown crisis started at the Fukushima No. 1 atomic plant, now that countries have upped preparedness for natural disasters.

Yukiya Amano, director general of the International Atomic Energy Agency, said in a statement to a U.N. General Assembly meeting Monday that "measures have been taken to improve protection against extreme hazards such as earthquakes and tsunami."

Amano said the IAEA projects a steady increase in nuclear power plants in the next 20 years, with China, India, South Korea and Russia having planned "significant expansions" of their atomic programs.

On North Korea's nuclear arms program, the IAEA chief said he remains "seriously concerned" and called Pyongyang's statements about uranium enrichment activities "deeply troubling."

Pyongyang's delegation criticized the IAEA as siding with "the U.S. hostilities toward" North Korea and "following blindly" U.S. policy against the North.

It said North Korea, "as everybody knows, has emerged as a full-fledged . . . nuclear weapon state." "We would like to be sure that there will be no more errors"

November 9, 2012

## **NRA to probe flawed nuke fallout forecasts**

### **Data-input snafu stops watchdog from releasing 'corrections'**

<http://www.japantimes.co.jp/text/nn20121109x2.html>

By KAZUAKI NAGATA  
Staff writer

The Nuclear Regulation Authority said Friday it will scrutinize all simulations for the potential spread of radioactive materials from atomic power plants after it was found that the projections were riddled with mistakes.

"We would like to be sure that there will be no more errors, so the simulations are being thoroughly checked again," NRA spokesman Hideka Morimoto told a news conference.

More mistakes were announced Tuesday. The NRA said errors were found in wind direction data for Kyushu Electric Power Co.'s Genkai power plant in Saga Prefecture and Sendai plant in Kagoshima Prefecture.

The fallout simulations are based on a severe accident similar to the disaster at the Fukushima No. 1 plant. The projections indicate what areas would experience fallout of up to 100 millisieverts of radiation in the first seven days of such a crisis.

The NRA planned to disclose the corrected projections Thursday but canceled after the Japan Nuclear Energy Safety Organization (JNES), the body that drafted the simulations, announced there may be further data-input errors in the corrected version.

Morimoto said the NRA's secretariat has questioned the capability of the JNES team that drafted the projections, as inputting data should be a very basic task. It ordered the JNES to thoroughly review all of the projections in collaboration with the NRA.

He added it was still unclear when the NRA will be able to release the corrected results.

The projections were drafted based on annual meteorological data, including prevailing wind directions and speeds and rainfall at every nuclear plant in Japan.

Exposure to 100 millisieverts would raise the lifetime risk of dying of cancer by 0.5 percent, according to the International Commission on Radiological Protection, a group of radiation experts.

The simulations were first disclosed Oct. 24 as references for local governments to identify areas in need of special attention when drafting disaster prevention plans.

Five days later, the NRA said azimuth data were erroneously entered for some of the plants, which resulted in flawed fallout projections being issued that caused confusion in municipalities and residents near the plants.

## "Silly" to run a nuclear plant on a fault line

**JAPAN'S only working nuclear power plant sits on what may be a seismic fault in the earth's crust, a geologist has warned.**

<http://www.heraldsun.com.au/news/world/silly-to-run-japanese-nuclear-plant-on-fault-line/story-fnd134gw-1226514743926>



Mitsuhsa Watanabe says the earth's plates could move under the Oi nuclear plant in western Japan, causing a catastrophe to rival last year's atomic disaster at Fukushima - although some of his colleagues on a nuclear advisory panel disagree.

"It is an active fault. The plates shifted some 120,000 to 130,000 years ago for sure," Mr Watanabe, of Tokyo's Toyo University, said.

"In research that I have conducted on active faults in Japan and overseas, structures built above them were all damaged" when they moved and caused an earthquake, he said.

Mr Watanabe, a tectonic geomorphologist, is part of a five-member team tasked by the Nuclear Regulation Authority with looking into the tectonic situation underneath the plant, which houses the country's only working reactors.



Under government guidelines atomic installations cannot be sited on a fault - the meeting place of two or more of the plates that make up the earth's crust - if it is still classed as active, that is, one that is known to have moved within the last 130,000 years.

A positive finding would mean regulators must order the suspension of operations at the plant in Fukui prefecture.

But other scientists on the panel say it is too early to class it as an "active" fault that might pose a risk to the plant, calling for "a scientifically calm approach".

The team's head, Kunihiro Shimazaki, who is also a member of Japan's nuclear regulatory body, says the geological scarring they can see was probably caused by little more than a long-ago landslide.

Instead of the definitive green light that plant operator Kansai Electric Power (KEPCO) was hoping for, the committee last week said only that more work needs to be done.

"It's desirable for all members to reach a conclusion by consensus," Mr Shimazaki said.

However Mr Watanabe, asked if the government should allow KEPCO to continue running the plant at Oi, said: "It would be a very silly option."

"We would have learned nothing from Fukushima. I'm afraid we would see a repeat (of the disaster) one day."

He maintains that the plant could be vulnerable to a sizeable earthquake, which might "cause a very serious problem ... similar to the Fukushima one".

But he stresses that the science thus far is simply not conclusive and argues work should halt out of an abundance of caution.

"We are not seeking to decommission the plant," Mr Watanabe said. "We should first stop operation and then carry out underground investigation thoroughly before reaching a conclusion."

All Japan's nuclear reactors were shut down in the months after the disaster at Fukushima, when an earthquake-sparked tsunami knocked out cooling systems and caused meltdowns that scattered radiation over a large area.

Hundreds of thousands were made homeless and tracts of prime agricultural land were left unfarmable.

Despite widespread public fears over the safety of nuclear power, Prime Minister Yoshihiko Noda in June ordered the restarting of reactors at Oi amid fears of a summer power shortage.

That ended a brief nuclear-free period for a country that - until the Fukushima disaster - had relied on atomic power for around a third of its electricity needs.

The move was welcomed by the influential business lobby but was deeply unpopular with a vocal anti-nuclear movement. Regular anti-nuclear protests continue to be held in Tokyo.

Overnight, the 20-month anniversary since the Fukushima disaster, several thousand anti-nuclear protesters rallied in Tokyo's government district.

"No need to wait for the panel's finding! We must stop the Oi plant now!" one shouted outside the parliament building.

With a possible eye on the general election expected over the coming months, the government announced in September it would work towards a policy of phasing out nuclear power by 2040.

Critics rounded on the announcement as both populist and "incoherent" because it contained get-out clauses that would mean as-yet unfinished nuclear plants would still come online.

Mr Watanabe said a heavy burden rests on those tasked with ensuring public safety, citing the jail sentences imposed on six seismologists in Italy after a court said their underestimation of the possible effects of an earthquake had contributed to the death toll in the central city of L'Aquila.

"We have to sound the alarm as soon as we find the possibility of active faults," he said. "The accident in Fukushima had really never been imagined. Scientists must learn from that."

November 10, 2012

**Why is Rokkasho so important?**

## The government's fudge on its nuclear future remains unconvincing

<http://www.economist.com/news/asia/21566018-governments-fudge-its-nuclear-future-remains-unconvincing-rokkasho-and-hard-place>

THIS remote north-eastern coastal village in Aomori prefecture would delight a North Korean or Iranian spy. Not because of the rolling countryside, but the uranium-enrichment facility, the plant undergoing testing to make nuclear fuel by reprocessing spent uranium and plutonium, and the stash of a good part of Japan's stockpiles of more than nine tonnes of separated plutonium—enough, experts say, to make more than 1,000 nuclear warheads.

The Rokkasho plant seems an anomaly in a country that forswears nuclear weapons and that has shut down all but two of its 54 nuclear reactors. Yet the same government that says it wants to phase out atomic energy by the end of the 2030s also insists that it is committed soon to start reprocessing enough nuclear waste at Rokkasho to provide fuel for Japan's nuclear-power plants to go flat out into the 2050s. It does not take much prodding for officials to concede a potential contradiction, big enough to render Japan's nuclear policy almost meaningless.

The key to understanding the contradiction is this village of 11,000, and the immense leverage its plant has over national nuclear policy. Near-countrywide disgust followed the triple meltdown at the Fukushima Dai-ichi plant last year. Yet, officials say, Rokkasho has helped force the administration of Yoshihiko Noda to water down its plans for ending dependency on nuclear power, even though the prime minister's popularity is plunging. Polls suggest many of the electorate favour a firmer anti-nuclear stance.

### In this section

The plant plays a strong hand, though its completion is 15 years behind schedule and it has been a financial black hole. Rokkasho's mayor, Kenji Furukawa, argues that if the plant were suspended after {Yen}2.2 trillion (\$28 billion) had been spent on it, the blow to a once-poor fishing and farming village would be devastating. **Rokkasho has grown dependent on the reprocessing complex for nearly all its jobs and income.**

**A stronger economic argument, from the government's point of view, is that the plant has been built by Japan Nuclear Fuel Limited (JNFL), whose largest shareholder is Tokyo Electric Power (TEPCO), owner of the stricken Fukushima plant. If the Rokkasho project were to be scrapped, TEPCO would be on the hook for the part of JNFL's ¥1 trillion debt that it has guaranteed.** Such a move would push TEPCO even closer towards bankruptcy than the Fukushima accident has already driven it.

Government officials say that without Rokkasho, Japan might swiftly have to abandon nuclear power for good. The plant is supposed to process the spent fuel that is backed up in temporary storage tanks at nuclear-power plants. If that waste is not processed, and no agreement is reached on where to store it more permanently, safety concerns would only grow. “Without Rokkasho, we would not get approval to restart the other reactors—not ever,” says a member of the ruling Democratic Party of Japan (DPJ). Since the country’s reactors were shut down, the political establishment has quietly hoped that a looming electricity shortage will turn voters back on to nuclear power.

Then comes the international dimension. Officials say that when the DPJ made its commitment to phase out nuclear power, the United States, as well as Britain and France, expressed serious concern. Partly, they raised proliferation fears, one official says. If Japan, with the largest separated plutonium stockpile of any official non-nuclear-weapons state, carried on reprocessing spent fuel while phasing out the plants, then it would send the wrong message to potential nuclear rogue states, the Americans argued. To overcome that worry, the government quickly reassured Japan’s friends that the 2030s date was more of an objective than a commitment.

Other international objections were more to do with technology and national prowess. Americans worried that if Japan abandoned its nuclear programme, the United States would lose the technical expertise that Japanese firms share with American ones via tie-ups between Hitachi and General Electric, and Toshiba and Westinghouse. It might also mean Russia and China, rather than Japan and France, would take the lead in nuclear technology.

These pressures help explain why the government’s phase-out plans contain a hint of ambiguity. Future administrations may well take advantage of this to keep nuclear power. Still, the plans fail to explain the rationale for reprocessing. Frank von Hippel, a non-proliferation expert at Princeton University, says it would be easier and far cheaper for Japan to import uranium rather than reprocess it, and safer to store nuclear waste in air-cooled concrete casks rather than ship it to Aomori.

Yet little discussion takes place in Japan about options other than reprocessing, just as there was little discussion about nuclear safety until the Fukushima disaster. In Rokkasho itself a local rhubarb farmer, Keiko Kikukawa, wages a lonely fight against the plant from her small homestead on the village outskirts. Her protest has gone on for so long, she says, that all her fellow activists have either died or are too frail to carry on. No one else in the village, she continues, listens to her.

November 14, 2012

## NRA has doubts about Oi survey

### NRA questions nuclear operator's Ohi probe

[http://www3.nhk.or.jp/daily/english/20121114\\_20.html](http://www3.nhk.or.jp/daily/english/20121114_20.html)

Japan's Nuclear Regulation Authority has raised doubts over surveys conducted by the operator of the Ohi nuclear power station on fissures beneath the plant.

The authority is currently trying to determine if the fissures below Japan's only operational nuclear plant are signs of an active fault or not.

At the regulator's meeting on Wednesday, official Kunihiro Shimazaki questioned the Kansai Electric Power Company's explanations of its recent surveys.

He said **there are unclear points in the operator's claim that the fissures are shorter and located in a different place than determined in previous surveys.**

Shimazaki also called for improving the regulator's on-site inspections.

An expert panel set up by the authority inspected the Ohi plant on November 2, but was unable to determine if there is an active fault or not. The panel is now asking Kansai Electric to undertake additional probes.

Shimazaki said **experts were able to spend only a limited time at the site and lacked sufficient materials on the situation of the Ohi plant beforehand.**

The Nuclear Regulatory Authority plans to survey the Tsuruga nuclear power plant in Fukui Prefecture from December 1st and the Higashidori plant in Aomori Prefecture later that month.

## NRA will conduct on-site survey at Tsuruga plant

### Date set for fissure survey at Fukui nuclear plant

[http://www3.nhk.or.jp/daily/english/20121114\\_25.html](http://www3.nhk.or.jp/daily/english/20121114_25.html)

Japan's Nuclear Regulation Authority will examine fissures beneath the Tsuruga nuclear plant in Fukui Prefecture to determine whether the cracks are active faults.

NRA officials will conduct the survey with 4 outside experts on December 1st and 2nd.

A meeting to assess the results of the investigation is scheduled for December 10th. If any of the fissures are judged to be an active fault, the NRA will prohibit the restart of the plant's No.1 and No.2 reactors.

Experts who surveyed the Tsuruga plant in April found that one of the fissures could be linked to an active fault that runs through the compound.

They also said another fissure directly below the No.2 reactor could be an active fault.

The NRA will conduct on-site surveys at 6 nuclear plants across Japan to investigate whether fissures beneath them are active faults.

The agency carried out its first survey at Ohi plant, also in Fukui Prefecture, earlier this month. It instructed the plant's operator to conduct a further examination.

### **NRA to check ground under Tsuruga plant**

<http://www.yomiuri.co.jp/dy/national/T121113004624.htm>

The Yomiuri Shimbun

The Nuclear Regulation Authority has decided to conduct an on-site investigation to check whether the crush zone beneath reactor buildings at Japan Atomic Power Co.'s Tsuruga nuclear power plant in Fukui Prefecture is an active fault on Dec. 1 and 2.

If the authority judges the zone to be an active fault, it plans to decide against approving the restart of the plant's two idled reactors.

This investigation is the second of its kind for the authority following one on Nov. 2 at Kansai Electric Power Co.'s Oi nuclear plant in the prefecture. The authority could not reach a conclusion in that probe and asked KEPCO to conduct further investigation. As observers said a final decision would thus inevitably be considerably delayed, attention has been focused on how the authority would tackle other investigations.

As the one-day investigation in Oi was insufficient, the authority's investigation at the Tsuruga plant will be for two days. The Tsuruga plant has a certain amount of geological data collected through Japan Atomic Power Co.'s own research, so the authority intends to use the Tsuruga investigation as a model case to enhance discussion regarding other plants, including Oi.

The active fault problem occurred after the former Nuclear and Industrial Safety Agency comprehensively checked the evaluation of quake-resistance at plants following the Great East Japan Earthquake. Experts at a NISA hearing suggested that the crush zone beneath reactor buildings at the Tsuruga plant could move in conjunction with the active Urasoko Fault nearby.

## **Nuclear regulators set 2nd field survey destination at Tsuruga plant**

<http://mainichi.jp/english/english/newsselect/news/20121114p2g00m0dm083000c.html>

TOKYO (Kyodo) -- Japan's nuclear regulatory body on Wednesday selected the Tsuruga plant in Fukui Prefecture as its second destination to conduct a field survey to check faults that could undermine the safety of atomic power stations.

According to a plan unveiled the same day, the Nuclear Regulation Authority said it will send a team of experts to the plant owned by Japan Atomic Power Co. on Dec. 1, and if necessary also on Dec. 2. The plant's two reactors are offline.

At the Tsuruga plant, faults running directly underneath its two reactors are feared to move in conjunction with an active fault called Urazoko, which is located about 250 meters from the reactor buildings.

The investigative team consists of NRA Commissioner Kunihiro Shimazaki, a seismologist, and four other experts from academic circles.

If the NRA decides that the reactors are sitting above active faults, the two reactors will not be allowed to resume operation and could be scrapped.

The Tsuruga plant's No. 1 reactor started commercial operation in 1970, but it was not until 2008 that the Urazoko fault, part of which runs under the plant's premises, was confirmed to be active.

Japan has been reviewing the risks that could be posed by active faults in the wake of the nuclear crisis at Tokyo Electric Power Co.'s Fukushima Daiichi complex, which was triggered by a huge earthquake and tsunami on March 11, 2011.

The NRA, launched in September, conducted its first on-site inspection at Kansai Electric Power Co.'s Oi plant in Fukui Prefecture earlier this month.

But a team involved in the investigation has yet to reach a conclusion on whether faults found there can be regarded as active.

Of the 50 commercial reactors in Japan, only two reactors at the Oi plant are currently online amid strong public concerns over the safety of nuclear power.

November 15, 2012

## **NRA to check for active faults at Tsuruga plant**

### **NRA next looks to view fault at Tsuruga plant**

<http://www.japantimes.co.jp/text/nn20121115a7.html>

Kyodo

The Nuclear Regulation Authority on Wednesday selected the Tsuruga plant in Fukui Prefecture as its second destination for field surveys to check faults that could undermine the safety of nuclear power stations.

The NRA said it will send a team of experts to the plant owned by Japan Atomic Power Co. on Dec. 1 and, if necessary, on Dec. 2. The plant's two reactors are currently offline.

Experts fear faults running directly underneath the two reactors could move in conjunction with an active fault, called Urazoko, located about 250 meters from the reactor buildings.

The investigative team consists of NRA Commissioner Kunihiro Shimazaki, who is a seismologist, and four other experts from academic circles.

If the NRA decides the reactors sit atop active faults, they will not be allowed to resume operations and could be scrapped.



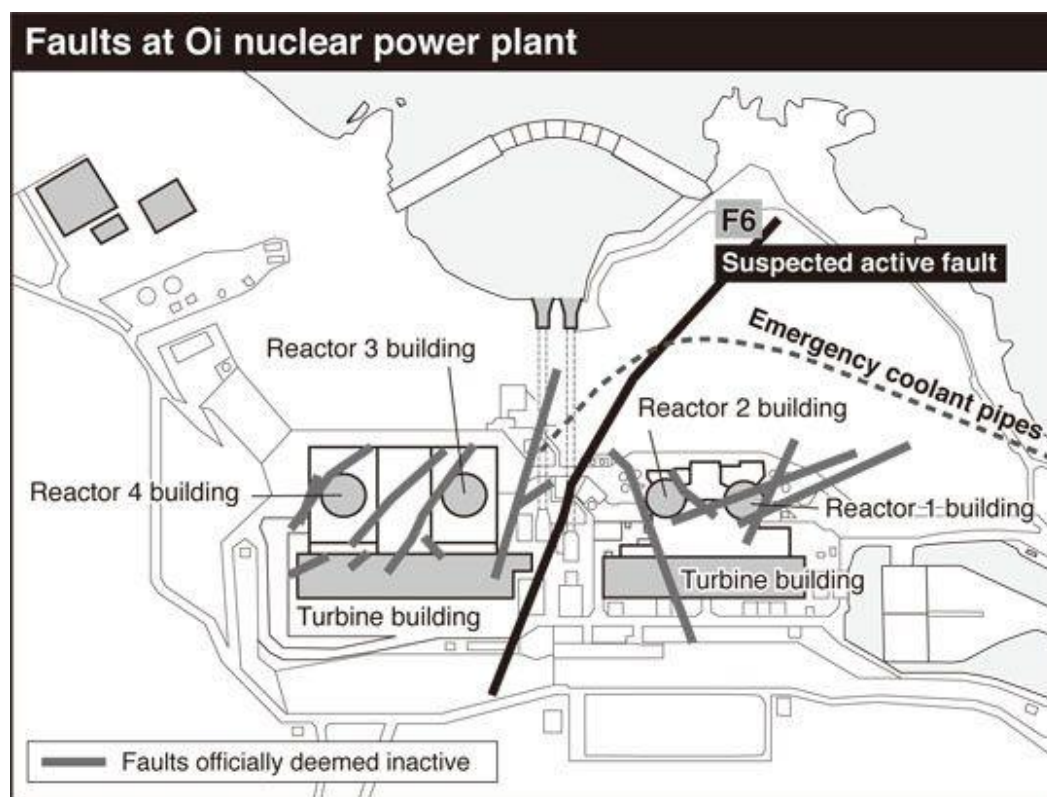
Reactor 1 started operations in 1970, but it was not until 2008 that the Urazoko fault, part of which runs under the plant's premises, was confirmed to be active.

The government has been reviewing risks posed by active faults after the meltdown crisis started last year at the Fukushima No. 1 power plant.

The NRA, launched in September, conducted its first on-site inspection at Kansai Electric Power Co.'s Oi plant in Fukui Prefecture earlier this month.

The investigators have yet to conclude whether faults found there can be regarded as active.

November 15, 2012



## Fault study at Oi nuke plant may impact all offline reactors

### Noted geologist worries warning signs will continue to go unheeded

<http://www.japantimes.co.jp/text/nn20121115x1.html>

By REIJI YOSHIDA  
Staff writer

Tokyo University professor Mitsuhsa Watanabe, a polemicist on active faults, has fought a long losing battle against Japan's nuclear industrial complex.

His research, ringing the alarm bell about active faults under and near nuclear power plants, has always fallen on deaf ears.

According to Watanabe, **nuclear regulators and power companies have a long history of willfully underestimating the danger posed by active faults near a number of reactors.**

But now the Fukushima nuclear crisis may have finally changed the rules of the game.

Watanabe, thanks to recommendations from academic societies, now sits on the five-member expert panel investigating possible active faults beneath the Oi nuclear plant in Fukui Prefecture.

Watanabe is leading the discussions at the panel, which may determine the Oi plant's fate. He has maintained that a potentially dangerous active fault runs directly beneath critical equipment for units 3 and 4, the only two commercial reactors in Japan currently operating. He has called for their immediate shutdown until thorough geological surveys can be conducted.

"Active faults run parallel in many cases. If you determine one fault is active, the possibility becomes higher that nearby parallel faults may also be active," Watanabe told The Japan Times during a recent interview. **"You need to stop the reactors to conduct thorough surveys to check all of them first."**

**All of the other members of the expert panel have admitted that the fault, named F-6, could be active and pose a serious danger.**

Watanabe believes this is good enough reason for the government to order a temporary shutdown and conduct exhaustive geological surveys.

"If you can't deny the possibility that it may be an active fault, we should not ignore the risk. The plant should first be suspended."

Watanabe also pointed out that seismic experts in the pay of the nuclear power industry have drawn severe criticism for playing down the risk of massive quakes and tsunami before the catastrophic breakdowns at the Fukushima No. 1 power plant.

"We should not repeat the same mistake that was made in Fukushima," he said.

The expert panel's judgment on the Oi plant is likely to have a significant impact on the fate of many other nuclear plants and probably the future of national energy policy as well.

The Fukushima meltdown crisis prompted regulators and utilities to assess possible quake risks at nuclear plants across the country, including those from potentially active faults.

The Nuclear Regulation Authority is set to draw up new safety standards that will set conditions for power utilities to reactivate any of the reactors halted in light of the Fukushima crisis.

Proving there is no active faults nearby is likely to be one of the key conditions before the NRA approves reactivation of any nuclear plant.

"What I'm most concerned about are issues involving faults," Shunichi Tanaka, chairman of the NRA, recently told Kyodo.

The NRA will request Kansai Electric Power Co. to stop the reactors at Oi if the F-6 fault is determined to be, or is strongly suspected of being, active, Tanaka said.

The brand-new agency has launched geological investigations into six nuclear plants where suspicion is high that they may have active faults within their fences.

The Oi plant is the first to be examined by the experts. The other five are Fukui's Tsuruga and Mihama power plants, the Shiga plant in Ishikawa Prefecture, the Higashidori plant in Amori Prefecture and the Monju experimental fast-breeder reactor, also in Fukui.

Following a survey Nov. 2 at the Oi plant, which included digging trenches, the NRA plans to conduct a similar study at the Tsuruga plant Dec. 1 and at the Higashidori facility before the end of the year.

The Oi case has also drawn particular attention because its reactors 3 and 4 are the only ones the government has managed to reactivate in the face of the public's rising opposition to nuclear energy.

For now the NRA experts focus is on whether the F-6 fault is active.

Some of the panel members suspect F-6 may have been created by a landslide, not an earthquake, and thus would be considered generally less dangerous. Kepco insists this is the case, but Watanabe isn't buying it. He says the fault appears to have moved up against a slope, making it unlikely a landslide was involved in its creation.

"Media tend to focus on debates about whether it was created by an earthquake or landslide. But that's not the most important point," he said.

Watanabe argues that utilities always try to play down any risk posed by active faults out of fear their reactors could be shut down.

"The nuclear regulator and power companies have long tried to underestimate (the danger) of active faults, worrying it would affect power supply capacity," Watanabe said, using the Shimane nuclear plant in Matsue, Shimane Prefecture, as an example.

Takashi Nakata, now a professor emeritus at Hiroshima University, had long pointed out there is a fault near the Shimane plant that was overlooked by Chugoku Electric Power Co. before it built the facility.

Initially the utility denied the existence of the active fault. Then when it admitted in 1998 the fault was there, it estimated the length at only 8 km.

Facing further criticism from Nakata, Watanabe and other experts, Chugoku Electric extended the estimated length of the Shinji Fault to 10 km in 2004 when it applied for approval to build a third reactor at the plant.

The company eventually was forced to revise its estimate to 22 km in 2008, but only after outside experts dug up the ground to show the fault actually extend that far.

**The longer a fault is, the more powerful the earthquake it can cause**, which is possibly why Chugoku Electric was reluctant to admit the Shinji Fault stretches as far as it does, Watanabe said.

The nearest point of the active fault is currently considered to be about 2.8 km south of the plant. The utility argues the reactors can withstand an earthquake that could be generated by a fault that size.

The NRA's expert panel plans to conduct another survey in which a trench will be dug within the plant's compound by the end of the year.

However, Watanabe said a one-time survey like that will be far from sufficient to examine all of the suspected faults within the compound.

He stressed the importance of making sure the panels that will be investigating the faults under and near power plants are totally independent of vested interests in the nuclear industry.

**To ensure independence, the panels should be given a budget and the authority to conduct on-site surveys wherever they believe it's necessary**, he said.

November 18, 2012

**Sorry, not ready**

### **Tsuruga crush zone report put off**

Jiji Press

<http://www.yomiuri.co.jp/dy/national/T121117003002.htm>

The release of a report on the study of six crush zones under the Tsuruga nuclear power plant in Fukui Prefecture has been postponed until the end of January, said plant operator Japan Atomic Power Co.

As instructed by the now-defunct Nuclear and Industrial Safety Agency, the company has been conducting on-site surveys at the plant to determine whether the crush zones have been an active cause of shaking.

The study requires drilling vertical shafts about 30 to 50 meters deep into the ground to study the age and activity of the crush zones.

The findings of the study were due to be released by the end of this month, but the report has been postponed because some drilling and boring jobs have yet to be completed, the company said. Independence will be maintained no matter which government

November 22, 2012

### **Nuclear regulatory body to seek independence under any ruling party**

<http://mainichi.jp/english/english/newsselect/news/20121122p2g00m0dm025000c.html>

TOKYO (Kyodo) -- Japan's nuclear regulatory authority chief said Wednesday that he will maintain the independence of his organization **no matter which political party takes control of the government following next month's general election.**

"Politics change moment to moment...but we will maintain our independence by making scientific and professional judgments," Shunichi Tanaka, chairman of the Nuclear Regulation Authority, told a press conference.

The NRA was launched in September as a highly independent organization after the Fukushima Daiichi nuclear power plant disaster last year raised questions over the closeness of regulators and promoters of atomic power, which may have resulted in lax supervision of nuclear facilities.

More than two months after its establishment, the NRA invited Wednesday five experts to seek their advice about the organization's activities.

Some experts warned that the NRA should avoid taking exclusive attitudes to different views and being bureaucratic.

"In Japan, organizations do not know how to respond when they face non-conforming elements or when challenged...Unless we change a system that excludes differences, safety culture will unlikely be nurtured,"

said Yoichi Funabashi, who was involved in establishing a private-sector panel that investigated the Fukushima nuclear crisis.

Kunio Yanagida, a nonfiction writer and member of the government-appointed nuclear accident investigation panel, emphasized the importance of analyzing the details of the cause of the accident and background factors.

"Without taking actions based on the lessons learned from the accident, it will be difficult to win trust and convince the public," he said.

Tetsunari Iida, a well-known renewable energy proponent, raised questions about the NRA's decision to leave two nuclear reactors at the Oi plant in western Japan online while carrying out an investigation into faults running underneath the complex.

"If the NRA decides to suspend the reactors for investigation, it would be one way to restore public confidence," the executive director of the Institute for Sustainable Energy Policies said.

Of the 50 commercial reactors in Japan, those two reactors were allowed by the government to resume operating before the country's nuclear regulatory framework was revamped in September.

If the NRA judges that active faults lie beneath facilities important for the safe operation of reactors, the body is expected to ask plant operator Kansai Electric Power Co. to suspend the two reactors.

## **New evacuation standards essential**

### **Japan to set nuclear evacuation standards**

[http://www3.nhk.or.jp/daily/english/20121122\\_11.html](http://www3.nhk.or.jp/daily/english/20121122_11.html)

Japan's nuclear regulatory body has started working on new sets of standards for issuing government orders for evacuating people in the event of a nuclear accident.

The Nuclear Regulation Authority held a meeting of a panel of experts on Thursday as the first step in efforts to draw up the new standards by the end of the year. Also under review is when to instruct people to take iodine tablets as a precaution against thyroid damage.

The participating experts confirmed that Japan will take standards set by the International Atomic Energy Agency as a guide to adopting its own. They say that the standards will be based on the status of reactors and monitoring data on the amount of released radiation.

Some members of the panel say a system for forecasting levels of radiation in the environment should be used to back up monitoring efforts.

In the Fukushima Daiichi accident in March last year, the earthquake and tsunami knocked out part of a network for monitoring radiation levels in the environment.

The existing standards for deciding evacuations did not work in the accident because the standards relied on data from a system for forecasting the spread of radiation, which was disabled by a blackout.

Local governments are due to work out their own evacuation plans by March next year by incorporating the new standards to be set by the panel.

## 32 times 3/11 quake possible

### Expert says maximum M10 earthquake possible

[http://www3.nhk.or.jp/daily/english/20121122\\_11.html](http://www3.nhk.or.jp/daily/english/20121122_11.html)

A Japanese seismologist says the maximum scale of an earthquake occurring anywhere in the world would be around magnitude 10, judging from Earth's size and the lengths of quake-triggering faults.

Tohoku University Professor Toru Matsuzawa made the report at a meeting in Tokyo on Wednesday.

A magnitude-10 quake would be 32 times more powerful than the 9.0 earthquake that hit northeastern Japan in March last year. The magnitude-9.5 quake recorded off Chile in 1960 is the world's largest known earthquake to date.

A magnitude-10 quake would occur, for example, if an 8,800-kilometer fault along a northern Pacific Rim trench shifts 20 meters.

Matsuzawa says such an earthquake would result in tremors lasting 20 minutes to one hour, and trigger days of tsunamis.

Matsuzawa stresses he's not saying a magnitude-10 quake would definitely occur. But he notes that Japan was hit by a magnitude-9 earthquake when it had been expecting a maximum magnitude-8, so people should be aware of what could happen.

November 28, 2012



## US trying to learn from nuke disaster

### U.S. scientists find lessons from Japan nuke crisis

<http://mainichi.jp/graph/2012/11/28/20121128p2g00m0fe033000c/001.html>

TOKYO (AP) -- A group of American scientists met in Tokyo on Tuesday to study last year's Fukushima nuclear accident in hopes of finding lessons to improve the safety of U.S. atomic power reactors.

Norman Neureiter, head of the 22-member committee of the National Academy of Sciences, said the tsunami-spawned disaster at Fukushima nuclear power plant and its continuing impact have caused widespread concerns about the safety of nuclear energy.

"We are trying to look at the whole experience and to take from that lessons which can be applied to increasing safety of nuclear power," he told The Associated Press during a coffee break between technical sessions.

Neureiter said the committee is hearing from Japanese officials and will conduct its own investigation. He said the findings would be valuable to the nuclear industry throughout the world.

A tsunami generated by a powerful earthquake hit the Fukushima nuclear plant in March 2011, knocking out power and cooling systems and causing partial meltdowns in three reactors. More than 100,000 people evacuated from the area are still unable to return to their homes in Fukushima due to radiation concerns. The magnitude-9.0 earthquake and ensuing tsunami also left more than 19,000 people dead or missing on Japan's northeastern coast, but no death linked to radiation has been reported.

"Because after a thing like this in Japan and a damage and human losses and continuing radiation and all of these things, people will have more and more questions about nuclear energy. So, to draw the conclusion from this investigation hopefully useful lessons which can be applied to elsewhere to make sure nothing like this happens again."

During the three-day meeting that began Monday, the group conducted hearings from experts who led Japanese investigations, as well as regulators and officials from the Tokyo Electric Power Co., which runs the Fukushima Dai-ichi nuclear power plant, to gather information independently and discuss technical details. The group was also to visit Fukushima for a plant visit after wrapping up a Tokyo leg Wednesday.

Neureiter said collusion between the industry and the regulators, a cozy relationship known as "the nuclear village" has caused deep-rooted distrust among the public. Japanese investigations have also blamed the lack of safety culture for contributing to the crisis.

During Tuesday's hearing, Toyoshi Fuketa, a Nuclear Regulation Authority commissioner, acknowledged the need to study ways to improve safety culture, but his organization is too busy setting up new safety and radiological protection standards and other framework.

"We have to study safety culture, but frankly speaking at the moment we do not have enough resources, enough time, or enough personnel," he said.

The group will compile a report to be released in April 2014.

He said the group is still in "an investigative stage" and the process will go on for a long time.

## **Nuke disposal policy - And don't forget the public**

### **Japan's Atomic Energy Commission drafts new policy**

[http://www3.nhk.or.jp/daily/english/20121128\\_09.html](http://www3.nhk.or.jp/daily/english/20121128_09.html)

A government panel on nuclear energy is drafting a set of new policies that includes proposals on the disposal of highly radioactive nuclear waste.

The Atomic Energy Commission said on Tuesday that the government should examine the shortcomings of the current methods and rebuild its nuclear energy policy.

The government's conventional plan to bury highly radioactive nuclear waste for tens of thousands of years came under fire in September from Japan's Science Council.

The commission says the plan should be continued in principle, but that the government must do more to win public consent.

It says the government must take a stronger initiative in reviewing laws on the choice of disposal sites.

The commission also refers to the government's decision to continue Japan's nuclear fuel recycling program. It notes that the plan has drawn criticism for being discussed separately from nuclear waste

disposal.

It says the government should present options regarding the size of the disposal sites that would be needed depending on which nuclear policies are pursued, and offer detailed explanations to the public.

The commission says it will compile a final report to the government by the end of the year, **taking into account the views of the public.**

November 30, 2012

### **Nuclear Watch: The Threat of Active Faults**

<http://www3.nhk.or.jp/nhkworld/english/movie/feature201211302000.html>

Precise date given for nuclear phase-out

December 1, 2012

### **NRA starts checking for active faults at Tsuruga plant**

#### **NRA begins Tsuruga fault investigation**

Kyodo

<http://www.japantimes.co.jp/text/nn20121201x1.html>

Experts appointed by the Nuclear Regulation Authority started a field survey Saturday to check for active faults running directly beneath the two reactors of the Tsuruga nuclear plant in Fukui Prefecture.

The NRA fears that the major active Urazoko fault, which already has been confirmed to lie only 250 meters away from the reactor buildings, could trigger smaller faults underneath the two units if it were to shift.

Past investigations have suggested that several faults running underneath reactors 1 and 2 extend from the Urazoko fault, raising fears about another disaster on the scale of the Fukushima meltdowns. If the NRA decides the reactors were constructed above faults that could move in the future, Japan Atomic Power Co. would likely be prevented from ever restarting them and could be forced to decommission the two units.

The Tsuruga plant, on the Sea of Japan coast, is the second nuclear complex the NRA has targeted for such an on-site investigation, following surveys at Kansai Electric Power Co.'s Oi power station in the same prefecture. The NRA has yet to reach a conclusion on whether faults detected at the Oi facility are active and what degree of danger they pose.

The Tsuruga plant's No. 1 unit started operations in 1970, making it the oldest of Japan's 50 commercial reactors. But it was not until 2008 that Japan Atomic Power confirmed that the Urazoko fault, part of which runs beneath the facility, was active.

The investigative team consists of NRA Commissioner Kunihiro Shimazaki, a seismologist and four other nuclear experts.

NRA Chairman Shunichi Tanaka said earlier that Japan Atomic Power will find it difficult to bring the reactors back online if an active fault is found to run beneath them.

"The existence of the active (Urazoko) fault raises serious concerns. And I can't imagine what kind of measures could be taken (by the company) for the safe operation of the two reactors" if it is found to be connected to faults running directly underneath them, Tanaka said.

When asked how long Japan Atomic Power could be prohibited from resuming operations at the plant in such an event, Tanaka said it might have to wait "until the active fault is gone" — suggesting the reactors would probably have to be scrapped.

## **Experts start investigation at Tsuruga plant over active faults**

<http://mainichi.jp/english/english/newsselect/news/20121201p2g00m0dm007000c.html>

TOKYO (Kyodo) -- Experts appointed by Japan's nuclear regulatory body on Saturday started a field survey to check whether active faults are running directly underneath the reactors of Japan Atomic Power Co.'s Tsuruga plant on the Sea of Japan coast.

With a major active fault called Urazoko already confirmed to be located at about 250 meters from reactor buildings, it is feared that other faults running underneath the reactors could move in conjunction with the Urazoko fault.

If the Nuclear Regulation Authority decides that the reactors are sitting above faults that could move in the future, the plant's Nos. 1 and 2 reactors are unlikely to be allowed to resume operation and may be scrapped.

The Tsuruga plant in Fukui Prefecture is the second location where the NRA has chosen to conduct an on-site investigation of faults following Kansai Electric Power Co.'s Oi plant in the prefecture. The NRA has not reached a conclusion on whether faults at the Oi plant are active.

The Tsuruga plant's No. 1 unit started commercial operation in 1970, making it the oldest unit among the country's 50 commercial reactors. But it was not until 2008 that the Urazoko fault, part of which runs under the plant, was confirmed to be active by Japan Atomic Power.

Several other faults running underneath the two reactors appear to be extending from the Urazoko fault, raising concerns that safety could be undermined.

The investigative team consists of NRA Commissioner Kunihiro Shimazaki, a seismologist, and four other experts recommended from academic circles. Investigations may continue Sunday.

NRA Chairman Shunichi Tanaka said earlier that the power company would likely face difficulty putting the reactors back online if an active fault is found.

"The existence of an active fault brings about serious concerns. And I can't imagine what kind of measures can be taken for (the operation of) the reactors that are already installed," he said.

Tanaka also suggested that the power company may end up decommissioning the reactors, saying, "When asked the question of how long the company will not be allowed to resume operations, it may be until the (active) fault is gone."

Japan has been reviewing the risks that could be posed by active faults in the wake of the nuclear crisis at Tokyo Electric Power Co.'s Fukushima Daiichi complex, which was triggered by a huge earthquake and tsunami on March 11, 2011.

Of the 50 commercial reactors in Japan, only two reactors at the Oi plant are currently online

## **Regulator undecided on nuclear plant fissure**

[http://www3.nhk.or.jp/daily/english/20121202\\_24.html](http://www3.nhk.or.jp/daily/english/20121202_24.html)

A team of experts from Japan's nuclear regulator has still not decided whether one of the country's reactors stands on an active seismic fault.

The 4-member team from the Nuclear Regulation Authority wrapped up a 2-day survey at the Tsuruga nuclear power plant in Fukui Prefecture on Sunday.

The plant, now offline, is the only nuclear power station in Japan with a confirmed active fault in its compound. The fault is believed to have moved 4,000 years ago.

The team dug the ground near the fault and a nearby fissure called D-1 that runs directly below the Number 2 reactor.

If experts determine that the fissure would move with the fault, the plant cannot be put back online and may have to be scrapped.

This is because the government bans nuclear plant operators from building key facilities above active faults.

Team member Kunihiro Shimazaki said they confirmed that the ground right above the D-1 fissure has changed shape. But he said the team found no evidence that the fault and the fissure would move together.

The team will hold a meeting on December 10th in Tokyo to discuss its findings.

Shimazaki indicated that the nuclear regulator may ask the Tsuruga plant operator to conduct additional inspections or his team may visit the plant again.

## **2022: The end of nuclear**

### **New party vows to scrap nuclear power by 2022**

<http://mainichi.jp/english/english/newsselect/news/20121202p2g00m0dm044000c.html>

TOKYO (Kyodo) -- A new party launched by an antinuclear governor in western Japan unveiled its campaign platform for the upcoming general election Sunday and vowed to phase out nuclear power in 10 years.

Shiga Gov. Yukiko Kada's party, named the Tomorrow Party of Japan, which has merged with a political party headed by powerbroker Ichiro Ozawa with around 50 lower house lawmakers and other small parties, seeks to become an umbrella party for antinuclear parties, ahead of the Dec. 16 election of the House of Representatives.

The nuclear issue triggered by last year's crisis at the Fukushima nuclear complex is shaping up to be one of the key election issues.

With official campaigning starting Tuesday, the four key political forces -- the Democratic Party of Japan, the Liberal Democratic Party, the Japan Restoration Party headed by outspoken former Tokyo Gov. Shintaro Ishihara and Kada's party -- are vying for the 480 seats up for grabs.

Along with the party led by Ishihara, Kada's party has drawn attention as another core of the so-called third force aiming to attract voters who are disappointed with major ruling and opposition parties.

The party also pledged to offer families 312,000 yen annually per child through junior high school graduation as a way to encourage women to give birth and engage in childrearing as the number of children in Japan falls.

It also promises to freeze the government's plan to raise the 5-percent consumption tax to 10 percent by 2015, saying that the rate hike during the current economic situation will cause consumer spending to drop further and lead to a decrease in tax revenues.

The party said it opposes Japan's participation in the U.S.-led Trans-Pacific Partnership free trade talks out of fears that U.S. rules in such areas as food safety, medicine and healthcare will become the norm, replacing Japanese standards.

December 3, 2012

## Nippon Mirai pledges 2022 atomic phaseout, tax freeze

### Ex-DPJ don Ozawa's influence emerges in hastily drafted platform

<http://www.japantimes.co.jp/text/nn20121203a2.html>

By MASAMI ITO  
Staff writer

Shiga Gov. Yukiko Kada on Sunday unveiled her new party's hastily compiled policy platform for the Dec. 16 general election, calling for the elimination of nuclear power by 2022 and freezing the government's plan to raise the sales tax.

Nippon Mirai no To (Japan Future Party) was formed just last week, but its campaign pledges already reveal the hand of Ichiro Ozawa, the former head of the Democratic Party of Japan and Kokumin no Seikatsu ga Daiichi (People's Life First). This includes a vow to distribute annual child benefits of ¥312,000 per child.

The kingpin and his followers merged with Nippon Mirai together with other small parties and former DPJ lawmakers.

#### Highlights of Nippon Mirai platform

Kyodo

Nippon Mirai no To (Japan Future Party) will:

- Phase out nuclear energy within 10 years.
- Scrap the Monju fast-breeder reactor in Fukui Prefecture and the spent-fuel reprocessing plant in Rokkasho, Aomori Prefecture.
- Provide annual allowances of ¥312,000 per child.
- Freeze the law for doubling the 5 percent sales tax rate.
- Oppose Japan's participation in the Trans-Pacific Partnership free-trade pact negotiations.

At a news conference Sunday afternoon, Kada said Japan must fundamentally change its nuclear policy in light of the Fukushima disaster, which robbed many residents of their homes and livelihoods — and even their lives.



"March 11 became a major turning point for postwar politics. We want to stand up against the old political system, which has no self-awareness of the need to change and create new politics to ensure a safe future," Kada said.

But, like Nippon Ishin no Kai (Japan Restoration Party), Kada was also called out for a comment that suggested she had pulled a reversal on the key policy.

Kada, who said on a TV news program Saturday that nuclear reactors could be reactivated if the Nuclear Regulation Authority guarantees their safety, set off a wave of criticism and confusion over her party's position. She later retracted the statement and said that she was just giving a general explanation of the procedures and apologized for causing "a misunderstanding."

And in a separate outline explaining how the party will get rid of all 50 reactors in a decade, Nippon Mirai on Sunday stated that it will not restart any of the idled units and will halt the two reactivated reactors at the Oi plant in Fukui Prefecture. It will also prohibit the establishment of new plants, including those already under construction.

Nippon Mirai plans to spend the first three years reforming the nation's electricity generation system, including by separating the generation and transmission operations, and issuing government bonds to suppress the hike in electricity prices. The following seven years of the phaseout will be spent establishing a "fair" electricity and energy market by developing reusable energy sources and promoting natural gas, the outline said.

"This is the general framework and we plan to hold discussions with bureaucrats, experts with true knowledge, and the public to make sure this plan becomes solid. I am confident that this is a responsible road map of the general framework," Tetsunari Iida, Nippon Mirai's deputy chief, said.

Iida is one of the 109 Nippon Mirai candidates running in the election. About half are former lawmakers, including Ozawa, former farm minister Masahiko Yamada, former DPJ lawmaker Shozo Azuma and former Social Democratic Party member Tomoko Abe. Kada said that she doesn't intend to run and isn't eyeing next July's Upper House election, either.

At Sunday's news conference, Kada insisted her party is not a "single issue" party and stressed that Nippon Mirai will establish a minimum-guarantee pension system, reform the civil servants' system to control bureaucrats, implement "political leadership, and hand out up to ¥312,000 in child allowances until graduation from junior high school.

Sound familiar? These were almost the exact same policies put forth by the DPJ in its 2009 platform. Most were never put into practice.

And, like the DPJ, it is not clear just how Nippon Mirai intends to fund its key policies. Kada said her party will execute leadership by identifying and cutting wasteful spending.

## Investigation at Tsuruga continues

### Experts continue investigation into active faults at Tsuruga plant

<http://mainichi.jp/english/english/newsselect/news/20121203p2g00m0dm003000c.html>

TOKYO (Kyodo) -- Experts appointed by Japan's nuclear regulatory body on Sunday conducted a field survey for the second day to check whether active faults are running directly underneath the reactors at Japan Atomic Power Co.'s Tsuruga plant on the Sea of Japan coast.

With a major active fault called Urazoko already confirmed to be located around 250 meters from reactor buildings, it is feared that other faults running underneath the reactors could move in conjunction with the Urazoko fault.

If the Nuclear Regulation Authority decides that the reactors are sitting above faults that could move in the future, the plant's Nos. 1 and 2 reactors are unlikely to be allowed to resume operation and may be scrapped.

The experts largely concurred after their field survey the previous day that the Urazoko fault is very active but they are not yet sure whether the other faults could move in conjunction with the active fault, and conducted further geological checks Sunday.

They are expected to discuss the outcome of their field survey at a meeting to be held on Dec. 10 in Tokyo.

Japan has been reviewing the risk posed by active faults in the wake of the nuclear crisis at Tokyo Electric Power Co.'s Fukushima Daiichi complex, which was triggered by the massive earthquake and tsunami on March 11, 2011.

December 4, 2012

## Investigation at Tsuruga (cont'd)

### Active fault at Tsuruga plant not ruled out: regulator

<http://www.japantimes.co.jp/text/nn20121204b3.html>

Jiji

TSURUGA, Fukui Pref. — A crush zone under the Tsuruga nuclear power plant in Fukui Prefecture may be an active fault that would require an idled reactor there to be permanently closed, the Nuclear Regulation Authority said following its second day surveying the plant.

At a news conference Sunday, Kunihiro Shimazaki, deputy chairman of the NRA, said inspectors found a stratum deformation above crush zone D-1, which runs directly beneath the building for reactor 2.

The results of the survey, conducted by Shimazaki and four other experts commissioned by the authority, will be evaluated at a meeting Dec. 10.

If D-1 is judged to be an active fault, the regulatory group will not allow Japan Atomic Power Co. to restart the reactor.

At the evaluation meeting, regulators will listen to representatives from the utility, which claims the fault under the Tsuruga plant is inactive.

D-1 is one of the crush zones at the plant said to be at risk of shifting in tandem with the active Urazoko fault, which also lies under the plant premises.

Although there is no evidence attributing the stratum deformation to D-1, it was caused by pressure similar to what moved the Urazoko fault, Shimazaki said.

He declined to say whether the deformation took place in the past 120,000 to 130,000 years. Under Japan's guidelines for screening the quake resistance of nuclear power plants, any fault believed to have moved on or after that time frame is regarded as active.

Nagoya University professor Yasuhiro Suzuki, a member of the experts' team, said the inspectors agreed that there is no information at present clearly showing D-1 is an active fault. An additional survey may be needed, Suzuki said.

Shimazaki said the regulatory group will consider conducting a further survey if needed.

The Tsuruga plant is the second nuclear power station to be inspected by the Nuclear Regulation Authority for active faults, following Kansai Electric Power Co.'s Oi plant in Fukui Prefecture in November.

A conclusion has yet to be reached on whether there is an active fault at the Oil plant, with experts divided following the November survey. Reactors 3 and 4 remain online after being reactivated in July. They are the only active reactors in Japan.

December 11, 2012

## More nuke plants sitting on active faults

### Experts fear more nuke reactors may be sited over active faults

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201212110062](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201212110062)

More nuclear power plants could be found to be sited over active fault lines as the Nuclear Regulation Authority (NRA) conducts safety reviews of facilities, experts say.

A panel of specialists with the NRA concluded on Dec. 10 that a fault line extending from below the No. 2 reactor at the Japan Atomic Power Co.'s Tsuruga plant in Tsuruga, Fukui Prefecture, is active. The reactor is likely to be decommissioned, along with the nearby No. 1 reactor.

The conclusion suggests, the experts say, that construction of some nuclear plants was approved despite insufficient data that electric companies provided or due to lax oversight of the authorities.

The Tsuruga plant is one of six sites that were ordered in August by the Nuclear and Industrial Safety Agency, the NRA predecessor, to have geological fault surveys conducted.

The authorities said that the six plants should be re-examined for possible active seismic faults in and near the facilities, saying there was not enough data showing otherwise.

The other five sites are: Kansai Electric Power Co.'s Oi plant in Fukui Prefecture; Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture; Kansai Electric's Mihama plant in Fukui Prefecture; Japan Atomic Energy Agency's Monju prototype fast breeder reactor in Fukui Prefecture; and Tohoku Electric Power Co.'s Higashidori plant in Aomori Prefecture.

Two of the four reactors at the Oi plant are the only two of the nation's 50 commercial reactors currently online.

Reactors and other crucial facilities are not allowed to be built above an active fault under the government's 2010 quake-resistance standards for nuclear power plants.

Apart from the Tsuruga plant, many seismologists and geologists argue that a reactor at the Shika plant also sits on an active seismic fault.

There remains a sketch of a fault line extending below the No. 1 reactor at the Shika plant. It was produced by Hokuriku Electric in a geological survey when the utility applied for the installment of the reactor in 1987.

But authorities at that time determined it was not active.

Some experts, however, pointed out at a meeting of specialists at NISA in July that it was a "classic" example of an active fault.

Hokuriku Electric is conducting an additional study of the fault, but the study has been delayed.

Authorities have been reviewing existing geological data on the grounds and areas surrounding nuclear plants that were provided by the plant operators. The review was prompted by last year's Great East Japan Earthquake, which set off a triple meltdown at the Fukushima No. 1 nuclear power plant.

An on-site inspection of the Shika plant by an NRA team is expected next year.

If the fault is assessed to be active, the No. 1 unit could be asked to be permanently shut down.

At the Mihama plant and Monju fast breeder, an active fault, Shiraki-Nyu, runs in the vicinity.

Experts say faults known to be situated underneath the reactors at the two facilities could move if the Shiraki-Nyu active fault slips.

The operators are conducting a study to come up with more data on the suspected faults.

At the Oi plant, an emergency water intake channel, which is crucial in responding to a nuclear accident, is situated above a possible active fault.

A panel of experts at the NRA conducted an on-site inspection on Nov. 2, but did not reach a conclusion. It is expected to take months for the NRA to come to a conclusion. Additional surveys, including drilling, are expected to take place.

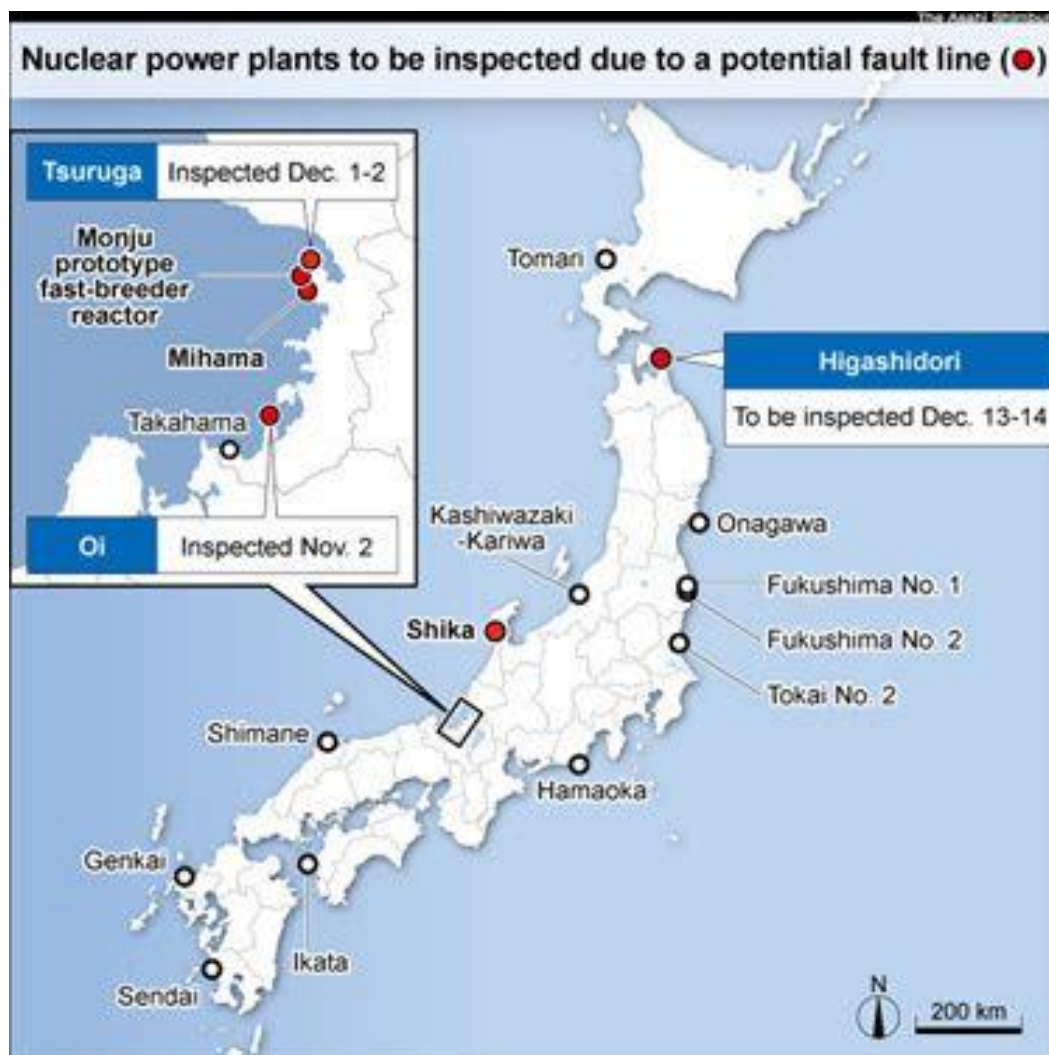
If a fault is found to be active, the plant must be shut down to allow work to relocate an emergency water intake channel.

But many experts say that the reactors will not need to be decommissioned simply because of that.

A separate NRA panel is expected to conduct an on-site inspection of the Higashidori plant on Dec. 13-14.

Tohoku Electric says no crucial facility sits on a fault that some specialists suspect is active.

If the fault is assessed to be active, a review of safety checks will be needed to evaluate if the plant is quake-resistant before it can be restarted.



December 13, 2012

## Bent water rods at Kashiwazaki

### Bent rod found at TEPCO's Niigata reactor

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212130030>

Tokyo Electric Power Co. said Dec. 12 a bent water rod caused two fuel rods to come into contact inside a fuel rod assembly stored in a spent fuel storage pool for the No. 5 reactor of the Kashiwazaki-Kariwa nuclear power plant in Niigata Prefecture.

No damage to nuclear fuel or other anomalies have been reported, but the two fuel rods may have been in contact with each other when they were burning inside the reactor.

The situation had the potential to cause a serious fuel failure accident.

A fuel rod assembly is a bundle of 60 fuel rods. A water rod, or a passage for coolant water, runs through its center.

Water rods were found to be bending in 18 fuel rod assemblies in the storage pool. Closer studies found that in one fuel rod assembly, the bending water rod pushed one nearby fuel rod into contact with another.

At the Kashiwazaki-Kariwa plant, a number of unspent fuel rod assemblies had been exposed to excessive loads due to sloppy work procedures when they were encased in metal covers.

The two fuel rods in question may have come into contact during such work procedures, TEPCO officials said.

The fuel rod assembly was encased in a cover in 1994 and burned in the nuclear reactor from 1995 to 2000.

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See : TEPCO press release site Dec.12:  
TOKYO ELECTRIC POWER COMPANY

#### **Press Release (Dec 12, 2012)**

#### **Bent Fuel Assembly Water Rod at Unit 5 of Kashiwazaki-Kariwa Nuclear Power Station (Follow-up Report)**

[http://www.tepco.co.jp/en/press/corp-com/release/2012/1223614\\_1870.html](http://www.tepco.co.jp/en/press/corp-com/release/2012/1223614_1870.html)

We are currently investigating the bent found on part of spent fuel assembly water rod\*<sup>1</sup> while inspecting the upper part (clip) of fuel assembly channel box\*<sup>2</sup> at Unit 5 of Kashiwazaki-Kariwa Nuclear Power Station under regular inspection. As a result of appearance inspection, the water rods of 18 out of 65 spent



fuel assemblies were found to be bent.

The 2 out of these 18 spent fuel assemblies on which major bent was found were inspected further utilizing a fiberscope. As a result of inspection, the following has been found.

- Deformation was found near the hole on the thin area in the lower part of water rod where strength is relatively low.
- Though some holes have become smaller due to deformation, no hole was completely closed.
- The fuel rods adjacent to the bent water rods were touching or close to one another.

As fuel rods were found to be touching one another due to the bent water rods, it has been judged by the Nuclear Regulatory Agency that the incident applies to Article 19-17, Paragraph 1, Item 3\*3 of the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (Rule for Commercial Nuclear Power Reactors).

Based on the inspection results, we will continue investigating the cause of the bent water rod and report the results to the Nuclear Regulation Authority.

#### Attachment

"Fuel assembly inspection in response to the bent water rod found at Unit 5 of Kashiwazaki-Kariwa Nuclear Power Station" (PDF 208KB)

##### \*1 Water rod

Hollow tube installed in the center of the fuel assembly in parallel with fuel rods. By passing water through the tube, the output inside the fuel assembly is optimized.

##### \*2 Channel box

Square metal tube cover installed on the fuel assembly. By installing the channel box, the coolant flow path through the fuel assembly can be fixed. It also functions as a guide when the control rods operate and protects fuel assembly.

\*3 Article 19-17, Paragraph 1, Item 3 of the Rule for the Installation, Operation, etc. of Commercial Nuclear Power Reactors (Rule for Commercial Nuclear Power Reactors)

As stipulated by Article 62-3 of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, in the case of an incident which applies to the following, licensees of reactor operation (including former licensees of reactor operation, same as in the following Article and Article 24) must report the incident and countermeasures to the Nuclear Regulation Authority within 10 days from the incident occurrence.

When licensees inspect equipments critical for ensuring safety and the results do not comply to the standards stipulated in Article 9 or Article 9-2 of the Ordinance which specifies the technical standards of commercial nuclear power facilities or when the functions necessary to maintain safety of nuclear facilities are deemed inadequate.

The aforementioned document is available only in Japanese. We apologize to the inconvenience this may cause.

December 13, 2012

## On-site survey at Higashidori

### Survey starts on faults at Higashidori plant

[http://www3.nhk.or.jp/daily/english/20121213\\_19.html](http://www3.nhk.or.jp/daily/english/20121213_19.html)



Inspectors from Japan's Nuclear Regulation Authority have started an on-site survey into possible active faults under the Higashidori nuclear plant in Aomori Prefecture, northeastern Japan.

Regulation Authority official Kunihiro Shimazaki and 4 experts began the 2-day assessment on Thursday.

They observed cross-sections of faults found in trenches dug at the southern part of the plant compound. Along a fault known as "s-19", the ground has shifted 90 centimeters.

Officials from plant operator Tohoku Electric Power Company say the movement is due to swelling of the strata from water absorption, not seismic activity.

But experts taking part in the survey doubt the utility's explanation. They say it is full of contradictions and they need more data.

The experts will meet in Tokyo on Thursday next week to present their assessment of the 2-day survey.

This is the NRA's third on-site assessment, following studies at the Ohi and Tsuruga plants, both in Fukui Prefecture on the Sea of Japan coast.

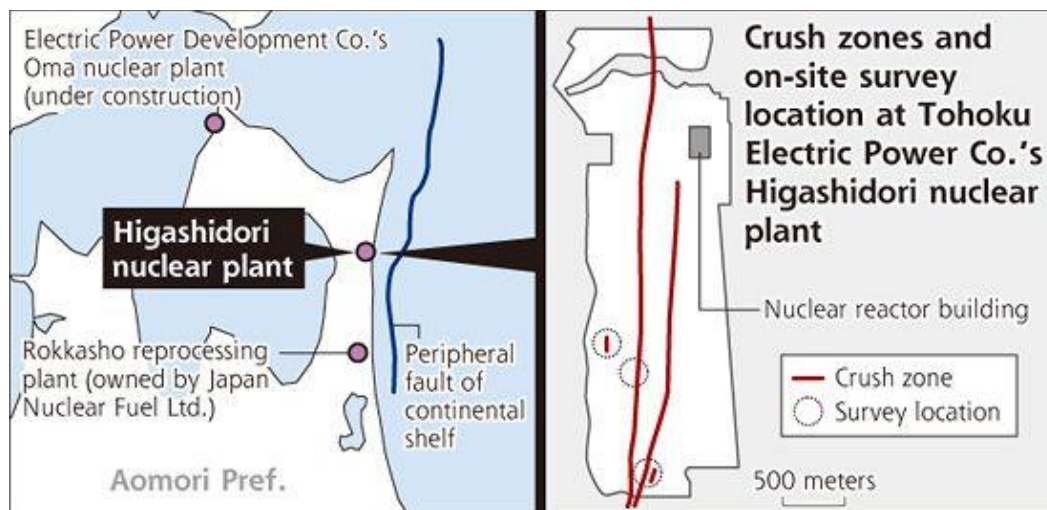
An NRA expert panel concluded earlier this week that a fault beneath the Tsuruga plant is likely to be active. The future of the plant is yet to be decided.

If the current Higashidori survey concludes that fissures in the compound are active, the plant may never be restarted. Government guidelines do not allow installation of key nuclear plant facilities above active faults.

### **NRA starts survey of Higashidori crush zones**

The Yomiuri Shimbun

<http://www.yomiuri.co.jp/dy/national/T121213004656.htm>



A Nuclear Regulation Authority expert team on Thursday launched an on-site survey to ascertain whether the crush zones running below Tohoku Electric Power Co.'s Higashidori nuclear power plant in Aomori Prefecture are active faults.

During the two-day survey, the five-member team of experts, including NRA Acting Chairman Kunihiko Shimazaki, will check such sites as the trenches excavated by Tohoku Electric for their own surveys.

Next Thursday, the experts will hold an evaluation meeting to discuss their findings.

This is the third on-site survey to be conducted by the NRA. Earlier, they inspected Kansai Electric Power Co.'s Oi nuclear power plant and Japan Atomic Power Co.'s Tsuruga nuclear plant, both in Fukui Prefecture.

The crush zones running below the Higashidori power plant are considered by some experts as being at risk of moving in tandem with a main active fault.

Tohoku Electric has stated, "There is no active fault nearby."

The crush zones are away from the nuclear reactor. If they are judged to be active, however, there must be a main active fault nearby. This will prompt experts to fundamentally review the quake-resistance of the plant, while making it unlikely the plant will get approval to resume operations.

The team of experts will examine four crush zones south of the nuclear reactor building. They will inspect the trenches, which the power company excavated earlier, to observe the stratum of the crush zones, while checking geological samples collected earlier.

At a hearing held before the Great East Japan Earthquake last March by the now-defunct Nuclear and Industrial Safety Agency, experts pointed out that these crush zones might be active faults.

Tohoku Electric asserts they are the crush zones created not by earthquakes, but by a rise in groundwater levels.

If the crush zones are found to be at risk of moving in tandem with a main active fault, the question arises of where the main active fault is located.

A leading candidate is a peripheral fault on the continental shelf, running along the seabed about 7 kilometers east of the Higashidori plant.

Tohoku Electric has said the fault, which runs north and south for more than 80 kilometers, is not active.

Japan Nuclear Fuel Ltd.'s Rokkasho reprocessing plant and the Electric Power Development Co.'s Oma nuclear power plant, currently under construction, are near the peripheral fault. It is likely experts will discuss the quake-resistance of these two plants.

## **NRA proposes stricter evacuation rules**

# Genkai nuclear plant (Saga Prefecture)







## Radiation forecast map

● Nuclear plant

### Radiation dose

Large  Small

Locations of 100-millisievert  
weekly dose (near worst-case scenario)



Lines connect locations where radioactive  
materials would likely spread

### Draft calls for stricter N-evacuation standards

<http://www.yomiuri.co.jp/dy/national/T121213004078.htm>

## Comparison of draft NRA standards and IAEA standards

	NRA	IAEA
Swift evacuation	500 microsieverts per hour	1,000 microsieverts per hour
Swift food and drink restriction	0.5 microsieverts per hour	1 microsieverts per hour
Temporary relocation	20 microsieverts per hour	100 microsieverts per hour

*Based on NRA data*

The Nuclear Regulation Authority on Thursday proposed a safety standard calling for the evacuation of residents within a few hours in areas with radiation levels higher than 500 microsieverts per hour in the event of a nuclear crisis.

The nuclear watchdog proposed the draft standard, which is half that of the International Atomic Energy Agency's evacuation standard of 1,000 microsieverts per hour, to a meeting of its expert panel.

The draft also calls for mandatory evacuation within a week of residents in areas with radiation levels above 20 microsieverts per hour, and restricts the consumption of food and drink produced in areas with air radiation levels 0.5 microsieverts per hour or higher.

Both envisaged standards are far stricter than the IAEA's limit of 100 microsieverts per hour and 1 microsieverts per hour, respectively.

A working group of the Cabinet Office's Nuclear Safety Commission said in October last year that evacuation and other safety guidelines for nuclear disaster response should be in line with IAEA standards.

However, the NRA decided to set stricter standards for the country from the viewpoint of residents' safety, following the crisis at the Fukushima No. 1 nuclear power plant that was triggered by the Great East Japan Earthquake.

The IAEA standards are considered reference figures only, and other nations also have adopted their own nuclear safety standards.

The draft will be studied by the panel, which comprises experts in radiology and other fields. As overly strict regulations may impose additional burdens on residents, the panel is tasked with striking a balance between convenience and safety.

The standards are expected to be decided on by the end of this year and will be reflected in the government's guidelines on response measures for nuclear emergencies.

## Mistakes in all radiation maps

### Mistakes found in all radiation projections

<http://www.japantimes.co.jp/text/nn20121213x1.html>

Kyodo

The Nuclear Regulation Authority said Thursday a thorough review of its mistake-plagued projections for the spread of radiation turned up errors in the data for every atomic power plant in Japan.

The regulatory body examined the data in detail to ensure there would be no more mistakes in the projections. Local governments are expected to use the information to craft plans to prepare for nuclear disasters.

The NRA said there were significant changes in diagrams for how radiation could spread in the event of crises at Kyushu Electric Power Co.'s Genkai and Sendai power plants and Hokkaido Electric Power Co.'s Tomari nuclear complex, compared with the previously revised projections released Oct. 29.

The three projections had to be revised either because the plant operators supplied erroneous weather information or because the data were incorrectly processed by the Japan Nuclear Energy Safety Organization, which was tasked with creating the projections.

The process of calculating the projections for the remaining 14 plants across the country, including disaster-hit Fukushima No. 1 operated by Tokyo Electric Power Co., also contained errors or was



mishandled, although this did not result in drastic changes in the projections, according to the NRA's secretariat.

The simulation showed the distances at which doses could reach 100 millisieverts a week after a severe crisis like last year's three meltdowns at Fukushima No. 1. At that dose level, evacuation is recommended by the International Atomic Energy Agency.

The latest projections show the most distant point where such severe radiation could spread is 40.1 km east of Tepco's Kashiwazaki-Kariwa plant in Niigata Prefecture. That point is in the city of Nagaoka.

In the earlier projections, the NRA said the most distant point would still be in Nagaoka, but 40.2 km from Tepco's facility, the largest nuclear plant in the world.

## Nukes without borders

**Eye-opener: Participants in a bilateral tour aimed at learning about South Korea's atomic energy operations visit the Shin Kori plant in Ulsan, which faces the Sea of Japan, on Dec. 2. ERIKO ARITA**



## **Fears grow over South's atomic plants 200 km from Fukuoka**

<http://www.japantimes.co.jp/text/nn20121213f1.html>

By ERIKO ARITA  
Staff writer

BUSAN, South Korea — One of the key issues in Sunday's Lower House election is the future of Japan's 50 commercial nuclear reactors, all but two of which remain off line in light of the Fukushima disaster.

But few voters are aware that six reactors are operating in the South Korean cities of Busan and nearby Ulsan sit only 200 km from Fukuoka. Both nuclear plants are situated on the country's southeast coast, and their safety situation closely resembles the Fukushima No. 1 plant before it had three core meltdowns in March 2011.

And work has almost finished on two new reactors at the Ulsan facility.

As awareness grows of the dangers of nuclear power, around 450 Japanese and an equal number of South Koreans took part in a nine-day cruise tour from Dec. 1 organized by nongovernmental organizations, visiting atomic plants in both nations and debating the risks and economic issues both countries face.

"If there is a crisis at a nuclear power station in either country, it would threaten the lives of people in both Japan and South Korea," said Tatsuya Yoshioka, a representative of the Tokyo-based Peace Boat NGO, which helped arrange the tour.

During visits to the four-reactor Kori nuclear plant in the industrial powerhouse of Busan and the two-unit Shin Kori atomic complex in Ulsan, another large metropolis, an employee of the museum built by the operator of the plants explained their safety features to guard against earthquakes, touting the robustness of the reactor buildings' 1.5-meter-thick walls.

"The structures can bear pressure from major temblors and other natural disasters. We believe it is safest to evacuate into the buildings (rather than flee the area) in the event of an earthquake," the employee said. However, the reactors have suffered minor accidents in the past. In February, the entire power supply to one of the units at the Kori facility was cut for 12 minutes before workers rerouted electricity from the other reactors.

Yet local residents weren't informed of the incident until a month later, according to Gu Tae Hee of Busan's Democracy Park NGO.

Locals also fear that a disaster similar to the Fukushima No. 1 meltdowns could occur in their own backyard, and that hundreds of thousands of people might be forced to evacuate due to massive radioactive fallout, just like residents in Fukushima Prefecture did last year.

"I am concerned about (a possible) crisis at the two power stations because the area is densely populated," said Hwa Duck Hun, an assemblyman of Busan's Haeundae Ward, which is located just 20 km from each plant and has some 430,000 residents.

The fact that one of the Kori plant's reactors was manufactured by a U.S. company in 1977, just two years before a unit at the Three Mile Island nuclear plant in Pennsylvania suffered a partial meltdown in the worst nuclear accident in U.S. history, makes Hwa all the more uneasy.

The narrow roads in small villages such as Shinri, which is situated extremely near to both power stations, could prove a major problem in a catastrophe because they would become jammed with people fleeing for their lives.

The village has asked authorities to widen existing roads, Shinri Mayor Shon Bok Lark said, adding local officials have also started holding nuclear disaster preparedness drills.

Displaying a photo of a crammed road near the Fukushima No. 1 plant immediately after the crisis was spawned by the Great East Japan Earthquake and tsunami, Kenichi Shimomura, one of the tour members and a former anchorman of a TBS news program, explained the importance of widening roads near the plants as a key precaution.

"Roads in the vicinity of the Kori and Shin Kori nuclear complexes are narrow and similar to those that residents in Fukushima used to escape. But because they are narrow, the residents could move at a speed of only 12 meters per hour," Shimomura noted.

"I wonder whether you are considering how to evacuate in case of a critical nuclear accident," he told Mayor Shon.

But the truth is, Shon explained, the construction of nuclear plants is a national project, and villagers were left with no choice but to agree to host the Kori and Shin Kori facilities.

Atomic energy is a hot-button topic in South Korea's Dec. 19 presidential election, as 23 reactors are currently churning out electricity for the nation. Park Geun Hye, tapped by the ruling Grand National Party

as South Korean President Lee Myung Bak's successor, is a strong advocate of nuclear power, but her main rival, the opposition camp's Moon Jae In, wants to completely phase out atomic plants.

"The election could (fundamentally) change South Korea's energy policy," said Choi Yul, head of the Korean Green Foundation, the tour's co-organizer.

The South Korean government plans to increase the ratio of nuclear power in the country's electricity supply to 48.5 percent by 2024 from 31.4 percent, the figure for 2010.

However, the safety of nuclear plants remains unresolved, according to Yun Sun Jin, an environmental studies professor at Seoul National University who pointed out the risk of a disaster occurring in the megalopolis of Busan, population 3.6 million, as well as at the five-reactor Wolsong atomic complex that lies a little farther north along the coast.

After learning about South Korea's nuclear plants, tour participant Daisuke Makise was struck by the parallels in the two countries: In each case, the central government has pressured municipalities in dire need of jobs to host nuclear complexes in exchange for an economic boost.

As a result, the economies of these communities have become hugely dependent on the nuclear energy industry, said Makise, a 25-year-old graduate student at Kagoshima University.

"Unless there are other industries (regional economies can rely on), we cannot easily say stop nuclear power," Makise said.

But for Sayaka Taira, another tour member, the difficult and complex situation residents face in South Korea has only reinforced her conviction that nuclear plants are not something she wants Japan to continue depending on in the future.

A 28-year-old employee at the Tama Culture Center in western Tokyo, Taira said she will vote in Sunday's election for a party seeking to completely eliminate atomic energy.

"Although they may not be able to propose details for the abolition of nuclear power, I support parties that (promise to) do their best to shut down atomic plants and reconstruct industries in areas hosting them," Taira said.

December 14, 2012

## **All radiation forecast maps riddled with mistakes: NRA**

<http://mainichi.jp/english/english/newsselect/news/20121214p2a00m0na009000c.html>

In yet another embarrassing admission for a nuclear watchdog, the Nuclear Regulation Authority (NRA) announced on Dec. 13 that all of its radiation dispersion forecast maps for Japan's nuclear plants were riddled with errors.

The maps were drawn up to show the predicted spread of radioactive materials in the event of a nuclear disaster at any of the 16 plants, and released to the public in October this year.

The NRA's secretariat gave verbal warnings to Deputy Secretary-General Hideka Morimoto and two other officials -- Yoshihide Kuroki and Shuichi Kaneko -- the same day. The NRA has released revised maps based on recalculated data.

According to the NRA, at least 2,200 mistakes -- including weather data input and processing errors -- were found in the radiation forecast maps. In response, the NRA secretariat is poised to set up a quality control division to prevent a recurrence.

"It was our first failure and we learned a lot from it. It's important not to repeat the mistake," said NRA Chairman Shunichi Tanaka.

The maps were based on calculations of the projected spread of radioactive materials in emergencies including core meltdowns in all reactors at each of the nuclear stations. The maps show the furthest points in 16 directions around the plants where radiation doses could reach 100 millisievert per week -- the International Atomic Energy Agency (IAEA)'s emergency evacuation standard.

After the maps were released, a series of mistakes were found and corrected, prompting the NRA to re-examine the calculation processes for all maps. The revised versions are very different from the previous versions, especially for the Genkai nuclear plant in Saga Prefecture, the Sendai plant in Kagoshima Prefecture, and the Tomari plant in Hokkaido. For other nuclear plants, the regulatory body made such revisions as increasing or decreasing the radioactive material diffusion distances by 0.1 to 4.8 kilometers.

The NRA secretariat and the Japan Nuclear Energy Safety Organization (JNES), which was commissioned to calculate the data and made input mistakes, have said they will jointly check their work thoroughly to prevent a recurrence.

The revised radiation forecast maps can be viewed on the NRA's website at:  
<http://www.nsr.go.jp/committee/kisei/20121213.html>

### **Radiation forecast maps corrected again for all nuke plants**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212140048>

The Nuclear Regulation Authority (NRA) on Dec. 13 released corrections to all of its radiation forecast maps, which show the likely spread of radioactive substances from a serious accident at 16 nuclear power plants across Japan.

The corrections affect all of the nuclear plants under study, which do not include the Fukushima No. 1 nuclear plant, site of the reactor meltdowns following an earthquake and tsunami in March 2011, or the Monju prototype fast-breeder reactor.

The forecast maps show the likely spread of radioactive substances in the event of an accident similar in scale to the Fukushima disaster, and the corrections are expected to affect the ongoing efforts by local governments situated near nuclear plants to draw up emergency evacuation plans.

Errors in the maps have been found on successive occasions since the nuclear regulatory agency initially released them on Oct. 24.

The most significant errors discovered in the recent overhaul concerned the forecast maps for the Tomari plant in Hokkaido, the Genkai plant in Saga Prefecture, and the Sendai plant in Kagoshima Prefecture.

The previous map for the Tomari plant was found to have overestimated the area of likely spread because of errors in weather data input. The maps for the Genkai and Sendai plants had to be turned 180 degrees because Kyushu Electric Power Co., operator of the plants, had mixed up the windward and leeward directions.

Local governments have been urged to draw up evacuation plans for areas where the weekly radiation doses are likely to reach 100 millisieverts, and the Dec. 13 corrections affect five municipalities in that regard.

Kutchan and Iwanai, both in Hokkaido, and Akune, Kagoshima Prefecture, were removed from the list of municipalities with areas of 100-millisievert weekly doses, while Tokamachi, Niigata Prefecture, and Sasebo, Nagasaki Prefecture, were added to the list.

Tokamachi, which was initially on the list but was delisted with the Oct. 29 correction, was put on the list again.

The Oct. 29 corrections included 22.5-degree rotations of the forecast maps for six nuclear plants, either clockwise or counterclockwise. The mix-up of windward and leeward directions for the Genkai and Sendai plants was made public by the NRA on Nov. 6. The NRA said it would release corrected maps for the two plants on Nov. 8, but they were not released on that day because more errors were discovered. The NRA instead decided to conduct the latest overhaul on all forecast maps for the 16 nuclear plants.

The NRA said its predecessor, the Nuclear and Industrial Safety Agency (NISA), gave ambiguous instructions when it commissioned the Japan Nuclear Energy Safety Organization (JNES) in March to create the forecast maps. JNES, which won the contract, failed to double-check the specifications, while the NRA also failed to define the procedures for checking them after it took over the mission from the now-defunct NISA.

The NRA on Dec. 13 verbally admonished three officials in charge of the matter.

## **Experts advise stricter nuclear evacuation rules**

[http://www3.nhk.or.jp/daily/english/20121214\\_04.html](http://www3.nhk.or.jp/daily/english/20121214_04.html)

A panel of experts from Japan's nuclear regulatory agency has proposed stricter evacuation rules for nuclear accidents.

Nuclear Regulation Authority experts advise the public to immediately take shelter when radiation levels reach 500 microsieverts per hour. That's half of the International Atomic Energy Agency guideline of 1,000 microsieverts per hour.

One day after the Fukushima Daiichi nuclear power plant accident last year, radiation of 500 microsieverts per hour was measured at a distance of 6 kilometers.

For radiation levels of 20 microsieverts per hour the panel advises residents to evacuate within a week. The current IAEA standard is 100 microsieverts per hour.

At radiation levels of 0.5 microsieverts per hour the panel advises residents not to consume locally-produced food and drink.

The experts say the government should prepare sufficient resources to allow radiation monitoring across the entire area affected by a nuclear accident.

The panel plans to finalize its recommendations by the end of December.

## **Higashidori (follow-up)**

### **Team: Fault at nuclear plant may be active**

[http://www3.nhk.or.jp/daily/english/20121214\\_27.html](http://www3.nhk.or.jp/daily/english/20121214_27.html)

Japan's nuclear regulator says that a nuclear power plant in northern Japan may be sitting on active faults.

Nuclear Regulation Authority official Kunihiro Shimazaki and 4 experts concluded their 2-day inspection at the Higashidori plant in Aomori Prefecture on Friday.

They scraped and washed the ground surface to see how far 2 faults in the compound extend.

Plant operator Tohoku Electric Power Company has argued that the shift in the strata was formed after soil in the ground absorbed water, and that it was not the result of seismic activity.

The experts say they cannot deny the possibility that the 2 faults are active, and that they can reach a conclusion without additional surveys.

Shimazaki says everyone on the team shares the same view and that they will discuss the matter next Thursday.

The experts also call for inspections on faults in and off Shimokita Peninsula, where the Higashidori plant and other nuclear facilities are located.

Tohoku Electric says the faults are not located directly beneath the reactor or other key facilities at Higashidori.

But if the nuclear regulator determines that the faults are active, the operator will have to review its earthquake-resistance measures and possibly close the plant.

The plant has been offline for regular safety checks.

## Enhance safety, say experts

### Foreign experts advise Japan on nuclear safety

[http://www3.nhk.or.jp/daily/english/20121214\\_16.html](http://www3.nhk.or.jp/daily/english/20121214_16.html)

US and European experts on Friday offered advice to Japan's nuclear regulator about enhancing nuclear safety in the wake of last year's Fukushima accident.

Japan's Nuclear Regulation Authority met for the first time with 3 foreign experts in the field.

**Richard Meserve, a former chairman of the US Nuclear Regulatory Commission**, said that staff members must have technical expertise if they are to effectively enforce regulations. He said it is necessary to continuously assess their levels of expertise, and hire foreign staff if necessary.



Andre-Claude Lacoste, a former head of France's nuclear safety authority, pointed out that nuclear plant operators in Japan only implemented the safety measures that were legally required.

He said it is very dangerous for plant operators to think that all they need to do is follow state regulations. He said it is important to establish a system under which plant operators are encouraged to voluntarily enhance safety.

Chairman of the Nuclear Regulation Authority, Shunichi Tanaka, said he is not satisfied with the safety awareness level of plant operators in Japan. He said he wants to promote Japan's own safety measures by listening to the advice of foreign experts.

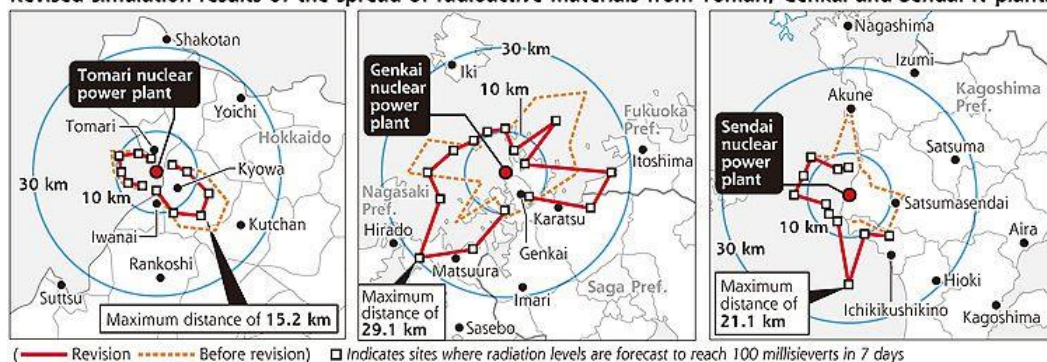
## New simulations - The NRA will have to regain people's trust

### New N-plant disaster simulations released

<http://www.yomiuri.co.jp/dy/national/T121214004310.htm>

The Yomiuri Shimbun

Revised simulation results of the spread of radioactive materials from Tomari, Genkai and Sendai N-plants



The central government's nuclear regulator has released revised simulations on the spread of radioactive substances in the event of a severe nuclear accident to reflect a total of 75 mistakes, significantly altering the results for three plants.

The Nuclear Regulation Authority's secretariat released the results of its reexamination of the simulations Thursday, along with the results of the repeat simulations.

The original simulation for Hokkaido Electric Power Co.'s Tomari nuclear power plant in Tomari, Hokkaido, used rainfall data that was 10 times too large. There were 75 such mistakes found in the initial

simulations conducted for all of the nation's 17 nuclear power plants, including Tokyo Electric Power Co.'s Fukushima No. 1 plant.

The nuclear regulatory agency, which serves as the secretariat for the NRA, said it issued strict oral warnings to three senior officials, including Hideka Morimoto, its second in command.

According to the agency, significant corrections were made to the simulations for three of the plants.

These were the Tomari plant and two others where errors had already been found--the Genkai nuclear power plant in Genkai, Saga Prefecture, and Sendai nuclear power plant in Satsumasendai, Kagoshima Prefecture, both operated by Kyushu Electric Power Co.

In the simulations for the Tomari plant, the Japan Nuclear Energy Safety Organization (JNES), an independent administrative organization tasked with the simulations by the NRA, entered the rainfall data in millimeters per hour, instead of the correct 0.1 millimeters per hour.

The repeat simulations showed a smaller area over which cumulative radioactive contamination could reach 100 millisieverts in seven days. Contamination was newly predicted to reach a point that would require the evacuation of residents from Kyowa, which is 15.2 kilometers from the plant, a change from the previous simulation, which indicated evacuations would be needed as far as Kutchan, which is 19.9 kilometers away.

For the Genkai and Sendai plants, Kyushu Electric gave JNES faulty data on wind directions that led to wind forecasts that were 180 degrees opposite of what they should have been.

The recalculations changed the farthest point of contamination from the Genkai plant from Karatsu, Saga Prefecture, which is 27.4 kilometers from the plant, to Sasebo, Nagasaki Prefecture, which is 29.1 kilometers away.

The farthest point of contamination for the Sendai plant was changed from Akune, Kagoshima Prefecture, which is 21.1 kilometers from the plant, to the sea off Ichikikushikino, Kagoshima Prefecture, which is 21.1 kilometers away.

Major changes were not made to the simulations for the other 14 nuclear power plants, but there were many minor mistakes about weather data and conversion codes.

The changes mean that some municipalities now find themselves either excluded from or included in areas where radiation contamination in a major accident could require evacuation.

The agency blamed JNES for the mistakes and said it lacked the capability to verify the results.

The agency said it sees the simulations as basic data on which to base the disaster-preparedness plans that are compiled upon requests from municipalities near nuclear power plants.

In August this year, the Nuclear and Industrial Safety Agency, one of predecessors of the NRA, changed its policy to require forecast data in all 16 compass directions, which was not initially planned.

Despite the enormous volume of data to be processed, the agency, after taking over from NISA, did not check the system before asking JNES to quickly complete the simulations.

The simulations produced maps predicting how radioactive substances would spread in the event of a nuclear accident for all of Japan's nuclear plants.

They indicated points in 16 directions where the accumulated radiation exposure levels could reach 100 millisieverts in seven days, based on evaluation guidelines from the International Atomic Energy Agency.

Although the simulations are to be used by local governments near nuclear plants to compile disaster plans, they do not take geographical data into account.

## **Trust of residents lost**

By Yuki Inamura  
Yomiuri Shimbun Staff Writer

People who live near nuclear power plants will likely be interested in the new simulation results, believing they contain important information that could affect their lives.

Even if only to be used for reference, the simulations were probably not seen by local residents as merely numerical data. With the repeated revisions, it is natural that trust has been damaged.

The NRA was established to better ensure safety by converting the old nuclear authorities, which were criticized for being mere rubber stamps for the industry, into a more trustworthy regulator.

However, NRA Chairman Shunichi Tanaka on Thursday talked about the simulation mistakes as if they were someone else's problem. "It was our first failure and we learned some good lessons by reflecting on what happened," he said.

The root of the problem may be in that the simulations were ordered by NISA and thus a defunct agency could be held responsible.

However, this incident seemed to show that the NRA has not yet settled into its role.

The recently established regulator has many important tasks, such as creating safety guidelines for nuclear power plants and conducting research on faults in and around the plants.

The NRA must show it can act in the public interest so it can regain the trust of the people.

December 15, 2012

## **IAEA International Conference in Fukushima: Many problems remain**

### **High-level int'l conference on nuclear safety starts in Fukushima**

<http://mainichi.jp/english/english/newsselect/news/20121215p2g00m0dm026000c.html>

KORIYAMA, Japan (Kyodo) -- A high-level international conference on nuclear safety started Saturday in Japan's northeastern prefecture of Fukushima, with participants expected to affirm that safety is a prerequisite for using nuclear power and assisting human resources development for countries seeking the energy option is vital.

The three-day event, organized by the Japanese government and the International Atomic Energy Agency, is meant to share the lessons learned from the Fukushima Daiichi plant disaster last year and to discuss the progress in global efforts to strengthen nuclear safety.

The conference, held in the city of Koriyama, brings together officials of IAEA member states, many of whom are represented at the ministerial level, and relevant international organizations.

An outcome document is expected to be issued following Saturday's plenary session.

According to a draft document obtained earlier, participants are expected to stress that there should be no complacency in safety matters, while welcoming the progress seen in the implementation of the IAEA Action Plan on Nuclear Safety, which calls on members to undertake safety assessments of nuclear plants and reinforce the effectiveness of regulatory bodies.

With nuclear power remaining a key source of energy for many nations, including developing ones, even after the Fukushima crisis, the importance of helping member states embarking on nuclear power programs in their development of infrastructure and human resources would also be emphasized.

The draft also showed that Japan, as a country that experienced the world's worst nuclear crisis since the 1986 Chernobyl disaster, would be encouraged to continue to share information on the lessons learned from the crisis, on the progress in decommissioning the crippled reactors and cleaning the radiation-contaminated land.

During the crisis triggered on March 11, 2011, Japan revealed how ill-prepared it was against tsunami-induced severe accidents, seeing three reactors at the plant suffer core meltdowns after they lost their key cooling functions amid a loss of all electrical power.

Around 160,000 people whose homes are in Fukushima Prefecture still live as evacuees due to the accident, which took nine months for the government to declare that the plant has been brought under control.

Regretting that safety may have been neglected under the regulatory setup that allowed promoters and regulators to have cozy ties, the Japanese government launched in September this year a new independent nuclear watchdog.

### **IAEA chief says Fukushima plant in better state, but problems remain**

<http://mainichi.jp/english/english/newsselect/news/20121215p2g00m0dm024000c.html>

FUKUSHIMA, Japan (Kyodo) -- Visiting International Atomic Energy Agency chief Yukiya Amano said Friday the situation of the crippled Fukushima Daiichi nuclear power plant has "improved a lot," but noted **many issues remain to be dealt with.**

Amano, who is in Japan to attend a high-level conference on nuclear safety starting Saturday in Fukushima Prefecture, made the remarks after visiting the plant for the second time following the nuclear crisis, triggered by a huge earthquake and tsunami on March 11, 2011.

"I was able to see the site only wearing a mask and gloves, without protective clothing," the IAEA director general told reporters after touring the plant for about 90 minutes with around 30 people, including those who plan to attend the upcoming conference.

But he also said **there are still some areas where the radiation level is "extremely high" and pointed to the "tremendous number" of tanks that contain contaminated water** as a result of continuing injection of coolant into the stricken reactors.

Allison Macfarlane, chairwoman of the U.S. Nuclear Regulatory Committee who visited the plant a day earlier, said in a statement that her country is "committed to working with Japan and other international partners to ensure long-term sustainability in the nuclear safety enhancements made since the accident."

As for the lessons learned from the disaster, she pointed to **the importance of having an independent regulator which operates in a transparent manner**, the need to put in place measures for preventing and mitigating serious nuclear accidents, and the significance of global cooperation for sharing experiences to reinforce nuclear safety worldwide.

In the crisis, Japan revealed how ill-prepared it was against tsunami-induced severe accidents, seeing three reactors at the plant suffer core meltdowns after they lost their key cooling functions amid a loss of all electrical power.

## **Fault risk at Higashidori plant**

### **Regulators: Faults beneath Higashidori nuclear plant likely active**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212150032>

Fault lines beneath the Higashidori nuclear power plant in Aomori Prefecture may be active, Nuclear Regulation Authority experts said on Dec. 14.

The announcement was made the same day the industry watchdog completed its two-day on-site survey of the plant, which is operated by Tohoku Electric Power Co. Another nuclear plant that carries the same name is under construction in Higashidori by Tokyo Electric Power Co.

Experts on the NRA's five-member panel told a post-survey news conference that they believed that shifts in geological formations across the fault lines being studied represent activity during the past 100,000 years.

The movements may have been induced by slippage along an active fault that lies elsewhere, but it cannot be ruled out that the surveyed faults are themselves seismically active, according to the panel members.

"There is repeated activity," said Hiroshi Sato, a professor of structural geology at the University of Tokyo. "I believe the faults are active."

NRA Deputy Chairman Kunihiro Shimazaki, who heads the panel, said the opinions of the panel members are "looking toward the same direction."

They are scheduled to meet on Dec. 20 in Tokyo to officially conclude whether the fault lines are active. An assessment that they are active would make it difficult to restart the nuclear reactor at the plant in the near future.

(This article was written by Ryuta Koike and Yu Kotsubo.)

## **Fault risk for Aomori nuclear plant is raised**

<http://www.japantimes.co.jp/text/nn20121215a1.html>

Jiji

HIGASHIDORI, Aomori Pref — Earthquake faults beneath the Higashidori nuclear power plant in Aomori Prefecture could be active and dangerous, a regulator said Friday.

Nuclear Regulation Authority Commissioner Kunihiro Shimazaki made this revelation at a press conference after a two-day on-the-spot survey of the plant, which currently has one Tohoku Electric

Power Co. reactor but, according to plans, will have another one built for the utility as well as two constructed for and run by Tokyo Electric Power Co.

Shimazaki and other survey participants will meet Thursday to consider the results of their probe.

If the regulators suspect the faults are active, it may be difficult for Tohoku Electric to restart the now-offline reactor amid safety concerns stemming from the triple-meltdown disaster at Tepco's Fukushima No. 1 power plant.

The experts Thursday confirmed four crush zones, including those running near the reactor 1 building. They continued the survey Friday to determine when the zones moved and find out whether there is any possibility they will move again.

Tohoku Electric has offered the explanation that fault slips under the plant site are caused by changes in groundwater levels.

But Shimazaki said Thursday he can't accept that explanation.

Survey team member Yota Kumaki, a professor at Senshu University, said the same day Tohoku Electric's claim raises many questions.

Another team member, Hiroshi Sato, a professor at the University of Tokyo, said he can't understand on what grounds the company drew such a conclusion.

Tohoku Electric maintains there are no active faults beneath the plant and thus there are no safety concerns.

The plant is the third nuclear power station to be inspected by the NRA for possible active faults, following Kansai Electric Power Co.'s Oi plant and Japan Atomic Power Co.'s Tsuruga plant, both in Fukui Prefecture. None of the earlier probes has reached a conclusion.

Following the latest survey, the agency plans to conduct on-site fault studies at Hokuriku Electric Power Co.'s Shika plant in Ishikawa Prefecture, Kepco's Mihama plant and the Japan Atomic Energy Agency's Monju fast-breeder reactor, both in Fukui.

### **Regulator suggests active faults beneath Higashidori nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20121215p2g00m0dm021000c.html>



AOMORI, Japan (Kyodo) -- A Japanese nuclear regulator Friday suggested that earthquake faults beneath the Higashidori nuclear power plant site in Aomori Prefecture could be active and dangerous.

Nuclear Regulation Authority Commissioner Kunihiro Shimazaki made the suggestion at a press conference after a two-day on-the-spot survey of the plant site owned by Tohoku Electric Power Co.

Shimazaki and other survey participants will meet next Thursday to consider the survey results. If they suspect the faults are active, it may be difficult for Tohoku Electric to restart the plant now left offline amid safety concerns after the March 2011 Fukushima Daiichi nuclear plant.

The Higashidori plant has one reactor with another reactor being planned. The reactor entered commercial operation in December 2005 and suspended operation for regular checkups in February 2011.

The second reactor construction plan has been left uncertain since the Fukushima accident.

Tokyo Electric Power Co. has a plan to build two reactors at a site neighboring the Higashidori plant. Construction of the first started in January 2011 and has been suspended since the Fukushima accident.

Shimazaki also indicated that the TEPCO plan could be affected because the faults beneath the Higashidori plant site stretch to the planned TEPCO plant site.

## **Tanaka on nuke industry's "lax approach" to safety**

### **Watchdog chief blasts nuclear industry for lax safety precautions**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212150044>

By JIN NISHIKAWA/ Staff Writer

The chief of the Nuclear Regulation Authority said the industry watchdog will not approve restarts of nuclear power plants under the current circumstances due to electric power companies' negligent handling of safety measures.

"I find the current situation exceedingly unsatisfactory," Shunichi Tanaka, chairman of the NRA, said of the utilities' safety precautions at an international meeting on Dec. 14. **"Reactors should not go online unless we are convinced of their safety."**

His remarks came at the meeting in Tokyo with top officials at nuclear regulators in the United States, Britain and France.

Tanaka said the Japanese nuclear industry's lax approach was behind last year's meltdowns at the Fukushima No. 1 nuclear power plant.

"The industry's stance was 'simply meeting with regulations is enough,'" he said. **"Safety culture has become a mere shell."**

Tanaka also said it will take enormous efforts to raise the awareness of safety in the nuclear industry.

The NRA was established in September to increase the nuclear regulator's independence after the accident at the plant, operated by Tokyo Electric Power Co.

**Even after the accident, reports have emerged of hazardous situations at nuclear power plants that could lead to an accident.**

Bent fuel rods were found in nuclear fuel assemblies kept at TEPCO's Kashiwazaki-Kariwa plant in Niigata Prefecture.

And the Japan Atomic Energy Agency was found to have failed to take proper procedures, including confirming safety, when it postponed checks for nearly 10,000 pieces of equipment at the Monju prototype fast-breeder reactor in Tsuruga, Fukui Prefecture.

December 18, 2012

## **A new worry**

## Quake-caused subsidence spreads

[http://www3.nhk.or.jp/daily/english/20121218\\_05.html](http://www3.nhk.or.jp/daily/english/20121218_05.html)

The Environment Ministry says nearly 6,000 square kilometers of land across Japan have subsided by more than 2 centimeters in the last fiscal year.

The figure is about 1,000 times greater than in the previous fiscal year that ended March last year, and the largest-ever since records began in 1978.

Municipal organizations that extract underground water assess land subsidence on a regular basis.

About half the 30 tested areas in 20 prefectures were recorded as sinking more than 2 centimeters. This level is judged to have a potential impact on buildings' stability.

The ministry says Kesennuma in Miyagi Prefecture sank deepest by 73.8 centimeters, followed by Ichikawa in Chiba by 30.9 centimeters. Tsukuba in Ibaraki sank by 15.2 centimeters.

Seven areas subsided by more than 10 centimeters. These lie in Tohoku, and in the Kanto region that includes Tokyo.

The ministry officials say the subsidence is attributable to last year's March 11th earthquake. They have expressed concerns over the spread of subsidence and further damage to buildings.

December 19, 2012

## Key to nuclear safety

<http://www3.nhk.or.jp/nhkworld/english/movie/feature201212192016.html>

December 20, 2012

## More active faults

### Team finds faults at nuclear plant possibly active

[http://www3.nhk.or.jp/daily/english/20121220\\_30.html](http://www3.nhk.or.jp/daily/english/20121220_30.html)

A panel of nuclear experts has found that 2 faults under a nuclear power plant in northern Japan may be active.

The findings could keep the plant offline for some time.

The panel of the Nuclear Regulation Authority made the assessment on Thursday after a 2-day on-site survey of the Higashidori plant in Aomori Prefecture last week.

The team's 5 experts include regulation authority official Kunihiro Shimazaki. They agreed that the 2 fissures should be deemed active faults.

Shimazaki summed the survey to conclude that the faults were possibly active.

The panel is to make a final decision after talking to operator Tohoku Electric Power Company next Wednesday.

If their findings are finalized, the Higashidori facility would become the second nuclear plant found sitting on possible active faults. The first was the Tsuruga facility on the Sea of Japan coast.

The reactors or other key facilities at Higashidori do not sit directly above an active fault. But the operator will nevertheless be required to drastically review its anti-quake measures.

## **NHK On Line**

<http://www3.nhk.or.jp/nhkworld/english/movie/feature201212202108.html>

## **Accident confirmed at Kashiwazaki**

### **Regulators confirm level 1 incident at Kashiwazaki-Kariwa plant**

<http://mainichi.jp/english/english/newsselect/news/20121220p2g00m0dm034000c.html>

TOKYO (Kyodo) -- Japan's nuclear regulatory authority said Wednesday that recently confirmed trouble with fuel rods stored in a spent nuclear fuel pool at Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant is a level 1 incident on a 7-point international scale.

A pair of fuel rods was touching as a result of deformation in the bundle of fuel rods, leading the Nuclear Regulation Authority to determine that the fuel had likely been loaded to the reactor core "in an abnormal situation." The NRA's assessment of the incident is provisional.

According to the NRA, the flow of the coolant water through the bundle of fuel rods could be hampered if rods stick together, making it easier for heat to accumulate. The authority, however, said no leakage of radioactive substances was observed.

Level 1 on the International Nuclear and Radiological Event Scale is a stage defined as an "anomaly." The Fukushima Daiichi nuclear power plant crisis last year and the 1986 Chernobyl disaster have been assessed as level 7 accidents.

TEPCO said it found on Oct. 16 deformed sections of spent nuclear fuel assemblies in the spent fuel tank of the No. 5 unit of the Kashiwazaki-Kariwa plant in Niigata Prefecture on the Sea of Japan coast.

## New ordinance to decide on active fault survey zones

### New Tokushima ordinance regulates construction of public facilities above active faults

<http://mainichi.jp/english/english/newsselect/news/20121220p2a00m0na014000c.html>

TOKUSHIMA -- An ordinance regulating land use above active fault lines was passed by the prefectural assembly here on Dec. 19, becoming the nation's first such prefectural ordinance.

The move comes as **an active fault line called the median tectonic line, which is feared to trigger a major earthquake, lies east to west in northern Tokushima Prefecture.**

**Under the ordinance, the Tokushima Prefectural Government will designate areas where disasters are anticipated in the event of shifts in active fault lines, and will mandate accurate surveys on such fault locations if public facilities are to be constructed. If an active fault runs right underneath a planned facility, the prefectural government will demand the cancellation of its construction.**

It is the first time for a prefectural assembly to pass an ordinance regulating construction above active fault lines, according the Tokushima Prefectural Government.

Earlier this year, the prefectural government surveyed the median tectonic line and announced its rough location over a 60-kilometer stretch. The prefectural government will designate the stretch as a "specified active fault survey zone" -- spanning 40 meters wide -- which will be subject to construction regulations. Prefectural authorities are set to release more detailed areas after conferring with local municipalities home to active fault lines sometime after April next year.

Facilities subject to regulations include schools, hospitals, hotels, movie theaters and storage sites for dangerous materials. The prefectural government will admonish the operator of a planned facility if the latter fails to conduct surveys on active faults, and will publicize the operator's name if it fails to follow the recommendation.

However, the probability of an earthquake occurring along the median tectonic line is extremely low, and the prefectural government will not demand the relocation of existing facilities.

"We would like to guide construction from a long-term perspective so that large-scale facilities will not be constructed above active fault lines," said a prefectural representative.

No established method to evaluate potential of active faults

December 21, 2012

### **NRA to examine method for fault impact forecast on nuke plants**

<http://mainichi.jp/english/english/newsselect/news/20121221p2a00m0na005000c.html>

In the wake of Japan's nuclear watchdog's recognition that the faults running under the Higashidori nuclear power plant in Aomori Prefecture are active, experts voiced difficulties in evaluating the potential effect of active faults on other nuclear facilities situated nearby, suggesting the need to examine methods for such fault impact forecasts.

The team of experts under the Nuclear Regulation Authority (NRA) concluded on Dec. 20 that the 10 faults running under the premises of the Higashidori Nuclear Power Station operated by Tohoku Electric Power Co. are a sequence of active faults, raising the need to review the facility's quake resistance even though active faults are not running directly underneath such key facilities as the reactor building.

The NRA has started examining methods for assessing the impact of active faults on nuclear facilities on the assumption that such faults could be found running close by key facilities at other nuclear power stations one after another. Based on the new evaluation methods, the NRA will determine whether relevant nuclear facilities can be reactivated or not.

"There are no established methods to adequately evaluate (the effect of) active faults (running near nuclear plants)," said NRA Commissioner Kunihiko Shimazaki after a panel meeting on Dec. 20.

Unlike the active faults found right beneath the reactor building at the Tsuruga Nuclear Power Station in Fukui Prefecture, the active faults under the Higashidori plant are not running right under its sole reactor building. Although the central government has not authorized construction of such key facilities as reactor buildings above active faults, it has approved the operation of reactors away from active faults **as long as the anticipated seismic intensity and its effect on the facility were predicted based on calculations and the facility's safety was confirmed.**

**However, the method to precisely predict the effect of a tremor triggered by active faults as close as 200 meters from a nuclear plant has yet to be established.** The NRA had earlier reviewed such evaluation methods at a separate expert panel meeting.

At a meeting on Dec. 7, Hiroyuki Fujiwara, a chief researcher at the National Research Institute for Earth Science and Disaster Prevention (NIED), said, "The method to evaluate active faults only 1 to 2 kilometers away (from nuclear facilities) has not been established. It would be difficult to improve evaluation methods in a short period of time." In response, Shimazaki said, "There are no adequate methods."

Shimazaki, however, stated following the Dec. 20 meeting, "Based on experience, it may be possible to predict that (the quake intensity) would be no greater than this or that. It's true there are no existing methods, but it doesn't necessarily mean we can't do anything."

The expert panel reviewing the evaluation methods for close-range active faults is poised to present a draft outline as early as January next year. "We won't be able to judge unless we come up with criteria. We'd like to wait for the discussions (at the expert panel)," said NRA Chairman Shunichi Tanaka.

When Tohoku Electric Power Co. applied for permission to construct the No. 1 reactor at the Higashidori plant in 1996, the utility reported to the central government that there were no active faults under the plant's premises. Furthermore, the utility stated in its interim report submitted to the government in 2008 in response to the 2006 revision to the government's seismic-resistance design screening guidelines that "There are no active faults in the neighborhood within 5 kilometers (from the Higashidori plant)."

"The old sketches (of layers studied by Tohoku Electric) lack credibility," said Shimazaki.

Tohoku Electric has heretofore anticipated an earthquake whose intensity is estimated to reach 450 gals based on a magnitude-6.8 common scenario earthquake used at the country's all nuclear plants without specifying the epicenter.

## Hamaoka - 22 meters anti-tsunami wall

### Chubu Electric adding 4 meters to breakwater at Hamaoka nuclear plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212210073>

Chubu Electric Power Co. will heighten a breakwater to better protect what is considered Japan's most vulnerable nuclear power plant from a tsunami caused by another major quake off the Pacific coast.

Akihisa Mizuno, president of Chubu Electric, told reporters on Dec. 20 that the 1.6-kilometer-long breakwater to shield the Hamaoka nuclear power plant will rise to 22 meters from the initially planned 18 meters.

The change came after the utility, using government data, estimated that an earthquake in the Nankai Trough in the Pacific Ocean could spawn a tsunami that would inundate the Chubu plant in Omaezaki, Shizuoka Prefecture, southwest of Tokyo.

The move is also apparently aimed to win the approval of local residents and municipalities to restart the plant.

The utility said the total cost to raise the breakwater and for other anti-tsunami measures at the plant will grow to almost 150 billion yen (\$1.78 billion). Completion of the breakwater is now expected late next year from the initially planned end of March.

After the tsunami last year led to the meltdowns at the Fukushima No. 1 nuclear power plant, Prime Minister Naoto Kan instructed Chubu Electric to shut down operations at the Hamaoka plant, citing its vulnerability to natural disasters.

In August, a government-sponsored expert panel predicted that a maximum 19-meter-high tsunami could hit the coast of Omaezaki following a Nankai Trough earthquake.

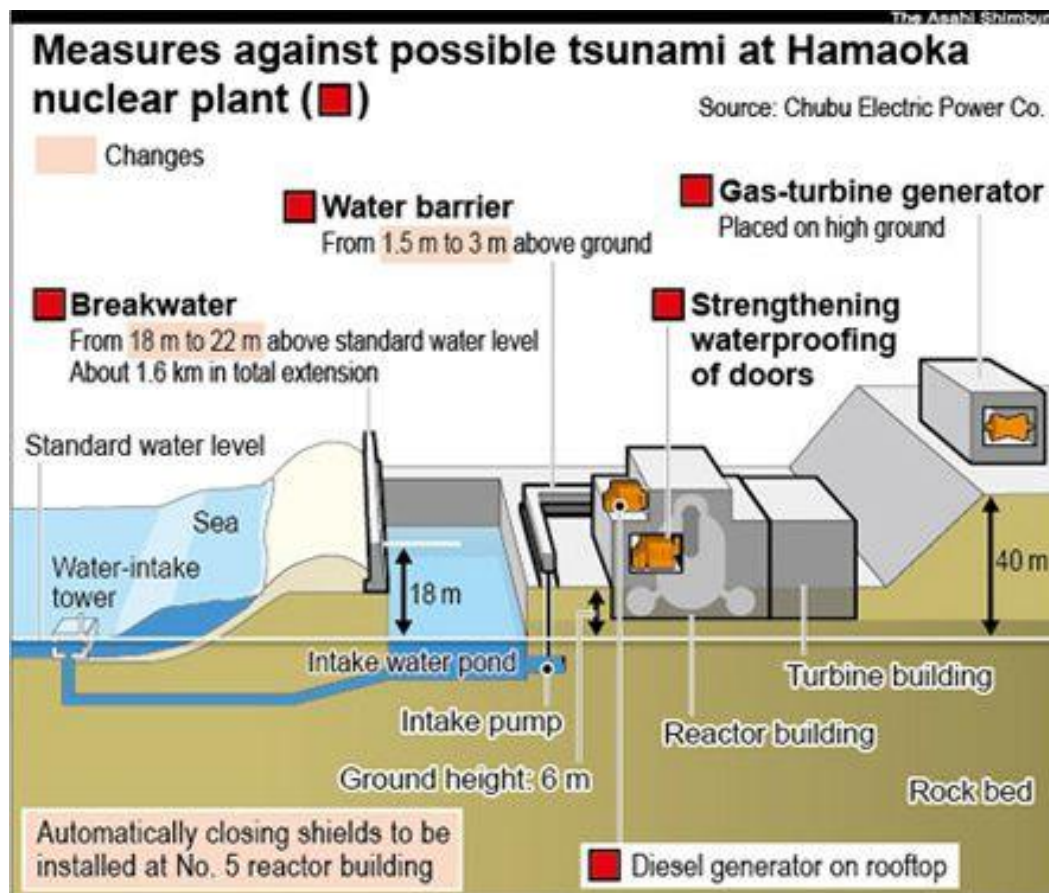
Chubu Electric's own studies showed that after hitting the planned 18-meter-high breakwater, the tsunami would reach a maximum 21.4 meters and breach a 1-km section of the wall. The flood levels would be 1 to 3 meters around the No. 3 and No. 4 reactor buildings and 1 to 6 meters around the No. 5 reactor building.

The utility said a 22-meter-high wall will be able to block the tsunami.



However, it said seawater in such an event will pour out of intake water ponds, inundating most areas around the No. 3, No. 4 and No. 5 reactor buildings up to 1 meter and flooding some areas up to 2 meters.

To deal with such a situation, the utility will install shields that automatically close at an opening at the No. 5 reactor building.



### Hamaoka plant to be protected by 22-meter seawall to counter tsunami

<http://mainichi.jp/english/english/newsselect/news/20121221p2g00m0dm006000c.html>

NAGOYA (Kyodo) -- Chubu Electric Power Co. said Thursday it has decided to increase the height of a seawall it is building at its Hamaoka nuclear power plant to 22 meters as part of its efforts to counter quake-triggered tsunami.

"We've decided to increase the height of the seawall to prepare for largest-class tsunami," company President Akihisa Mizuno said at a press conference, referring to the decision to make the seawall 4 meters higher than earlier planned.

The seawall at the plant in Shizuoka Prefecture is expected to be capable of blocking 19-meter-high waves the government has estimated to possibly approach if a huge earthquake hits the Tokai region in central Japan, allowing flooding to occur only through water intake chambers.

The cost for the additional construction work will reach several billions of yen. The utility will not change its plan to finish installing tsunami countermeasures by December next year.

Chubu Electric was asked by the government in May last year to suspend operations of all the reactors at the Hamaoka plant until sufficient countermeasures are taken, given it is known to be standing on an assumed epicentral area for a massive earthquake.

The government made the request in the wake of the nuclear crisis at Tokyo Electric Power Co.'s Fukushima Daiichi complex, triggered by the magnitude 9.0 earthquake and ensuing tsunami on March 11 last year.

## Another active fault (Higashidori plant)

### **Faults under Aomori nuclear plant site probably active: NRA panel**

Kyodo

<http://www.japantimes.co.jp/text/nn20121221a1.html>

A panel under the Nuclear Regulation Authority agreed Thursday that faults under Tohoku Electric Power Co.'s Higashidori atomic plant in Aomori Prefecture are probably active, rejecting earlier arguments to the contrary by the utility.

The situation does not violate the nation's nuclear plant laws because the faults do not run directly beneath the sole reactor at the Higashidori complex, but it may make it difficult for the utility to have the reactor restarted anytime soon.

The Higashidori plant is the third site where the NRA, which debuted in September, has sent experts to check faults suspected of being active.

The focus of the discussion has been the fault F-3, which runs vertically through the plant's premises, and fault F-9, which parallels F-3.

Tohoku Electric has said deformations observed in geological layers were created by clay minerals that swelled on exposure to water, and not because active faults exist under the complex.

The reactor at the Higashidori plant started commercial operations in December 2005 and went offline for regular checks in February 2011, shortly before the nuclear crisis erupted at Tokyo Electric Power Co.'s Fukushima No. 1 plant.

The area just north of the Higashidori plant is also where Tepco plans to build its own Higashidori plant.

Another team of experts led by the regulatory body has already agreed that a fault running directly underneath a reactor at Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture is probably active, an assessment that could leave the utility with no option but to scrap the unit.

A similar team appointed by the NRA visited Kansai Electric Power Co.'s Oi plant, also in Fukui Prefecture, for an assessment, but it has not yet reached a conclusion. Two reactors at Kepco's Oi plant are the only units now operating in Japan.

### **Higashidori N-plant crush zones seen active**

<http://www.yomiuri.co.jp/dy/national/T121221004316.htm>

Jiji Press

A Nuclear Regulation Authority research team on Thursday agreed that crush zones beneath the Higashidori nuclear power plant in Aomori Prefecture are likely to be active faults.

"It is hard to accept any claim that the crush zones are not active faults," said NRA Acting Chairman Kunihiro Shimazaki, who heads the team of experts named by the regulatory body.

The team will meet again Wednesday to hear explanations from Tohoku Electric Power Co., the operator of the nuclear power plant. If the nuclear authority concludes the crush zones, or fractured areas in

bedrock, are really active faults, it would be difficult to restart the plant's 1.1-million-kilowatt reactor, at least for the time being.

The team has confirmed the likely presence of an active fault under Japan Atomic Power Co.'s Tsuruga nuclear power plant in Fukui Prefecture. Higashidori is the second facility beneath which the team has discovered the problem.

Adjacent to the Higashidori plant, a Tokyo Electric Power Co. nuclear plant is under construction. TEPCO's plant will also face a similar problem, as some of the crush zones extend under the site of TEPCO's facility.

It is extremely difficult to rule out the possibility that the zones under TEPCO's site are active faults, said team member Yasuo Awata, researcher at the National Institute of Advanced Industrial Science and Technology.

The team focused mainly on the F-3 and F-9 crush zones, both of which run north-south. The zones are only 200 to 400 meters from the No. 1 reactor building of Tohoku Electric's Higashidori plant.

Team member Heitaro Kaneda, associate professor at Chiba University, warned that if these zones move, an earthquake with a magnitude of more than 7 could occur.

Tohoku Electric has not assessed the effects of possible crush zone movements on the reactor or any other facilities in the Higashidori plant. The firm may have overlooked the possibility the crush zones will move, Shimazaki told a news conference.

December 22, 2012

## **New earthquake probability map from gov't**

### **Probabilities of strong quakes up in eastern Japan**

<http://mainichi.jp/english/english/newsselect/news/20121222p2g00m0dm004000c.html>

TOKYO (Kyodo) -- The government released its latest earthquake probability map of Japan on Friday, showing an increased likelihood of strong earthquakes occurring in the Kanto region, including Tokyo, based on findings following the devastating March 2011 earthquake in northeastern Japan.

The map raised the probability of a strong earthquake measuring "lower 6" or more on the Japanese seismic intensity scale of 7 in the coming 30 years by 31 percentage points from the 2010 estimate to 62.3 percent for Mito, Ibaraki Prefecture.

The probability also rose by 11.9 points to 75.7 percent for Chiba city, by 4.1 points to 71.0 percent for Yokohama city, by 4.9 points to 27.3 percent for Saitama city and by 3.6 points to 23.2 percent for Tokyo.

Among major Japanese cities, Shizuoka posted the highest probability of 89.7 percent, though down 0.1 point from 2010.

High probabilities of strong earthquakes in waters off Ibaraki Prefecture and other zones were taken into account after the March 2011 earthquake, said the government's Earthquake Research Committee that made the map for Jan. 1 this year.

The probabilities had been underestimated at some locations before the disaster, it said. Regions with higher probabilities should further enhance disaster reduction efforts, the committee said.

## **Probability of strong quakes revised upward for eastern Japan**

Kyodo

<http://www.japantimes.co.jp/text/nn20121222b7.html>

December 23, 2012

## **Magnitude of quake predictions upgraded**

## **Probability of major quake in Kanto rises sharply**

The Yomiuri Shimbun

<http://www.yomiuri.co.jp/dy/national/T121222003036.htm>

The government has upgraded the probability of a powerful earthquake--lower 6 on the Japanese seismic intensity scale of 7, or stronger--to hit cities in the Kanto region within 30 years, with Mito at 62 percent and Chiba at 75 percent.

The Earthquake Research Committee of the government's Headquarters for Earthquake Research Promotion released an earthquake probability map for the first time in two years.

Taking into consideration the effect of the Great East Japan Earthquake, the committee upgraded the magnitude of earthquakes predicted in waters off the quake-hit regions, compared with the 2010 map.

The committee predicted a quake with a maximum magnitude of 8 could occur off Ibaraki Prefecture or the Boso Peninsula--where plate boundary deformations associated with earthquakes remain. The probability of being hit by large quakes grew dramatically, mainly in the coastal areas of the Kanto region, at 62.3 percent in Mito and 75.7 percent in Chiba.

The probability is also high along the Nankai Trough--which stretches from off Shizuoka Prefecture to the Shikoku and Kyushu regions--where magnitude-8 quakes, such as the Tonankai and Nankai earthquakes, have repeatedly occurred. The map indicated Shizuoka had an 89.7 percent possibility and Tsu, 87.4 percent.

The map shows the probability of the country's future earthquakes with an intensity of lower 6 or stronger in the next 30 years beginning Jan. 1 next year.

The map has been produced since 2005, excluding 2011. The committee, which is currently reviewing measures to predict quakes following last year's Great East Japan Earthquake, released the provisional version Friday.

As regions with a low probability of quakes have been hit by major quakes, the committee is working to improve the accuracy of the map.

The committee said it plans to release a revised map based on new measurements as early as next year.

December 25, 2012

## How to reassure your neighbours

### **Fault-linked nuke plants sitting on 800 tons of fuel**

Jiji

<http://www.japantimes.co.jp/text/nn20121225a2.html>

A combined 800 tons of spent nuclear fuel is being stored at two power stations thought to have active quake faults running underneath them.

Japan Atomic Power Co., operator of the Tsuruga plant in Fukui Prefecture, said Sunday that the storage pool of reactor 2 contains roughly 500 tons of spent fuel and the pool for reactor 1 has about 80 tons.

Beneath both buildings are crush zones that have been judged active faults by the Nuclear Regulation Authority. And another active fault has been found 250 meters away from unit 2.

At the Higashidori plant in Aomori Prefecture, meanwhile, Tohoku Electric Power Co. said Sunday that there are 131 tons of spent fuel inside reactor 1 and another 104 in the building's fuel pool. The building is 200 to 400 meters from two crush zones that have been determined to be active faults.

Ruling out the existence of active faults under the reactors, both Japan Atomic Power and Tohoku Electric said they have no plans to relocate the plants.

But if the crush zones in question actually move, the fuel pools' cooling systems could be damaged, experts warn.

Nuclear fuel generates much less heat once it's spent, but it still must be left to cool in water pools for about five years. The three reactors at the Tsuruga and Higashidori plants were halted last year.

Kansai Electric Power Co.'s Oi power plant has 262 tons of spent fuel in reactors 3 and 4, the only units operating in Japan, and 1,329 tons in the reactor buildings' pools.

The NRA plans to conduct on-site fault checks at the Oi plant, also in Fukui, from Friday.

## How much spent fuel sitting on top of active faults?

### Fault-linked nuke plants sitting on 800 tons of fuel

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The NRA plans to conduct on-site fault checks at the Oi plant, also in Fukui, from Friday.

December 26, 2012



## **Experts conclude nuclear plant fault assessment**

[http://www3.nhk.or.jp/daily/english/20121226\\_28.html](http://www3.nhk.or.jp/daily/english/20121226_28.html)

Experts from Japan's Nuclear Regulation Authority say 2 faults under a nuclear power plant in northern Japan may be active.

Their assessment could keep the plant offline for some time.

On Wednesday, one member of the Nuclear Regulation Authority, Kunihiro Shimazaki, and 4 other experts gave their final assessment of an inspection they made earlier this month at the Higashidori plant in Aomori Prefecture.

At a meeting last Thursday, they said 2 fissures under the plant may be active.

At Wednesday's session, plant operator Tohoku Electric Power Company argued that the fissures are not active.

The utility said the faults have hardened deep under the ground and there are no indications they have moved in recent times.

The experts pointed to a lack of evidence substantiating the utility's claim and said the claim is insufficient to declare the fissures not active. They also said the utility's flat denial of the possibility that the faults are active makes them worry about whether it can handle nuclear plants safely.

Shimazaki said his team has found no evidence to contradict the view that the faults are active.

The team will finalize a report on their findings in early January.

Tohoku Electric will have to review its anti-quake measures at the plant, taking into account the presence of active faults within the grounds of the facility.

This is the second case in which experts have found faults under a nuclear plant active. Earlier this month, they determined that faults running underneath the Tsuruga nuclear plant in Fukui Prefecture are active.

December 27, 2012

## **Confirmed: Higashidori on active faults**

### **Panel retains view faults under Tohoku Electric atomic plant active**

<http://mainichi.jp/english/english/newsselect/news/20121227p2g00m0dm025000c.html>

TOKYO (Kyodo) -- A panel of Japan's nuclear regulatory authority concluded Wednesday that geological faults running under Tohoku Electric Power Co.'s atomic power plant in Aomori Prefecture are active, clouding the prospects for the plant's reactivation.

The conclusion was unchanged from what panel members agreed in their previous meeting last week, although Tohoku Electric officials were given an opportunity during Wednesday's meeting to argue that there are no active faults at the site that could undermine the safety of the sole reactor at the Higashidori plant.

"There were no facts that made us correct the recognition we reached earlier," Kunihiro Shimazaki, the head of the panel and a commissioner of the Nuclear Regulation Authority, told a news conference after the meeting.

The seismologist also said that he expects the utility to carry out investigations based on the idea that active faults exist at the plant and evaluate their impact.

The faults in question are not seen to run directly beneath the reactor at the Higashidori complex, but the panel's assessment highlights the difficulty of putting the reactor back online anytime soon as it is necessary to reassess the plant's quake resistance and take measures to reinforce the facilities.

"Even if there were an application (for reactivation) based on a view that there are no active faults, I have to say that is wrong," Shimazaki said.

Tohoku Electric's Executive Vice President Takeo Umeda told a separate news conference that his company has no intention of backing away from its view that the faults are not active and will seek to "enhance its explanation" by conducting further investigation at the site.

The faults judged as active include one called F-3, running vertically through the plant's premises, and another called F-9, located parallel to F-3.

The two have been observed at the southern area of the plant's premises but are known to be stretching toward the northern area close to the No. 1 reactor building and the adjacent land where Tokyo Electric Power Co. plans to build its own Higashidori plant.

In the process of agreeing that the faults are probably active, the members of the panel have pointed to such findings as irregular elevated areas seen in the land form and a section of flat stones found close to a fault surface that they say is a feature of a strike-slip fault.

Tohoku Electric officials tried to counter this view by showing that some fault zones of crushed rocks are found to be consolidated deep underground, suggesting that it is unlikely the faults have moved in recent geological time. But the panel members were not convinced.

The reactor at the Higashidori plant entered commercial operation in December 2005. The plant is the third site that the nuclear regulatory body, launched in September, has sent a panel of experts to in order to check faults suspected to be active.

Another team of experts has already agreed that a fault running directly underneath a reactor at Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture is likely to be active, an assessment that could leave the company with no option but to scrap the unit.

A similar team appointed by the regulatory body visited Kansai Electric Power Co.'s Oi plant, also in Fukui Prefecture, for an assessment, but it has not yet reached a conclusion.

## **Tohoku Electric fails to convince NRA that faults are inactive**

Kyodo

<http://www.japantimes.co.jp/text/nn20121227a4.html>

A Nuclear Regulation Authority panel said Wednesday it remains convinced that geological faults running under Tohoku Electric Power Co.'s atomic power plant in Aomori Prefecture are active, indicating the facility's sole reactor cannot be restarted.

The panel reached the same conclusion in an earlier meeting. On Wednesday, however, Tohoku Electric officials were given the opportunity to argue their claim that clay swollen with water was responsible for deformations in geological layers.

"There were no facts that made us correct the recognition we reached earlier," Kunihiro Shimazaki, the head of the panel and an NRA commissioner, told reporters after the meeting.

He also said he expects the utility to evaluate the impact of the faults on the assumption they are active. Although the faults don't run directly beneath the sole reactor at the Higashidori complex, a reassessment of the plant's quake resistance, as demanded by the panel, will keep the reactor offline for the foreseeable future.

The faults deemed active, including two dubbed F-3 and F-9, run parallel and lengthwise through the plant's premises.

Observed at the southern end of the plant, they are known to stretch to the north, close to the reactor 1 building and to adjacent land that Tokyo Electric Power Co. intended to build its own Higashidori plant on.

The panel members have pointed to irregular elevated areas and other findings that indicate the faults are active.

### **Route to reactor restarts a rocky one for Abe Cabinet**

<http://mainichi.jp/english/english/newsselect/news/20121227p2a00m0na013000c.html>

The new administration of Prime Minister Shinzo Abe is set to steer Japan off the road to zero nuclear power, but with public trust in atomic energy at an all-time low, a new energy route that includes restarting nuclear reactors looks less than smooth.

The inclusion of Akira Amari as minister of state for economic and fiscal policy, and Toshimitsu Motegi as minister of economy, trade and industry in the new Cabinet has made the administration's intent clear: to get reactors back to feeding the power grid and, in the words of one senior official with the governing Liberal Democratic Party (LDP), "providing a stable supply of electricity that is indispensable" to businesses.

The LDP's predecessor in government, the Democratic Party of Japan (DPJ), had pledged to end nuclear power in the country by the 2030s, and besides two reactors at Kansai Electric Power Co.'s Oi power plant, no halted nuclear reactors have gone back online since the beginning of the Fukushima nuclear disaster. With 48 of Japan's 50 reactors off-line, power companies' profits nosedived as they were forced to buy fuel for thermal power stations to make up for the lost generating capacity.

Tokyo Electric Power Co. (TEPCO) -- operator of the stricken Fukushima No. 1 nuclear plant -- bumped its electricity rates up more than 8 percent on average on Sept. 1 this year to try and cope, while Kansai Electric and Kyushu Electric Power Co. have both applied to the government for permission to raise rates starting in April next year.

The next step in TEPCO's business plan is a sequential restart of the seven reactors at its Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture sometime after April -- a move the company has labeled a precondition for curing its balance sheet of its current bout of red ink. Kansai Electric and Kyushu Electric, too, have included reactor restarts beginning July next year in their business plans. Putting off those

restarts risks yet more rate hikes, posing a danger to the economic health of both businesses and households.

Restarts are, however, dependent on passing tough safety standards to be set by July 2013 by the Nuclear Regulation Authority (NRA), launched in September this year in response to the Fukushima nuclear disaster. In addition to setting strengthened earthquake and tsunami countermeasure standards, the NRA is also expected to make power companies take measures against severe nuclear accidents. Even if the utilities fast-track new countermeasures, it's possible they will not be able to get reactors back online by next year's peak power consumption period in the summer.

Moreover, the NRA looks unlikely to approve the restart of reactors at two plants -- Japan Atomic Power Co.'s Tsuruga station and Tohoku Electric Power Co.'s Higashidori plant -- after declaring it highly likely that there are active fault lines running beneath them.

**"The basis of our judgment is scientific,"** NRA Chairman Shunichi Tanaka told a Dec. 26 news conference. "Whatever politicians have to say on the issue, it matters to us not at all."

### **New nuclear evacuation standard to be delayed**

[http://www3.nhk.or.jp/daily/english/20121227\\_23.html](http://www3.nhk.or.jp/daily/english/20121227_23.html)

A decision on a new evacuation guideline for nuclear accidents in Japan will be delayed after experts questioned the basis of the draft guideline proposed by the country's nuclear regulatory body.

The Nuclear Regulation Authority had commissioned a panel of experts to draw up new standards based on its secretariat proposal.

The authority's draft calls for the immediate evacuation of residents within 5 to 30 kilometers of a nuclear power plant when radiation levels reach 500 microsieverts per hour. It also calls for temporary evacuation within a week in areas with radiation levels of 20 microsieverts per hour or more.

The figures are far stricter than the IAEA standards, which set 1,000 microsieverts for immediate evacuation and 100 microsieverts for evacuation within a week.

**The Nuclear Regulation Authority says it proposed the stricter standards to be on the safe side.**

But in a meeting on Thursday, experts voiced questions. Some said the authority had simply decided on a level half of that of international standard and this lacks a scientific basis. Others said the authority should adopt the international standard for the time being, while continuing discussions to set Japan's own standards.

As a result, the authority decided to start fresh discussions on the new standards.

The authority decided to set new rules based on actual radiation readings after authorities failed to make use of a radiation forecast system and could not evacuate residents promptly in last year's nuclear accident.

December 28, 2012

## Basis of NRA's judgement "scientific"

### **Nuclear watchdog to urge shutdown of Oi plant if active fault found**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201212280036>

By HISASHI HATTORI/ Senior Staff Writer

The Nuclear Regulation Authority said Dec. 27 it will recommend shutting down the Oi nuclear power plant in Fukui Prefecture if an active geological fault is found to run directly beneath the facility.

Shunichi Tanaka, NRA chairman, also told The Asahi Shimbun that the three-year timeline presented by the Abe administration is too short for safety screenings to be completed for all 50 nuclear reactors in Japan.

An NRA expert panel began a second session on Dec. 28 of on-site geological surveys at the Oi plant to decide whether a fault line cutting across its premises is active. Two reactors at the Oi plant are the only ones currently up and running in Japan.

Tanaka said he would use nonbinding "administrative discretion" measures to instruct Kansai Electric Power Co., operator of the Oi plant, to halt operations if the fault running beneath key equipment is found to be active.

The government's safety standards stipulate that no key component of a nuclear plant should be installed directly above an active fault.

The law on the regulation of nuclear reactors allows the issuance of a shutdown order in case of imminent danger.

However, Tanaka said it would be difficult to issue a legally binding shutdown order after the discovery of an active fault beneath an emergency water intake channel because that would be short of constituting "imminent danger."

He added that the Tsuruga nuclear power plant, also in Fukui Prefecture, will have to be decommissioned after an NRA expert panel found that an active fault likely runs directly beneath a nuclear reactor building.

Given the circumstances, he said safety screenings are impossible.

Tanaka acknowledged that a report has yet to be published and a formal conclusion has yet to be reached. "We cannot enter safety screenings (that should precede a restart) if it is officially decided that (an active) fault runs directly beneath a nuclear reactor building," he said. "No power utility would want to hold on to an inoperable nuclear reactor forever."

Tanaka said it would be up to the discretion of Japan Atomic Power Co., the Tsuruga plant operator, to decide whether to decommission it.

The Abe administration, which formally took office on Dec. 26, said it plans to decide within three years whether operations can resume at each of Japan's 50 nuclear reactors. That means the NRA has to examine whether each one of those reactors meets stringent safety standards.

Tanaka said he did not believe the screening procedures could be completed within three years.

A written agreement presented Dec. 25 by the coalition government of Shinzo Abe's Liberal Democratic Party and New Komeito pledged to respect the decisions of the NRA.

"Restarts of nuclear reactors will depend on the NRA's decisions, based on expert knowledge, that places foremost priority on safety in line with international standards," the agreement read. [we shall see]

## Stricter standards for evacuation discussed

### Evacuation standards toughened

Kyodo

<http://www.japantimes.co.jp/text/nn20121228a7.html>

A Nuclear Regulation Authority panel introduced new criteria Thursday for issuing atomic crisis evacuation orders that are twice as stringent as current international benchmarks.

The new standards will be reflected in a government guideline for nuclear disaster steps.

Under the new standards, in the event of a fallout crisis involving a nuclear plant, residents outside a 5-km radius of the facility will be told to evacuate within several hours if the radiation level reaches 500 microsieverts per hour. This compares with the figure set by the Vienna-based International Atomic Energy Agency: 1,000 microsieverts.

A restriction on the consumption of food produced near a disaster-hit power plant must be issued within a few days if radiation levels hit 0.5 microsievert per hour, compared with 1 microsievert set by the IAEA.

New criteria also call for issuing temporary evacuation orders to residents in areas where the radiation level reaches 20 microsieverts per hour. The figure is lower than the international standard of 100 microsieverts.

The government will begin collecting information to gauge the effects of a powerful earthquake — intensity of lower 6 or stronger on the Japanese scale to 7 — on municipalities where nuclear plants are located.

Residents within a 5-km radius of a nuclear plant will be asked to prepare to evacuate if all power at the plant goes out for more than five minutes or if the reactor cooling system cannot be run from the control room.

The panel calls for immediate evacuation of residents when a plant operator loses the ability to shut down reactors or when pressure in reactor containers reaches the maximum allowable limit.

The NRA debuted in September as a highly independent body to replace the Nuclear and Industrial Safety Agency and Nuclear Safety Commission. NISA was hit for failing to improve the defenses of Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant, which suffered three meltdowns last year after being overrun by tsunami.



December 29, 2012

## Suspicious at Oi remain

### Suspicious of active fault under Japan's only operational nuke plant persist

<http://mainichi.jp/english/english/newsselect/news/20121229p2a00m0na009000c.html>



A team from the Nuclear Regulation Authority conducts a survey of geological layers at the Oi nuclear power plant in Oi, Fukui Prefecture, on Dec. 28. (Mainichi)

Suspicious remain that the Oi Nuclear Power Plant in Fukui Prefecture sits on an active quake fault after a second survey at the site on Dec. 28.

A team from the Nuclear Regulation Authority (NRA) conducted the survey to determine whether a zone of crushed rock is an active fault, and will continue on Dec. 29 with results to be evaluated at a meeting in January. The Oi plant is now the only nuclear power station in Japan that is online.

The crush zone is thought to be located below an emergency channel for carrying seawater to cool the No. 3 and 4 reactors, currently in operation.

The survey team is composed of NRA acting chair Kunihiro Shimazaki and four experts from other organizations. The survey on Dec. 28 was done at the northern edge of the plant, with an excavation trench from the last survey expanded east by around one meter and west by around 40 meters.

The first survey in November found a mismatch in geological layers at the site, explained by plant operator Kansai Electric Power Co. as due to a landslide, which would leave a U-shaped bend in the layers. According to the power company, the mismatch was found at the eastern edge of the landslide, and it continued to insist on this explanation after the latest survey on grounds that a layer mismatch was also found in the western part of the expanded trench.

The survey team members all withheld their conclusions on the mismatch's cause, saying they wanted time to consider the matter. However, one of them, Toyo University professor Mitsuhiro Watanabe said he "had doubts" about the landslide hypothesis. Shimazaki, Shinshu University associate professor Daisuke Hirouchi and National Institute of Advanced Industrial Science and Technology head researcher Norio Shigematsu all say they are not satisfied with the landslide explanation. However, Ritsumeikan University professor Atsumasa Okada said, "The possibility (that it was from a landslide) is fairly high."

## **NRA team starts second fault survey at Oi plant**

Jiji

<http://www.japantimes.co.jp/text/nn20121229a6.html>

OI, Fukui Pref. — A Nuclear Regulation Authority team started a second survey Friday at the Oi nuclear power plant to determine whether there are active faults beneath it.

If the team confirms the presence of an active fault in the two-day study, Kansai Electric Power Co. will have to stop reactors 3 and 4, currently the only active reactors in Japan.

The previous on-site survey was conducted in November.

The team is investigating a crush zone, or a fractured area in bedrock, that is believed to run underneath a seawater intake channel for the emergency cooling system for reactors 3 and 4.

After the first study, the team was unable to rule out that the crush zone known as F-6 is an active fault. But the team did not reach a final conclusion because it could also not exclude the possibility that F-6 was caused by landslides.

The second survey includes inspections of pits newly dug by Kansai Electric, which is engaged in drilling work under an order from NRA deputy chief Kunihiro Shimazaki, who heads the team.

Kepeco has dug deeper and wider pits in a northern corner of the plant's premises to see whether F-6 reaches the area. More drilling requested by the authority has not finished, but Shimazaki said the team may be able to reach a conclusion without waiting for that to happen.

At a conference held prior to the second survey, Shimazaki noted that Kepeco people have complained that at least some of the research appears unnecessary. "But we do not see anything wasteful," Shimazaki stressed.

F-6 is believed to run north to south between units 2 and 3. If F-6 is active and moves, the emergency seawater intake channel for units 3 and 4 may be affected.

The channel is a crucial facility that would be used if the reactors lose normal cooling functions. Japan bans construction of nuclear plants on active faults.

### **Experts yet to reach conclusion on crush zone**

[http://www3.nhk.or.jp/daily/english/20121229\\_29.html](http://www3.nhk.or.jp/daily/english/20121229_29.html)

Experts from Japan's nuclear regulatory body are trying to determine whether there are any active faults running underneath the country's only online nuclear power plant.

A Nuclear Regulation Authority team ended a 2-day survey at the Ohi plant in Fukui Prefecture on the Sea of Japan on Saturday.

The 5-member team, led by the regulatory body's commissioner Kunihiro Shimazaki, examined a recently dug trench in the northern part of the plant's premises.

The plant operator, Kansai Electric, says the fissures beneath the plant were caused by landslides and are not active faults. However, on the first-day of the survey, experts expressed doubt about that explanation.

The team concluded Saturday's survey with an inspection of another trench dug on a ridge running through the plant's premises that revealed a fault.

The discovery of the fracture last month has sparked disagreement.

Some experts say it resulted from landslides while others say it was caused by a large active fault.

The team failed to reach a consensus on Saturday.

It plans to meet again in the coming weeks to form an assessment based on the survey results.

Shimazaki says there are various data that need to be studied, and suggested that it will take longer than the assessment they made earlier this month on the Tsuruga plant in Fukui Prefecture. They determined that the faults underneath that plant are active.

The regulatory body will call on Kansai Electric to shut down the Ohi plant if the fissures beneath the facilities are confirmed to be an active fault.

The plant's Number 3 and 4 reactors resumed operation in July, the first to do so since the nuclear disaster in Fukushima last year.

Shimazaki says he wants to hold further discussions after more trenches are dug near the reactors in the next few months. Observers see his remarks as indicating that the survey may be prolonged.

December 30, 2012

## **Japanese experts still divided over status of allegedly active fault beneath Oi nuclear power plant**

Kyodo

<http://www.japantimes.co.jp/text/nn20121230a4.html>

A team of experts examining the geological formation under Japan's sole operating nuclear power plant remained split over whether an active fault runs beneath it after completing their second field survey Saturday.

Four of the group's five members, including Kunihiro Shimazaki, head of the investigation team and a commissioner of the Nuclear Regulation Authority, indicated they could not rule out the possibility that an active fault runs underneath two restarted reactors at Kansai Electric Power Co.'s Oi power plant in Fukui Prefecture.

But team member and Ritsumeikan University professor Atsumasa Okada said that what the experts had observed "can be explained as a landslide," noting the rock formation differs from active faults he has previously seen.

Kansai Electric denies that an active fault exists under the Oi complex.

The outcome of the inspection is under the spotlight since the government approved the restart of reactors 3 and 4 at the Oi plant in July, making them the first atomic units to resume operations since the triple meltdown crisis at the Fukushima No. 1 plant last year saw all of the nation's reactors halted for safety checks.

In Saturday's survey, the team checked a test trench dug outward from the fracture zone of the F-6 fault, which is suspected of being active, as well as another test trench and the coastal area of the compound. The power station was built on the shores of the Sea of Japan.

While the team will hold an evaluation session early in the new year, its members are seen as unlikely to reach a unified conclusion anytime soon. A large amount of data were gathered Saturday, and the five experts all said they needed time to analyze them thoroughly before reaching a conclusion.

Shimazaki, the group leader, is meanwhile calling for more boring to be conducted in the southern part of the Oi complex under a new survey, which could further delay the team's final report.

If the F-6 fault — believed to run below the emergency water intake channel of the fully operational No. 3 and 4 reactors — is deemed to be active by the group, the NRA plans to order Kansai Electric to immediately take both units offline.

### **Researchers still split over fault assessment at Oi nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20121230p2g00m0dm058000c.html>

TOKYO (Kyodo) -- Experts investigating the geological formation under Japan's sole operating nuclear power plant remained split over assessing whether it is an active fault or not after completing their second field survey.

But another member, Ritsumeikan University Professor Atsumasa Okada, said what they saw "can be explained as a landslide," adding it is different from active faults he has seen so far.

The outcome of the inspection has come under the spotlight as the government approved the restart of the plant reactors' operations earlier this year even after the nuclear crisis at Fukushima Daiichi power plant triggered by the quake and tsunami last year.

Kansai Electric denies the formation is an active fault.

While the team will hold an evaluation session early in the New Year, they are unlikely to reach a unified conclusion then or any time soon as Shimazaki is also calling for another bore survey in the southern part of the premises of the Oi plant.

In the Saturday survey, the team checked the test trench dug outward from the F-6 fault fracture zone suspected of being an active fault as well as another test trench and landscapes along the ocean.

If F-6, believed to be running underneath the emergency water intake channel of the operating No.3 and No. 4 reactors, is decided to be an active fault, the NRA plans to demand the utility suspend the operations of the reactors.

December 31, 2012

## **NRA not quite sure - Further investigation needed**

### **Oi N-plant fault survey may be prolonged**

<http://www.yomiuri.co.jp/dy/national/T121230002382.htm>

OI, Fukui (Jiji Press)--The Nuclear Regulation Authority's on-site survey of the Oi nuclear power plant may be prolonged, as scientists who completed Saturday's inspection are unlikely to reach an immediate conclusion on whether there is an active fault.

Most members of a survey team commissioned by the authority stopped short of making a clear judgment on whether a crush zone under the plant site is an active fault after a second round of surveying at the Kansai Electric Power Co. plant in the town of Oi.

NRA deputy chief Kunihiro Shimazaki, who led the team, indicated at a news conference that it may take time to draw a conclusion. The judgment on the Oi plant is more difficult than that on Japan Atomic Power Co.'s Tsuruga nuclear power plant in Fukui Prefecture, he said.

After a single on-site survey in early December, experts agreed a crush zone running under the Tsuruga plant was highly likely to be an active fault.

If the NRA concludes there is an active fault under the Oi plant, its No. 3 and No. 4 reactors--the only reactors currently in operation in Japan--would face a possible shutdown.

The Oi reactors were brought back online in July. The nation's other 50 reactors remain idled in the wake of the accident at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, which was crippled by the March 2011 earthquake and tsunami.

On Saturday, the second day of the latest survey at the Oi plant, team members checked trenches dug for research, including one on the north side, where displacement was found in the geological layers.

Four of the five team members said it was possible there was an active fault running beneath the plant. However, Ritsumeikan University Prof. Atsumasa Okada said the displacement in the northern trench looked different from active faults he had seen before.

Shimazaki said Okada's view did not necessarily provide a basis for denying the existence of an active fault.

At a meeting to be held early next year to examine the survey's findings, team members are expected to focus on reasons for the displacement.

As for the F-6 crush zone, which is believed to run under critical facilities of the Oi plant, they will have difficulty reaching a conclusion as a reversal in Kansai Electric's explanations has made it difficult to determine its exact location

January 1, 2013

## We shall see

### **NRA has final reactor say-so: Motegi**

<http://www.japantimes.co.jp/text/nn20130101a9.html>

By KAZUAKI NAGATA

Staff writer

No matter what, no reactor will be restarted unless the Nuclear Regulation Authority has confirmed its safety, according to new trade and industry minister Toshimitsu Motegi.

**"We will entrust the safety of reactors to the NRA, which is independent.** There will be no restarts if safety is not confirmed," the new METI chief said in a group interview with The Japan Times and other media outlets Friday.

Motegi stressed that safety would come first before "any other factors," including the potential economic damage from staying away from nuclear power or unpopular spikes in electricity prices that consumers and industries may face.

But if the NRA judges a reactor safe, the government will allow it to be reactivated, said Motegi, a member of the same ruling Liberal Democratic Party that promoted the nuclear power safety myth over the past five decades of nearly uninterrupted rule.

Asked if he felt the LDP should take responsibility for recklessly promoting nuclear power under the NRA's predecessor, which was disbanded for failing to install safeguards at the quake- and tsunami-battered Fukushima No. 1 power plant that melted down in 2011, Mogege said the LDP came up with the idea of a strict regulatory like the NRA after reflecting on the Fukushima crisis and is committed to supporting the new body.

The NRA was established in September under the Democratic Party of Japan. It is drafting a new set of national safety guidelines that are expected to be completed around summer, which means no reactor restarts until then.

As for the government's new long-term energy plan the DPJ started to draft on the assumption that Japan would be free of atomic power by 2040, Motegi said his ministry plans to complete the plan also around summer.

At his inaugural press conference Thursday, Motegi said the LDP-New Komeito coalition will rethink the DPJ's zero-nuclear target and aims to come up with the best energy mix within 10 years.

He also said at the same conference that the new government will not immediately abandon Japan's trouble-prone nuclear fuel cycle policy, which is aimed at establishing a renewable supply of atomic fuel.

Japan committed to setting up the cycle in the 1950s, but the process has dragged on for decades as key facilities, particularly the Monju prototype fast-breeder reactor and the Rokkasho fuel-reprocessing plant, have struggled to overcome technical problems.

Also, abandoning the fuel cycle policy will draw fire from Aomori Prefecture, which hosts the Rokkasho plant and is concerned it may end up becoming a repository for radioactive waste.

Motegi said now is not the time to make the final decision on whether to abandon the policy, so "while the fuel cycle policy will be continued, we will consider its historical background and try to solve various issues related to it," he said.



Motegi, a University of Tokyo and Harvard graduate, will be juggling multiple portfolios. In addition to METI chief, he will be the LDP's policy chief and minister in charge of financial services and administrative reforms.

January 2, 2013

## No screening before new safety rules

### **NRA: Reactor screening to begin in July or later**

[http://www3.nhk.or.jp/daily/english/20130102\\_23.html](http://www3.nhk.or.jp/daily/english/20130102_23.html)

The head of Japan's nuclear watchdog says the screening of offline reactors cannot start until a new set of safety standards comes out in July. Only 2 of the nation's 50 reactors are currently online following the 2011 accident at Fukushima Daiichi.

Nuclear Regulation Authority chair Shunichi Tanaka spoke in an exclusive interview with NHK.

He stressed the authority cannot begin the process of examination on restarting the reactors unless new safety rules are made into law.

Last month, a team of experts from the NRA concluded that faults under 2 nuclear plants could be active. This may keep reactors at those facilities offline.

Referring to the team's conclusion, Tanaka said there is much less hesitation about making rulings based on science and objective facts. He added that until now, various other factors had been taken into consideration.

January 7, 2013

## Like building an apartment without a toilet

**Going nowhere: The Rokkasho spent-fuel reprocessing plant run by Japan Nuclear Fuel Ltd. is designed to dispose of radioactive waste at facilities in Aomori Prefecture. AP**



## **As plutonium hoard grows, so do Japan's headaches**

<http://www.japantimes.co.jp/text/nn20130107a3.html>

By MARI YAMAGUCHI

AP

ROKKASHO, Aomori Pref. — How is an atomic-powered island nation riddled with fault lines supposed to handle its nuclear waste? Part of the answer was supposed to come from this windswept village along the country's northern coast.

By hosting a high-tech facility to convert spent fuel into a plutonium-uranium mix designed for the next generation of reactors, Rokkasho was supposed to provide fuel while minimizing nuclear waste storage problems. Those ambitions are falling apart because years of attempts to build a "fast breeder" reactor, which would use the reprocessed fuel, appear to be ending in failure.

But Japan still intends to reprocess spent fuel at Rokkasho. It sees few other options, even though it will mean extracting plutonium that could be used to make nuclear weapons.

If the reprocessing plant is closed down, some 3,000 tons of spent waste piling up there will have to go back to the nuclear plants that made it, and those already are running low on storage space. There is scant prospect for building a long-term nuclear waste disposal site in a country where no one wants one in their backyard.

So work continues at Rokkasho, where the reprocessing unit remains in testing mode despite being more than 30 years in the making, and the plant that is meant to produce plutonium-uranium fuel remains under construction.

The AP was recently granted a rare and exclusive tour of the plant, where spent fuel rods lie submerged in water in a gigantic, dimly lit pool.

**The effort continues on the assumption that the plutonium Japan has produced — 45 tons so far — will be used in reactors, even though that is not close to happening to a significant degree.**

In nearby Oma, construction is set to resume on an advanced reactor that is not a fast-breeder but can use more plutonium than conventional reactors.

Its construction, which began in 2008 with an eye to the plant going online in 2014, has been suspended since the March 2011 Fukushima nuclear meltdowns, and could face further delays as the new nuclear watchdog prepares new safety guidelines.

If the government decides that it cannot use the plutonium, it will be breaking international pledges aimed at preventing the spread of weapons-grade nuclear material.

**It already has enough plutonium to make hundreds of nuclear bombs — 10 tons of it at home and the rest in Britain and France, where Japan's spent fuel is usually processed.**

Countries such as the United States and Britain have similar problems with nuclear waste storage, but Japan's population density and seismic activity, combined with the Fukushima disaster, make its situation more untenable in the eyes of its nuclear energy opponents. Some compare it to **building an apartment without a toilet**.

"Our nuclear policy was a fiction," former National Policy Minister Seiji Maehara told a Diet panel in November.

"We have been aware of the two crucial problems. One is the fuel cycle: The fast-breeder is not ready. The other is the back-end (waste disposal) issue," he said. "They had never been resolved, but we pushed for the nuclear programs anyway," Maehara said.

Nuclear power is likely to be part of Japan for some time to come, even though just two of its 50 functioning reactors are operating and it recently pledged to phase out nuclear power by 2040.

That pledge was made by a government that was trounced in last month's elections, and the conservative Liberal Democratic Party, back in the driver's seat, was the force that brought atomic power to Japan to begin with.

But LDP members have said they will spend the next 10 years figuring out the best energy mix, effectively putting a freeze on the nuclear phaseout.

Prime Minister Shinzo Abe has said that he may reconsider the previous government's decision not to build additional reactors.

Construction of Rokkasho's reprocessing plant started in 1993 and that unit alone has cost ¥2.2 trillion so far. Rokkasho's operational cost through 2060 will be a massive ¥43 trillion, according to a recent government estimate.

The reprocessing facility at the extremely high-security plant is designed to extract uranium and plutonium from spent fuel to fabricate MOX — mixed oxide fuel, a mix of the two radioactive elements. The MOX fabrication plant is set to be operational in 2016.

Conventional light-water reactors use uranium and produce some plutonium during fission. Reprocessing creates an opportunity to reuse the spent fuel rather than storing it as waste, but the stockpiling of plutonium produced in the process raises concerns about nuclear proliferation.

Fast-breeder reactors are supposed to solve part of that problem.

They run on both uranium and plutonium, and they can produce more fuel than they consume because they convert uranium isotopes that do not fission readily into plutonium.

Several countries have developed or are building them, but none has succeeded in building one for commercial use.

The United States, France and Germany have abandoned plans due to **cost and safety concerns**.

The prototype Monju fast-breeder reactor in Fukui Prefecture had been in the works for nearly 50 years, but after repeated problems, authorities last summer pulled the plug, deeming the project unworkable and unsafe.

Monju successfully generated power using MOX in 1995, but months later, a massive leak of sodium coolant caused a fire. Monju was given another test run in 2010 but stopped again after a fuel exchanger fell right into the reactor vessel, where it stayed for months.

Some experts also suspect that the reactor sits on an active fault line.

An independent team commissioned by the new Nuclear Regulation Authority is set to inspect faults at Monju early this year.

MOX was also burned in four of the country's conventional reactors beginning in 2009.

These reactors can use MOX for up to a third of their fuel, but that makes the fuel riskier because the plutonium is easier to heat up.

Three of the conventional reactors that used MOX were shut down for regular inspections around the time three Fukushima reactors exploded and melted down following the March 2011 earthquake and tsunami.

The fourth reactor that used MOX was among those that melted down.

Plant and government officials deny that the reactor explosion was related to MOX, although traces of plutonium from the unit were found far away from the plant afterward.

Japan hopes to use MOX fuel in as many as 18 reactors by 2015, according to a Rokkasho brochure produced by its operator in November.

However, even conventionally powered nuclear reactors are unpopular in Japan, and using MOX will raise even more concerns.

When launched, Rokkasho could reprocess 800 tons of spent fuel each year, producing about 5 tons of plutonium and 130 tons of MOX per year, becoming the world's No. 2 MOX fabrication plant after France's Areva, according to Rokkasho's operator.

The government and the nuclear industry hope to use much of the plutonium at Oma's advanced plant, which could use three times more plutonium than a conventional reactor.

Meanwhile, the plutonium stockpile grows.

Including the amount not yet separated from spent fuel, Japan has **nearly 160 tons**.

Few countries have more, though the U.S., Russia and Great Britain have substantially more.

"Our plutonium storage is strictly controlled, and it is extremely important for us to burn it as MOX fuel so we don't possess excess plutonium stockpile," said Kazuo Sakai, senior executive director of Rokkasho's operator, JNFL, a joint venture of nine Japanese nuclear plant owners.

Rokkasho's reprocessing plant extracted about 2 tons of plutonium from 2006 to 2010, but it has been plagued with mechanical problems, and its commercial launch has been delayed for years.

The operator most recently delayed the official launch of its plutonium-extracting unit until next year. The extracted plutonium will sit there for at least three more years until Rokkasho's MOX fabrication starts up.

Giving up on using plutonium for power will cause Japan to break its international pledge not to possess excess plutonium not designated for power generation.

That is why Japan's nuclear phaseout plan drew concern from Washington; the country will end up with tons of plutonium left over.

To reassure Japan's allies, government officials said the plan is only a goal, not a commitment.

Japan is the only nation without nuclear weapons that is allowed under international law to enrich uranium and extract plutonium without much scrutiny.

Government officials say they should keep the privilege. They also want to hold on to nuclear power and reprocessing technology so they can export that expertise to emerging economies.

Many officials also want to keep Rokkasho going, especially those in Aomori Prefecture, which hosts the reprocessing plant.

Residents don't want to lose funding and jobs, though they fear their prefecture may become a waste dump.

Rokkasho Mayor Kenji Furukawa said the plant, its affiliates and related businesses provide most of the jobs in his village of 11,000.

"Without the plant, this is going to be a marginal place," he said.

But Rokkasho farmer Keiko Kikukawa says her neighbors should stop relying on nuclear money.

"It's so unfair that Rokkasho is stuck with the nuclear garbage from all over Japan," she said, walking through a field where she had harvested organic rhubarb. "We're dumping it all onto our offspring to take care of."

Nearly 17,000 tons of spent fuel is being stored at power plants nationwide, almost entirely in storage pools. Their storage space is 70 percent filled on average.

Most pools will max out within several years if Rokkasho closes down, forcing spent fuel to be returned, according to estimates by a government fuel-cycle panel.

Rokkasho alone will not be able to handle all the spent fuel coming out once approved reactors go back online, and the clock is ticking for operators to take steps to create extra space for spent fuel at each plant, Nuclear Regulation Authority Chairman Shunichi Tanaka said.

**"Even if we operate Rokkasho, there is more spent fuel coming out than it can process. It's just out of balance,"** he said.

A more permanent solution — an underground repository that can keep nuclear waste safe for tens of thousands of years — seems unlikely, if not impossible.

The government has been drilling a test hole since 2000 in central Japan to monitor impact from underground water and conduct other studies needed to develop a potential disposal facility.

However, no municipality in Japan has been willing to accept a long-term disposal site.

"There is too much risk to keep highly radioactive waste 300 meters underground anywhere in Japan for thousands or tens of thousands of years," said Takatoshi Imada, a professor at Tokyo Technical University's Decision Science and Technology Department.

January 8, 2013

## **Nukes and South Korea**

### **South Korea to expand nuclear energy despite growing safety fears**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201301080051>

REUTERS

SEOUL--South Korea has no option but to expand its nuclear power plant program despite growing public concern over safety in the wake of Japan's Fukushima disaster in 2011 and a series of scares that closed two reactors last year.

The proportion of South Koreans who considered nuclear power safe fell to 34.8 percent in a survey conducted in November and published on Jan. 8, down from 40 percent in April 2011 and 71 percent in January 2010, the Ministry of Knowledge Economy said.

The ministry has been sharply criticized for its role as regulator and operator of the country's nuclear power plants, and one of its subsidiaries was accused of suppressing negative public opinion after the Fukushima disaster by not publishing polls.



A fake parts scandal closed two reactors last year and the industry suppressed details of the closure of the Kori No.1 reactor early in 2012.

"It is an urgent priority to recover people's trust and the safety of reactors just as it is unavoidable to maintain nuclear at a certain percentage of the total power supply, considering the power supply and demand situation," the ministry said.

The two troubled reactors were fully restarted last week, easing fears over winter power shortages.

Three others are offline for maintenance and operational approval, but power supplies remain a concern amid peak winter demand expected until the end of next month.

Asia's fourth-largest economy, which depends heavily on oil and gas imports, plans to add 11 reactors by 2024 on top of its **existing 23 reactors** which supply a third of the country's total power.

An earthquake and tsunami in Japan in March 2011 killed nearly 20,000 people and triggered the world's worst nuclear crisis in 25 years when the Fukushima No. 1 nuclear plant was destroyed, leaking radiation into the sea and air.

January 10, 2013

### 3 years probably not enough, says NRA

**Japan's nuclear regulator says checking the safety of all reactors in three years will be difficult**

<http://www.japantimes.co.jp/text/nn20130110b3.html>

Kyodo

It will be difficult to finish safety assessments on all of the nation's viable commercial reactors in three years, as sought by the new government led by the Liberal Democratic Party, the head of the Nuclear Regulation Authority said Wednesday.

Nuclear power plant operators are expected to apply to restart their idled reactors once the NRA, which was launched after the 2011 start of the Fukushima No. 1 nuclear plant triple-meltdown crisis, compiles new safety standards by July.

NRA Chairman Shunichi Tanaka said he does not believe all utilities with idled reactors will simultaneously apply to restart their combined 48 now-halted reactors at once, or in rapid succession, noting it will take time for some power plant operators to carry out the necessary antidisaster construction work to clear the safety standards.

"I don't think it will be possible to (restart all of the reactors) in three years, although we will act as swiftly as we can," Tanaka told reporters.

Only two reactors are currently online in Japan amid concerns over the safety of nuclear power, both at Kansai Electric Power Co.'s plant in Oi, Fukui Prefecture. The new LDP government of Prime Minister Shinzo Abe, launched after the general election in December, is expected to support the reactivation of reactors once they are deemed safe by the NRA.

Abe has said the new government's basic stance on energy issues is to finish deciding in three years which reactors can resume operations and to determine the country's future energy mix within 10 years.

### **Nuclear regulator says checking all reactors in 3 yrs difficult**

<http://mainichi.jp/english/english/newsselect/news/20130110p2g00m0dm027000c.html>

## **International cooperation on nukes pledged**

### **Japan, IAEA confirm readiness to boost cooperation on nuclear safety**

<http://mainichi.jp/english/english/newsselect/news/20130110p2g00m0dm026000c.html>

TOKYO (Kyodo) -- Foreign Minister Fumio Kishida confirmed in talks with International Atomic Energy Agency chief Yukiya Amano on Wednesday their readiness to strengthen cooperation in ensuring nuclear safety in light of the Fukushima Daiichi nuclear disaster.

During the 20-minute talks in Tokyo, the IAEA director general thanked Japan for its support for the U.N. nuclear watchdog's activities, expressing his readiness to lead international efforts to promote the peaceful use of atomic energy and strengthen the existing nonproliferation regime, according to the Foreign Ministry.

Praising the IAEA for its work on the North Korean and Iranian nuclear issues, Kishida vowed Japan's full support for the nuclear watchdog at a time when Amano's reelection for a second four-year term is almost assured.

With no other candidate having been nominated for the post of IAEA chief by the deadline of Dec. 31 last year, Amano is set to secure another four-year term from December this year. Amano, a former Japanese career diplomat, has served as IAEA head since December 2009.

## New: Even slow-slip plates can cause major quakes

### Scientists challenge accepted theory on where quakes occur

<http://ajw.asahi.com/article/0311disaster/analysis/AJ201301100056>

By SHIGEKO SEGAWA/ Staff Writer

**Even slowly shifting tectonic plates can cause major earthquakes**, something seismologists have previously considered impossible, two scientists said.

According to accepted seismological theory, seismic events occur when stress builds up in areas where two tectonic plates are fixed against each other and causes them to undergo a large slip.

It has been believed that little stress builds up in slow-slip regions, where plates slowly move against each other.

Hiroyuki Noda, a scientist with the Japan Agency for Marine-Earth Science and Technology, and a colleague at the California Institute of Technology jointly conducted computer simulations of earthquake cycles over millennia.

They showed that areas where plates slide against each other only slowly during normal times may undergo seismic slip when major movement caused by a large earthquake in a nearby fixed region propagates at high speeds toward the slow-slip region.

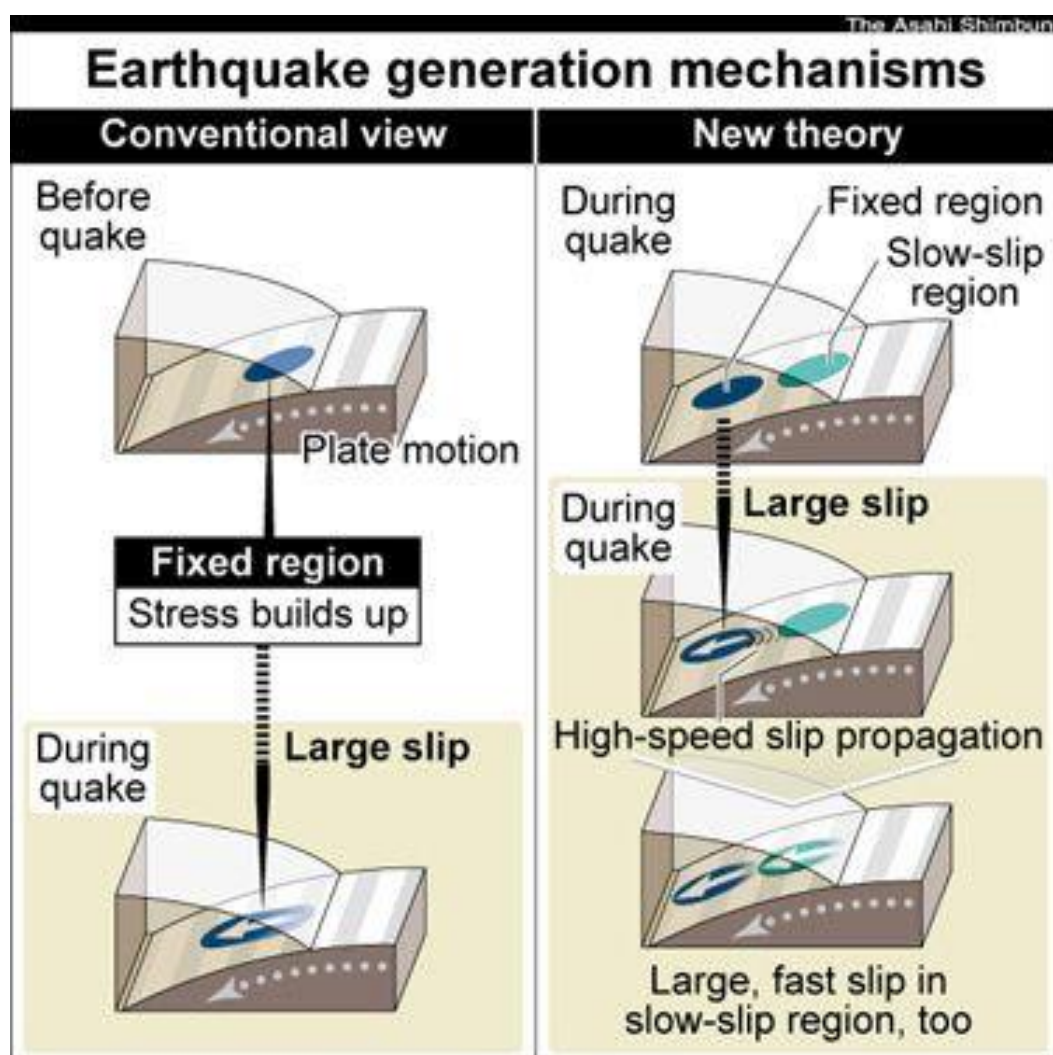
The numerical results also showed that a slow-slip region can turn into a fixed region under certain circumstances.

Before the Great East Japan Earthquake struck in March 2011, seismologists believed that little stress was accumulating and no large earthquake would likely occur in the areas around its hypocenter beneath the Japan Trench, where the oceanic plate is only slowly diving beneath the continental plate.

The devastating magnitude-9.0 temblor, which involved major slippage along that part of the plate boundary, was received as proof against the accepted seismological view.

"Plate motions are complicated," Noda said. "There is a need to evaluate risk carefully on the basis of long-term records, including records of tsunami deposits."

The research results were published online on Jan. 9 in *Nature*, a British scientific journal.



### **3/11 study finds clues to why faults thought 'stable' may suddenly slip**

AFP-Jiji

<http://www.japantimes.co.jp/text/nn20130110x3.html>

PARIS — Seismologists said Wednesday they have found clues as to why the March 11, 2011, Great East Japan Earthquake occurred on a fault previously deemed to be of little threat.

The findings, published Wednesday in the journal *Nature*, have repercussions for the country's earthquake strategy and for other locations, including California's notorious San Andreas fault, with a similar seismic profile, they said.

Hiroyuki Noda of the Japan Agency for Marine-Earth Science and Technology and Nadia Lapusta of the California Institute of Technology based their findings on a computer model of the March 2011 mega-quake, which triggered tsunami that killed about 19,000 people and wrecked the Fukushima No. 1 nuclear plant, sparking the world's worst atomic crisis in a generation.

The 9.0-magnitude earthquake struck off Tohoku in part of the so-called Japan Trench, where the Pacific plate ducks beneath the Okhotsk plate, on which the Japanese archipelago lies.

This area of the Japan Trench had been generally considered to be stable, as it was a "creeping" segment, meaning any movement of the plate there was smooth and regular.

A commonly accepted theory says this steady movement prevents stress from building up to the point where the fault rips open — rather like a safety valve on a steam engine.

But Noda and Lapusta suggest fault segments that have long-term, stable "creep" in fact weaken when a nearby section ruptures. And if the fault is infiltrated by hot geological fluids, this acts as a lubricant, helping a big slip to occur.

"Steadily creeping fault segments are currently considered to be barriers to earthquake rupture. Our study shows they may join large earthquakes, amplifying seismic hazard," said Noda.

The authors said they hope their work will be factored into Japan's earthquake awareness program. Some experts have accused the program of focusing obsessively on the risk to Tokyo.

The findings also have implications for risk assessment for the San Andreas, which also has a creeping segment regarded as a blocker for big earthquakes, said Noda.

"But whether it always acts as a barrier or can join a great earthquake is not a trivial question," he warned.

January 12, 2013

## Secondary control rooms for safety's sake

### **Nuclear watchdog to make secondary control rooms mandatory at power plants**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201301120044>

By JIN NISHIKAWA/ Staff Writer

The Nuclear Regulation Authority will require nuclear power plants to install secondary control rooms for reactor operations to guard against accidents from earthquakes, tsunami or acts of terrorism.

An NRA expert panel revealed the plan Jan. 11 in a draft outline of new safety measures.

The draft proposes obligatory "second control rooms," apart from existing central operation rooms, to enable access to remote controls to cool down nuclear reactors and vent gases.

The NRA plans to finalize the outline by the end of January and formulate a new set of safety standards for nuclear power plants in July. The new standards will be used in subsequent NRA decisions on whether idle nuclear reactors can be restarted.

The proposed secondary control rooms are part of new "safety facilities" capable of withstanding earthquakes and tsunami, which nuclear plant operators will be required to install at a distance from reactor buildings. The safety facilities will also include emergency power supply systems and cooling pumps, which will be able to help contain the spread of potential nuclear disasters.

Similar facilities are already in place at nuclear plants in Germany, Switzerland and elsewhere.

As the new facilities will need time to be installed, the NRA plans to determine a transitional exemption period and give the green light to reactor restarts if only their operators have presented plans to install the safety facilities.

The new standards will also require the utilities to have power trucks and fire engines parked and ready for emergency use at strategic places on site. Power utilities have already voluntarily stationed them at nuclear plants as part of emergency safety measures since the Fukushima nuclear disaster of March 2011.

The NRA will also press nuclear plant operators to install central anti-seismic buildings, which can withstand earthquakes and tsunami, and filtered vent equipment, which will prevent bulk releases of radioactive substances, at all nuclear plants.



A central control room for the No. 1 and No. 2 reactors of the Fukushima No. 1 nuclear power plant on March 23, 2011 (Provided by the Nuclear and Industrial Safety Agency)

January 13, 2013

## Emergency antinuke shelters

### Nuclear evacuation shelters to be set up

[http://www3.nhk.or.jp/daily/english/20130113\\_04.html](http://www3.nhk.or.jp/daily/english/20130113_04.html)

Japan's nuclear regulatory body has decided to prepare emergency shelters for people who live near nuclear plants to prevent them from being contaminated in case of an accident.

A government's guidelines suggest those who live within 5-kilometer radius of a nuclear facility should immediately leave the area during a nuclear emergency.

However, many Japanese nuclear plants are located on narrow peninsulas, which make it hard for residents living on the tip to escape quickly during an emergency. They often have to come closer to the plant before they can get off the peninsula.

The Secretariat of the Nuclear Regulation Authority says it is going to refit school gymnasiums and facilities for the elderly within the 5 kilometers radius of nuclear plants for use as evacuation shelters.

They will prevent radioactive dust from coming in by raising the air pressure inside and attaching filters to vents. Air showers will be also set up at the entrances to clean dust off people.

The nuclear regulatory body says about 50 facilities will be set up in 5 prefectures which have nuclear power plants on peninsulas. They are Miyagi, Shizuoka, Fukui, Ehime and Saga Prefectures.

January 16, 2013

## NRA sets new anti-tsunami heights

### Watchdog to define maximum tsunami heights for nuclear plants

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201301160053>

By RYUTA KOIKE/ Staff Writer

The Nuclear Regulation Authority decided Jan. 15 to set maximum heights of possible tsunami striking individual nuclear plants and obligate their operators to take commensurate safety measures.



The requirements will be included in a draft outline of the new standards on earthquake and tsunami preparedness, to be put together by the end of January, that will help the NRA decide whether to reactivate idled nuclear reactors or build new ones.

In the aftermath of the Fukushima nuclear disaster in March 2011, the new standards will obligate nuclear plant operators to place a maximum anticipated tsunami height for each plant and take measures to mitigate the impact of possible flooding, such as building levees of appropriate height and waterproofing buildings that house key equipment.

In addition to setting a reference for tsunami heights, at least one panel member called for defining a "minimum elevation" on which nuclear plants can be built.

However, one member said that such requirements should not be imposed on all regions across the board.

Further, the definition of active geological fault lines, for which the seismic risk on nuclear plants has to be evaluated, will be expanded to include all fault lines that have shifted during the past **400,000 years** or so. Currently, faults that have moved during the past 120,000 to 130,000 years are labeled "active."

The new standards will also necessitate detailed studies of subsurface formations, which affect the flow of seismic motion.

## 400,000 years ago

### Nuclear Regulation Authority to broaden definition of active faults

<http://mainichi.jp/english/english/newsselect/news/20130116p2a00m0na015000c.html>

The Nuclear Regulation Authority (NRA) is set to drastically broaden the definition of active faults to cover those that moved **400,000 years ago** or later in its new nuclear plant safety standards, according to a draft outline.

Under current standards, those that moved from 120,000 to 130,000 years ago or later are recognized as such in its atomic power plant safety standards.

The nuclear plant regulator will finalize the outline by the end of this month and draw up the new standards on nuclear plants' vulnerability to earthquakes and tsunami by July.

The draft, worked out by an NRA expert team, states that faults that repeatedly moved in recent years and have a possibility of moving in the future should be regarded as active faults when designing nuclear reactors' quake-resistance. It then says "the activity of faults as early as approximately 400,000 years ago should be assessed."

This is in line with the definition that the government's Headquarters for Earthquake Research Promotion made in 2010 that faults that moved approximately 400,000 years ago or later are active faults.

The guidelines for seismic-resistance designing of nuclear plants that the government compiled in 2006 recognizes faults that moved 120,000 to 130,000 years ago or later as active.

However, there have since been several cases in which experts cannot specify when faults on the premises of nuclear power stations moved, prolonging assessments.

JRA Commissioner Kunihiro Shimazaki points to the need to change the definition of active faults in nuclear plants' quake-resistance design. "In some cases, assessing whether faults on the premises of nuclear plants are active have been prolonged. Pointless discussions will disappear if the definition is reviewed."

The government does not permit the construction of nuclear reactor buildings just above active faults.

January 17, 2013

## **NRA needs more members**

### **Experts remain divided over whether Oi plant sits above active fault**

<http://mainichi.jp/english/english/newsselect/news/20130117p2g00m0dm030000c.html>

TOKYO (Kyodo) -- Experts appointed by the Nuclear Regulation Authority remained divided Wednesday over whether an active fault runs under an atomic power plant in western Japan, in a sign that discussions on the matter could be prolonged.

If the five-member panel concludes there is an active fault that could undermine the safety of the Oi plant in Fukui Prefecture, the NRA is likely to ask operator Kansai Electric Power Co. to suspend the Nos. 3 and 4 units at the plant, which are the only operating reactors in the country.

During the discussion, NRA commissioner and panel head Kunihiro Shimazaki tried to come up with a conclusion on whether slips found at a trench in the northern part of the plant's premises are running under important facilities and have the potential to cause damage to the installations.

Of the remaining four panel members invited from outside the NRA, two members opposed viewing the slips as active faults, including Ritsumeikan University professor Atsumasa Okada who reiterated there is

a high possibility that a landslide occurred in the area in question. The other two members, however, viewed the slips as possible active faults.

The meeting, which lasted over four hours, wrapped up with Shimazaki saying, "I want (the panel) to further consider the issue because I don't think safety matters have become completely clear."

As the panel failed to reach a conclusion after Kansai Electric enlarged the size of the trench in the northern area of the site, the panel will look into a large-scale trench to be excavated in the southern area during its next investigation.

The next panel meeting will be held in February or later so it can seek advice on whether Kansai Electric's plan to dig the new trench is appropriate, an official of the NRA secretariat said.

The panel started holding meetings from late October, hoping to determine whether a fault called F-6, a zone of crushed rock that runs north-south between the Nos. 1-2 reactors and Nos. 3-4 reactors, is active.

The fault is believed to run under a water channel that would be used to take in seawater to cool reactors in the event of an emergency.

Even if the slips in the northern trench are determined to be active, whether they are part of the F-6 is unknown because the panel has not been able to grasp the exact location of the F-6.

The official said that the NRA wants to study the location of the F-6 fault through data taken during boring surveys.

With the discussion becoming prolonged, Okada, a 70-year-old expert on active faults, expressed his strong frustration over the handling of the issue during the meeting. He complained that the panel needs to add more members, such as an expert on fault fracture zones, [why haven't they included one?]and that the workload is too heavy for "an old man."

January 18, 2013

## Ventilation systems not sufficient, says NRA

## **Nuclear watchdog to require filtered ventilation system for boiling-water reactors**

<http://mainichi.jp/english/english/newsselect/news/20130118p2a00m0na008000c.html>

Nuclear reactors of the same type as those at the crippled Fukushima No. 1 nuclear power plant will be required to be equipped with a filtered ventilation system before reactivation, a Nuclear Regulation Authority (NRA) commissioner has told the Mainichi.

In an interview with the Mainichi Shimbun on Jan. 17, NRA Commissioner Toyoshi Fuketa said the NRA will mandate plant operators to equip boiling-water reactors (BWRs) with ventilation systems using filters capable of removing radioactive materials, when the regulatory body starts screenings for plant reactivations under new safety measures sometime after July.

Among the 50 nuclear reactors across Japan, there are 26 BWRs including "upgraded" models. While most of them are equipped with ventilation systems, they do not have filters.

"It can't be said sufficient measures have been taken without them," Fuketa said.

Because it will take several years to install the filtered ventilation systems, reactivation of suspended reactors is likely to be significantly delayed.

Meanwhile, the NRA is poised to set an unspecified grace period for pressurized-water reactors (PWR) -- such as those in operation at the Oi nuclear plant in Fukui Prefecture -- on the grounds that those reactors are housed in larger containers, making it less necessary to equip them with ventilation systems, according to Fuketa.

The NRA is also considering obliging plant operators to set up a "second control room," from which they can remotely control the cooling of reactors.

Fuketa said the NRA is expecting to receive applications for the reactivation of "a few reactors" from power companies in July.

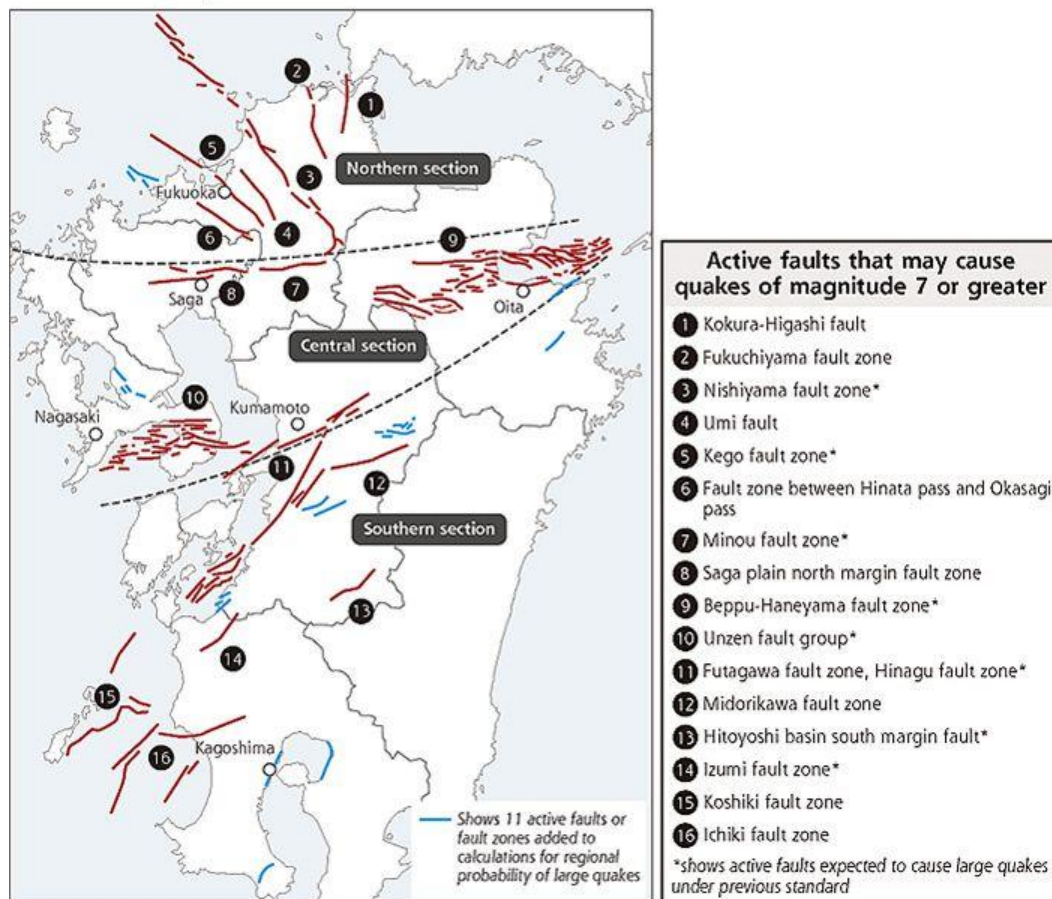
As for the possibility of some reactors being decommissioned after failing to meet the new safety standards, Fuketa said, "We will show no leniency in that respect."

Regarding the extension of the operational period for reactors that have passed their 40-year limit, he said the NRA will not approve their operation if there have been past problems with their performance, including problems stemming from their operators.

January 19, 2013

## **16 faults in Kyushu may cause severe earthquakes**

## Active faults in Kyushu reevaluated under new standard



## Active faults in Kyushu double / 16 faults may cause magnitude-7 or stronger earthquakes

<http://www.yomiuri.co.jp/dy/national/T130118004636.htm>

The Yomiuri Shimbun

The number of active faults in Kyushu that could cause earthquakes with a magnitude of 7 or higher has doubled from eight to 16, according to a draft of the government's Earthquake Research Committee reevaluation of national active faults.

After releasing the Kyushu-related portion of the reevaluation, the committee plans to release reevaluation results for each region--starting with the Kanto region.

A government project to evaluate earthquake magnitudes and their probability of occurring by designating active faults capable of causing large earthquakes began after the 1995 Great Hanshin Earthquake.

As there is believed to be a link between the length of an active fault and the magnitude of an earthquake, the committee chose 110 active faults nationwide with surface lengths of 20 kilometers or more as research targets. These active faults are suspected to be capable of causing magnitude-7 or stronger earthquakes.

However, the committee decided to review the targeted faults based on a new 2010 standard as destructive earthquakes occurred at nontargeted faults, including the magnitude-6.8 Niigata Prefecture Chuetsu Earthquake in 2004.

**The new standard has expanded the target to include active faults capable of causing a magnitude-6.8 earthquake or larger with a length of about 15 kilometers. Additionally, elements such as the length of fractures underground and in coastal areas were also included. Active faults with long intervals between activity were also included.**

As a result, 16 active faults in Kyushu were included among the targeted faults and judged capable of causing magnitude-7 or stronger earthquakes .

Meanwhile, according to a 2009 survey, there are nearly 100 active faults nationwide with a surface length of 15 kilometers or longer.

Close examinations of these faults are currently being carried out, and it is expected that many of them will be covered under the new standard. As a result, **it is highly likely the number of targeted faults nationwide will be doubled.**

The committee also calculated for the first time the possibility of a magnitude-6.8 earthquake or greater within the next 30 years by sections within the Kyushu region. The probability of such an earthquake occurring in Kyushu as a whole was calculated to be about 40 percent.

Active faults at 27 locations were covered in the committee's calculations for this purpose, including those at 11 additional locations that stretched from 10 to 15 kilometers but were deemed capable of causing a magnitude-6.8 earthquake.

The probability differs when taking into consideration differences in stratal architecture. By this measure, the probability of a major earthquake in northern and southern Kyushu is about 10 percent, and about 20 percent in central Kyushu. A detailed evaluation of the Kyushu region will be released as early as by the end of this month.

January 21, 2012

## New safety measures

### **NRA drafts tightened nuke plant safety rules**

<http://www.japantimes.co.jp/text/nn20130121x3.html>

Kyodo

The Nuclear Regulation Authority presented a draft outline Monday of new safety measures to prevent or minimize the consequences of severe atomic plant crises.

Among other features, the NRA said utilities will be required to build a special safety facility housing a secondary control room for reactor operations to protect reactors against natural disasters and acts of terrorism, such as the intentional crashing of an aircraft into a nuclear plant.

The new safety standards are expected to come into force in July, replacing the current ones, which the triple-meltdown disaster that erupted in March 2011 at the Fukushima No. 1 plant proved were insufficient.

Adopting the new safety standards is a major precondition in order for utilities to apply for government permits to restart their idled reactors.

In the Fukushima crisis, triggered by a huge earthquake and tsunami on March 11, 2011, three reactors suffered core meltdowns because their key cooling systems failed due to complete station blackout.

A series of hydrogen explosions followed, resulting in massive radioactive fallout.

Before Fukushima, authorities left it up to each utility whether to take steps against the possibility of a major calamity, based on the assumption such disasters are extremely unlikely.

But new safety measures will become mandatory under the forthcoming standards.

The draft also calls for the installation of vents with filters that are able to reduce the amount of radioactive substances ejected in the event the reactors must undergo emergency venting. The Fukushima complex had venting systems but not with radiation-screening filters.

Utilities will also be told to prepare emergency power sources to ensure reactors stay cool, even during a prolonged blackout.

In addition to these new measures, the NRA is crafting new safety criteria to deal with natural disasters such as earthquakes and tsunami.

Requirements to be included in the new regulations are drawing attention because they could affect unpopular plans to restart the idled reactors.

Only two reactors are currently online, at Kansai Electric's Oi power plant in Fukui Prefecture.

### **Japanese nuclear regulators present new safety measures**

<http://mainichi.jp/english/english/newsselect/news/20130121p2g00m0dm055000c.html>

## **Gist of new safety standards proposed for reactors**

[http://www3.nhk.or.jp/daily/english/20130121\\_23.html](http://www3.nhk.or.jp/daily/english/20130121_23.html)

Japan's Nuclear Regulation Authority has drafted an outline of new safety standards for nuclear power plants. The new rules are expected to ensure that the country's nuclear power plants can withstand severe accidents like the one at the Fukushima Daiichi plant.

One of the proposed measures is a vent system equipped with filters to reduce levels of radioactive exhaust in case of an accident. The lack of such a system led to a massive radioactive leak at the Fukushima plant.

Another requirement being considered is a powerful water injection facility that could cool a damaged reactor from a safe distance. Such a system would be helpful in the event the reactor's building is heavily damaged by a plane crash, for instance.

The authority has also proposed that alternative control rooms to monitor reactors be built away from the reactor buildings. This would reduce the risk of plant workers being irradiated in an emergency.

Some of these measures would involve a major revamp. The panel has yet to discuss the urgency of each measure or decide on how long certain measures can wait.

Part of the new standards will be used as criteria from July for restarting nuclear plants that are currently off-line.

The nuclear regulatory body presented the outline to a panel on Monday. It will compile the final draft by the end of this month which will then be reviewed by the public. The authority is expected to announce the new standards by July.

January 22, 2013

## **Filtered ventilation?**

### **News Navigator: What are filtered ventilation systems at nuclear power plants?**

<http://mainichi.jp/english/english/perspectives/news/20130122p2a00m0na014000c.html>

The Mainichi answers common questions readers may have about filtered ventilation systems that are being installed at nuclear power plants.

Question: What is a "filtered ventilation system"?



Answer: "Vent" in English means "to release or discharge." In order to reduce the radioactive materials from a nuclear accident, electric companies are set to install filters in the ventilation system that releases steam and gas. The Tokyo Electric Power Co. (TEPCO) has initiated the filter installation at the Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture from Jan. 15.

Q: So the system is designed to filter?

A: That's right. For the Kashiwazaki-Kariwa plant, a tank under construction that is designed to contain 50 tons of water just outside of the reactor building will be the filter. Dusty radioactive materials in steam will be filtered by going through the tank and being dropped in the water. By installing the system, the amount of radioactive iodine and cesium released in the air is expected to be reduced to one thousandth.

**The detailed design of the system and the time of completion are undetermined and the construction cost has not been disclosed to the public.**

Although in theory the steam and gas should be kept inside the plant, the "nuclear reactor container" might explode in case of an accident that causes the pressure to rise inside the plant. In order to prevent an explosion that spreads large amount of radioactive materials, the steam needs to be released.

Q: What is a "nuclear reactor container"?

A: The nuclear plant's atomic fuel is covered with three layers of containers: From the outside they are the "reactor building," "nuclear reactor container," and "pressure vessel," which is the atomic reactor itself. When there's something wrong with the pressure vessel, the reactor container is supposed to prevent radiation from spreading. In the case of the Fukushima No. 1 Nuclear Power Plant, TEPCO attempted to vent the steam and gas from the reactor container.

Q: Did it work?

A: No. Although **TEPCO tried to release steam from the No. 1 to No. 3 reactors some 13 times in total**, the reactor containers and buildings were all damaged. This was due to a blackout that was caused by the earthquake and tsunami, leading to manual operation, which ultimately caused a delay. Also, the amount of steam that had been released appeared insufficient.

On top of that, despite a plan to filter the steam through the water in the "pressure suppression pool," TEPCO failed to do so at one time in the No. 2 reactor during the 13 attempts, and **released radioactive materials into the environment without any filtration**. From this experience, filters are thought to be necessary for nuclear plants' ventilation systems.

TEPCO estimated that 99 percent of the radioactive materials released in the accident were caused by the reactor container damage and the hydrogen explosion of the reactor building rather than from the ventilation. So it is clear that the prevention of damage or an explosion is essential.

Q: What about nuclear power plants in other countries?

A: After the 1986 Chernobyl accident, Britain, Germany, France, Switzerland and Sweden made it mandatory to have ventilation systems for their nuclear plants. Japan, however, continued to permit non-filtered ventilation.

Q: What about other electric companies?

A: The Federation of Electric Companies of Japan announced last year the need to install filtered ventilation systems in all nuclear power plants. Meanwhile, the Nuclear Regulation Authority is considering making it compulsory to have filtered ventilation in all nuclear power plants in new safety standards scheduled to be released in July this year. (Answers by Shogo Takagi, Kashiwazaki Bureau)

## Stricter than the international standards

### Watchdog to set strict evacuation rules for nuclear accidents

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201301220068>

By JIN NISHIKAWA/ Staff Writer

Japan's nuclear industry watchdog plans to apply stricter evacuation standards than the international norm for cases in which residents at risk from a nuclear accident need to be moved from areas outside the immediate 5-kilometer radius danger zone.

A study team under the Nuclear Regulation Authority on Jan. 21 drafted standards that local governments will be obliged to follow in issuing instructions to residents in such times of crisis.

Under the draft standards, residents living outside a 5-kilometer radius would be told to evacuate immediately or stay indoors if radiation levels reach 500 microsieverts per hour.

The NRA team set the threshold lower than the International Atomic Energy Agency's 1,000 microsieverts, citing lessons from the disaster at the Fukushima No. 1 nuclear power plant.

If residents stay indoors, they would subsequently evacuate after the radioactive plume disappears.

The standards are expected to be incorporated into guidelines on nuclear disaster countermeasures, which will be revised in February.

In previous revisions last October, it was decided that residents within a 5-kilometer radius will evacuate immediately when a nuclear accident is reported.

Residents outside a 5-kilometer radius would be told to temporarily relocate within a week if radiation levels reach 20 microsieverts per hour, which are also lower than the IAEA's 100 microsieverts.

Locally produced food and drinks would be measured for radioactive concentrations if radiation levels reach 0.5 microsievert per hour, compared with the IAEA's 1 microsievert.

Residents would be told not to drink water or milk if they contain 300 becquerels of radioactive iodine per kilogram or more, or 200 becquerels of radioactive cesium or more.

## Guidelines will become standards

### **Nuclear watchdog to forbid reactor construction above active faults**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201301230064>

By RYUTA KOIKE/ Staff Writer

To clarify a loosely defined government "guideline," the nuclear industry watchdog decided on Jan. 22 it will expressly prohibit reactor buildings and other key safety-related facilities from being built directly above active fault lines.

The decision came during a meeting of an expert panel of the Nuclear Regulation Authority on new safety standards on nuclear plants' preparedness against earthquakes and tsunami.

The restriction could make it more difficult for the ruling Liberal Democratic Party to consider proceeding with construction of new nuclear power plants, if the sites are assessed to be over active faults. Under the previous Democratic Party of Japan, approval for the construction of new reactors had been frozen following the accident at the Fukushima No. 1 nuclear power plant in March 2011.

In its current anti-seismic guidelines, the government already has a similar provision prohibiting construction of nuclear reactors above active fault lines. But the NRA is seeking to make that provision clearer and more binding by upgrading the prohibition from "guidelines" to "standards."

The current entry in the anti-seismic guidelines only indirectly bans key equipment from being installed directly above an active fault that cuts across the ground surface, saying such construction is already "not assumed" to be taking place. The new safety standards will use more direct wording and expressly state that nuclear reactor buildings and other key safety facilities should be built on sites confirmed to be free of active faults.

The NRA plans to draw up an outline of the new standards by the end of January, and put them in place by July.

The NRA has already said it plans to expand, in the new standards, the definition of an active fault from "one that shifted during the past 120,000 to 130,000 years" to "one that moved during the last 400,000 years."

It also said it will define maximum anticipated heights of possible tsunami and obligate nuclear plant operators that are vulnerable to prepare defenses against them.

An active fault line likely runs beneath the No. 2 reactor of the Tsuruga nuclear power plant in Fukui Prefecture. (Asahi Shimbun file photo)

## **No extension beyond 30 years before new safety standards**

### **Applications to extend operation of aging Japan reactors put on hold**

<http://mainichi.jp/english/english/newsselect/news/20130123p2g00m0dm064000c.html>

TOKYO (Kyodo) -- Japan's nuclear regulatory authority on Wednesday decided not to accept applications from utilities seeking to extend the operation of reactors beyond 30 years under existing procedures, given that new regulations will be introduced in July.

To address concerns about aging reactors, nuclear power plant operators have been asked to conduct safety assessments of reactors that are set to operate beyond 30 years and compile a 10-year maintenance plan in seeking an extension.

But the Nuclear Regulation Authority, a new body launched in September last year, is in the process of overhauling the country's nuclear regulations in the wake of the 2011 Fukushima Daiichi complex disaster. It plans to require existing reactors to clear the new safety standards once they come into force.

"We want utilities to wait to submit the applications," NRA Chairman Shunichi Tanaka said during a meeting of the authority members, also noting the need to discuss details of a new regulation that the country has decided to introduce, limiting the reactors' operation to 40 years in principle.

The latest development comes as applications to extend operations of four reactors, including the No. 1 units at Chugoku Electric Power Co.'s Shimane plant and Kyushu Electric Power Co.'s Sendai plant, must be submitted by July.

None of the reactors is currently online.

January 23, 2013

## **NRA requests detailed anti-tsunami measures**

### **NRA moves to require detailed measures against tsunami**

Kyodo

<http://www.japantimes.co.jp/news/2013/01/23/national/nra-moves-to-require-detailed-measures-against-tsunami/#.UQBHPPL1tEs>

### **Nuclear body proposes requiring detailed anti-tsunami measures**

<http://mainichi.jp/english/english/newsselect/news/20130123p2g00m0dm025000c.html>

TOKYO (Kyodo) -- Japan's Nuclear Regulation Authority on Tuesday proposed requiring utilities to implement detailed measures to protect their nuclear power plants from tsunami in a revision of current guidelines that stop short of doing so.

According to a draft of new safety standards following the 2011 Fukushima Daiichi plant disaster, each nuclear power plant should be designed to withstand the biggest tsunami that could hit a site.

In the draft, the NRA also warned that planners of new nuclear plants should be careful about older active faults, saying they must consider faults that have moved in the last 400,000 years, compared with the current guidelines that state in the past 120,000-130,000 years.

The requirements to be included in the new regulations, expected to come into force in July, are drawing attention because they could affect the resumption of the country's reactors. Only two reactors in Japan are currently operating amid safety concerns over the use of nuclear power.

The draft regulations, which were presented at a meeting with experts the same day, would oblige utilities to provide estimates regarding the biggest tsunami that could hit each plant and take measures to keep key facilities safe.

The NRA proposed requiring utilities to locate reactor buildings at elevations where even the biggest tsunami could not reach, or have such buildings protected by seawalls or other defenses.

Important facilities should be equipped with watertight doors in case sites are flooded, according to the draft.

Reinforcing facilities to withstand tsunami are one of the key lessons Japan learned from the Fukushima crisis, in which tsunami waves over 10 meters high flooded electrical equipment including backup generators, leading to the failure of reactor cooling systems due to loss of power.

Current regulations do not ask utilities to implement concrete safety measures.

In relation to measures to deal with the risk of earthquakes, the NRA plans to stipulate more clearly than in the existing guidelines on the quake resistance of nuclear plants that important facilities must not be built over active faults, according to the draft.

## Oi plant no exception

### **Ohi nuclear reactors in Japan may be stopped again**

[http://www3.nhk.or.jp/daily/english/20130123\\_26.html](http://www3.nhk.or.jp/daily/english/20130123_26.html)

The chief of Japan's nuclear power regulator has indicated the possibility of calling on the operator of the country's only 2 running nuclear reactors to stop them.

At a news conference on Wednesday, Nuclear Regulation Authority Chairman Shunichi Tanaka made the remarks regarding No.3 and No.4 reactors at the Ohi nuclear power plant in Fukui Prefecture, on the Sea of Japan coast.

He says any operating reactors that fail to meet the authority's new safety requirements need to be shut down. He says the Ohi plant cannot be treated as an exception.

Tanaka also suggested that the regulator may allow the operator, Kansai Electric Power Company, to continue running them as long as they can satisfy the new standards.

The authority will set new standards to ensure the safety of all nuclear plants in Japan. In July the new criteria will become requirements that nuclear operators must abide by.

The government permitted Kansai Electric to resume the reactors' operation last July and the utility plans to continue running them for 13 months, through September, when they need to undergo regular inspection.

If the 2 reactors are stopped, all of Japan's 50 reactors would be out of service for the first time since May 2012, following the accident at the Fukushima Daiichi nuclear power plant in March 2011.

January 24, 2013

## Kashiwazaki may also be sitting on active faults

### Quake faults at TEPCO's Niigata nuclear power plant may be active

<http://mainichi.jp/english/english/newsselect/news/20130124p2g00m0dm023000c.html>

TOKYO (Kyodo) -- Some faults under Tokyo Electric Power Co.'s Kashiwazaki-Kariwa nuclear plant, the world's biggest on Japan's northwest coast, could be regarded as active based on new safety standards, Kyodo News found Wednesday through documents that the utility has made public and other materials. If the faults are judged as likely active by the Nuclear Regulation Authority, established in the wake of the 2011 Fukushima Daiichi complex disaster, the utility will face difficulties in reactivating the plant in Niigata Prefecture.

Under Japanese government criteria, active faults are defined as those that have moved in the last 120,000 to 130,000 years. But the NRA plans to move the benchmark to 400,000 years ago in the new safety standards, which are expected to come into force in July.

The draft standards presented by the NRA on Tuesday stated that nuclear power plant operators would not be allowed to build reactors directly above active faults.

The utility known as TEPCO, the operator of the crippled Fukushima plant, is currently conducting a geological survey of the faults running under the Kashiwazaki reactors with a combined output capacity of 8,212,000 kilowatts.

The NRA said it will decide whether to conduct its own investigation after the outcome of the survey becomes clear.

According to TEPCO, two faults called "alpha" and "beta" are located below the Nos. 1 and 2 reactors. Faults are also located under the Nos. 3 and 5 to 7 reactors.

The No. 4 reactor does not sit directly above a fault, but there are some under the adjacent reactor turbine building.

TEPCO has denied the faults are active under existing guidelines, but, for example, the beta fault could be categorized as active under the new definition because it has displaced a ground layer including volcanic ash dating back 240,000 years.

The NRA is conducting, or plans to conduct, investigations into six nuclear facilities in Japan that are suspected to have suspicious faults on their premises, but the Kashiwazaki-Kariwa plant is not among them.

January 28, 2013

## Let's see what happens with the Tsuruga plant

### Active fault to scuttle Tsuruga plant

<http://www.japantimes.co.jp/news/2013/01/28/national/active-fault-to-scuttle-tsuruga-plant/#.UQZwfPL1tEs>

### *NRA findings may cost Japan Atomic Power dearly*

by Kazuaki Nagata  
Staff Writer

The quake fault running under reactor 2 at the Tsuruga nuclear power plant in Fukui Prefecture is probably active, a panel from the Nuclear Regulation Authority stated in a draft report Monday, effectively condemning the two-reactor complex.

The report, compiled from the panel's search for potentially active faults at the Tsuruga plant, is a heavy blow to Japan Atomic Power Co., which may have to scrap the reactor at great cost.

"If new knowledge is obtained, the judgment could be reviewed. However, at least at this point, the fault at the plant site is highly likely an active fault that needs to be considered in terms of seismic design," the report said.

The draft report said the fault or zone of small rocks and sediment called D-1 could move simultaneously with a major active fault called the Urazoko, which is about 200 to 300 meters from the reactor buildings.

If that happens, "it could impact the critical facility right above," the report said.

The report pointed out that the D-1 zone is possibly an extension of the K fault, which showed traces it has moved within the past 130,000 years or so.

It also said the K fault would probably move together with the Urazoko fault.



The safety guidelines for nuclear power plants do not allow utilities to build reactors or critical cooling equipment directly above an active fault. The guidelines define a fault as active if it has moved within the past 120,000 to 130,000 years. The NRA is planning new rules that will expand that time frame by thousands of years.

During the meeting Monday at which the draft report was submitted, Kunihiro Shimazaki, an NRA commissioner who heads the panel, said the report will be checked by other outside experts before it is finalized.

The panel investigated the Tsuruga site in December, when its experts quickly leaned toward the conclusion that the fault appeared active.

Japan Atomic Power has criticized the panel, saying its view lacks scientific support.

NRA chief Shunichi Tanaka has said the Tsuruga plant's No. 2 reactor will not undergo the safety exam required to be restarted if D-1 is active, because the unit will no longer be allowed to operate.

The Tsuruga plant has two reactors, with two faults also running under reactor 1, and Japan Atomic Power is still examining them. But reactor 1 is over 40 years old, and the new rules will not allow reactors over 40 to run in principle. The NRA has been examining possible active faults at other plants, including Kansai Electric Power Co.'s Oi atomic plant, also in Fukui Prefecture.

### **Fault under Tsuruga reactor could be active**

[http://www3.nhk.or.jp/daily/english/20130128\\_32.html](http://www3.nhk.or.jp/daily/english/20130128_32.html)

An expert panel of the Nuclear Regulation Authority says a fault running under a nuclear reactor on the Sea of Japan coast could be active.

The experts have been examining fissures beneath nuclear power plants. The panel issued their draft report on the Tsuruga nuclear plant in Fukui Prefecture at a meeting on Monday.

The report says a newly found fault under the plant might have moved sometime between 120,000 and 130,000 years ago.

The report says the experts also examined the direction of the fault. This indicates it could be an

extension of another fault running directly under the No.2 reactor.

The draft concludes by saying the experts cannot deny the possibility the fault running directly under the No.2 reactor is active.

Government guidelines prohibit building nuclear reactors directly above active faults.

Panel member Kunihiro Shimazaki says it will take more time to complete the final report. He says they are ready to listen to the opinions of other experts, as well as plant operator Japan Atomic Power Company. Shimazaki says learning from others would be helpful in compiling a thorough report.

### **Nuclear panel to give assessment on fault**

[http://www3.nhk.or.jp/daily/english/20130128\\_15.html](http://www3.nhk.or.jp/daily/english/20130128_15.html)

A Nuclear Regulation Authority experts' panel is taking the unusual approach of compiling circumstantial evidence and making a decision from a safety standpoint on the geological conditions under a nuclear power plant.

The panel will caution the authority that a fault running under the Tsuruga plant in Fukui Prefecture could be active. The government's guidelines prohibit building key nuclear facilities directly over active faults.

The authority was created based on the lessons learned from the 2011 Fukushima Daiichi accident. It is allowed to operate independently, without relying on information from the operating power company.

The panel has been collecting circumstantial as well as concrete evidence on faults the government has identified under nuclear facilities.

Meanwhile, the operating power company has reacted to the panel's findings.

On Tuesday of last week, the Japan Atomic Power Company gave the media a look at a survey site at the plant. The utility said it will prove in an additional survey that the fault is not active. The company had earlier submitted an open list of questions to the nuclear authority.

Governor Issei Nishikawa of Fukui Prefecture, which hosts the plant, has released a request for sufficient scientific evidence.

The authority is expected to include older active faults in the new nuclear safety standards it is considering. The tighter standards on active faults could affect nuclear power stations around the nation.

The authority is being asked to explain in detail how it arrived at its decision on the issue, not only to the utilities and local governments concerned, but also to the public to regain their trust in the county's nuclear administration.

January 29, 2013

## But will NRA stick to its guns?

### Nuclear safety board draws up new guidelines

[http://www3.nhk.or.jp/daily/english/20130129\\_29.html](http://www3.nhk.or.jp/daily/english/20130129_29.html)

Japan's Nuclear Regulation Authority has drawn up a final draft of new safety guidelines for protecting nuclear reactors from serious damage by earthquakes and tsunamis.

An expert panel of the authority adopted the draft on Tuesday. Barring revisions, the guidelines are to become law by July.

They would continue Japan's ban on building nuclear reactors over active faults -- defined as those that have moved in the past 120,000 and 130,000 years or later. But the guidelines would extend the time frame to 400,000 years ago for faults that are hard to analyze.

The guidelines stipulate clearly for the first time that plant operators must prepare for the highest possible tsunamis for all of their reactors.

The rules call for safety measures including breakwaters and other steps to keep water from entering key facilities, as well as ways to minimize flood damage.

They would also require plant operators to ensure that reactors and other key facilities are not seriously affected by geological changes caused by earthquakes.

Another expert panel of the authority is working to draw up guidelines to protect against severe nuclear accidents. **The rules are to be enforced starting in July.**

### New NRA rules tough on tsunami, could delay reactor restarts

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201301290065>

By RYUTA KOIKE/ Staff Writer

The nuclear industry watchdog is pitching new safety standards on earthquake and tsunami preparedness, which could substantially delay restarts of some idled nuclear plants.

The draft outline of the new standards, presented on Jan. 29 by an expert panel of the Nuclear Regulation Authority, calls for broad measures against the highest possible tsunami.

The highest possible tsunami, called the "reference tsunami," will be set for individual nuclear plants. Operators will be required to build levees high enough to defend nuclear plants from a reference tsunami and take measures to prevent damage from possible flooding, such as waterproofing buildings that house key equipment.

The draft outline also calls for considering volcano collapses and landslides, in addition to earthquakes, as possible triggers for a tsunami.

The new safety standards are expected to go into effect by July 18. The NRA will use the new standards to screen applications for restarting reactors shut down after the Fukushima nuclear crisis or building new ones.

Utilities have been erecting levees and introducing anti-quake measures at nuclear plants since the accident at the Fukushima No. 1 nuclear power plant.

But some could be forced to take additional measures to defend nuclear plants from a reference tsunami, which would substantially delay their restarts.

The existing earthquake-resistance guidelines for nuclear plants barely mention tsunami because they are merely defined as a phenomenon accompanying an earthquake.

The former Nuclear Safety Commission proposed revisions to the guidelines after the Fukushima No. 1 nuclear power plant was crippled by a tsunami spawned by the March 2011 Great East Japan Earthquake. The NRA, which took over the commission, has been discussing the new standards since autumn.

According to the draft outline, operators may have to consider back to 400,000 years in the past when they determine whether a fault line is active and its seismic risk should be assessed for a nuclear plant.

Currently, faults that have shifted during the past 120,000 to 130,000 years are defined as active.

The draft outline calls for seismic activity up to 400,000 years ago to be examined if a definite decision cannot be made based on data for the past 120,000 to 130,000 years.

The new requirement could affect safety evaluations for the Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture and the Tomari nuclear plant in Hokkaido, where experts say faults may have shifted during the past 400,000 years.

The draft outline also calls for considering the possibility that fault lines close to each other may move in tandem.

According to the draft outline, operators must allow sufficient leeway in estimating seismic movements if an active fault runs in close proximity to key facilities such as reactor buildings. An example of such a fault line is the Urasoko Fault at the Tsuruga nuclear plant in Fukui Prefecture.

The draft outline also clearly says key facilities cannot be built right above a fault line that could shift.

According to the draft outline, operators will be required to conduct detailed studies of subsurface structures that affect how seismic waves are transmitted.

The requirement has been included because localized strong shaking has been observed at the Hamaoka nuclear plant in Omaezaki, Shizuoka Prefecture, and other facilities.

## **Nuke plants & terrorism**

### **Police seek more funds to guard nuclear plants**

[http://www3.nhk.or.jp/daily/english/20130130\\_05.html](http://www3.nhk.or.jp/daily/english/20130130_05.html)

Japan's National Police Agency plans to more heavily equip officers guarding nuclear power plants to raise preparedness for possible terrorist attacks.

The agency is requesting nearly 20 million dollars for the next fiscal year to buy more machine guns and bullet-proof vehicles to improve security at nuclear plants.

The requested amount is almost 4 times the budget for the current fiscal year that ends in March.

Police officers are stationed at nuclear facilities nationwide and guard them around the clock.

The agency has also decided to buy shields and other equipment for officers patrolling remote islands,

including the Senkaku Islands in the East China Sea.

The plan will enable officers to protect themselves in case of attacks by foreigners who illegally enter Japanese waters.

February 1, 2013

## Improving safety

### **ANALYSIS: Japan elevates nuclear safety to international levels**

<http://ajw.asahi.com/article/0311disaster/recovery/AJ201302010070>

By JIN NISHIKAWA/ Staff Writer

Improvements in safety proposed by the Nuclear Regulation Authority could see Japan's nuclear plants acquire safeguards recommended by the International Atomic Energy Agency in 1996 but ignored by officials who believed the calamitous events of March 2011 could never occur.

Further underscoring Japan's error, some of the measures proposed are those that European nations began implementing as far back as the 1980s. It took the accident at the Fukushima No. 1 nuclear power plant to push Japan into raising its safety standards to international levels.

NRA officials proudly portray the new proposals as the tightest standards in the world. They involve cutting-edge science. And if all the measures are implemented, safety at Japan's nuclear plants will improve.

However, not one of Japan's nuclear reactors is currently close to complying with all proposed requirements.

Because it will take time to install some of the new safety mechanisms, the NRA plans to allow a grace period for some equipment in some situations and to allow reactor restarts before retrofitting work is complete.

There will now be debate about that grace period and other matters. Such discussion should be kept to a minimum. Even with full implementation, the risk of a severe accident will always remain.

The safety standards are nothing more than a minimum for electric power companies to abide by. The utilities will be expected to show initiative and eagerness to elevate the safety of their reactors to an even higher level.

"It would be wrong to think that safety can be secured just by following the standards laid out," said Toyoshi Fuketa, an NRA commissioner who was involved in compiling the new safety standards.

A lazy attitude by electric power companies led to delays in improving safety before the Fukushima nuclear accident and arguably contributed to it.

If Japan is to continue relying on nuclear energy, the new safety standards should only be a starting point. By incorporating the latest knowledge and technology, electric power companies and the NRA will have to make constant improvements toward ever-greater safety.

## New safety standards - Not up to the utilities any more

### **EDITORIAL: Utilities must not dally on new nuclear safety standards**

<http://ajw.asahi.com/article/views/editorial/AJ201302010043>

The Nuclear Regulation Authority released a draft outline of new safety standards to deal with serious accidents at nuclear power plants.

Under the “safety myth” promoted by Japanese nuclear power advocates for decades, measures to safeguard nuclear plants have been left to the voluntary efforts of the power companies that operate them.

However, these utilities will be legally required to prepare for a serious accident on the assumption that it “does occur.” The details will be worked out by July, together with the recently released draft of safety standards for earthquake and tsunami preparedness.

The administration of Prime Minister Shinzo Abe stands by the policy “to restart nuclear reactors whose safety has been confirmed.” But we believe the standards should be used to distinguish the dangerous reactors and ensure that they are not put back online.

Many regulations adopted by Western countries were incorporated into the NRA's safeguard measures. If they are fully implemented, the safety of nuclear power plants would significantly improve.

However, some measures are expected to take a long time to implement. For this reason, the government plans to set up a grace period for such steps.

Since fuel costs to run thermal power plants weigh heavily on their bottom lines, utilities want to restart nuclear power plants at the earliest possible time. The truth is they want the grace period and other requirements to be as lax as possible.

But they should not be allowed to interminably delay the start of the safety measures.

At the very least, the installation of a quake-resistant "emergency control room" with in-house power generation capability and other key functions should be made mandatory before reactors are restarted.

The revised nuclear reactor regulation law requires utilities to introduce "backfitting," a system equipped with the latest safety measures, to existing nuclear reactors.

From now, each time new findings concerning nuclear power generation emerge, all nuclear power plants will be required to adopt new safety standards in response. Regardless of the grace periods, they must always keep up with the latest updates.

Naturally, doing so will be costly. In the past, power industry officials tended to believe that they could cover expenses by raising utility rates or extending the lifespan of reactors until their losses could be written off.

But such a mind-set is no longer acceptable.

The NRA must also strictly enforce the 40-year maximum lifespan rule for reactors and not allow reactors with outdated designs to continue to operate.

The government needs to steadily advance reform of the nuclear power industry, including a re-examination of the existing setup that allows utilities to tally all costs needed to generate power and pass them on to electricity rates.



Such reform would also make it easier for utilities to decide whether to invest in additional safety precautions for their reactors or decommission them.

No matter how much safety measures are advanced, however, there will always be risks in operating nuclear reactors.

Also worrisome is that no plans have been decided on temporary storage and final disposal of spent nuclear fuel and high-level nuclear waste.

If these points are weighed in, the number of reactors that can be restarted would be limited.

February 5, 2013

## Granting grace periods can only gut new NRA standards

### Don't gut nuclear safety standards

<http://www.japantimes.co.jp/opinion/2013/02/05/editorials/dont-gut-nuclear-safety-standards/#.URFghvL1tEs>

The Nuclear Regulation Authority has disclosed an outline of new safety standards for nuclear power plants. They include obligatory measures to cope with a large-scale natural disaster and terrorist attacks.

Currently these measures are taken voluntarily by nuclear power plant operators. After listening to opinions from the public, the NRA will enforce the new standards from July. It is imperative that power companies strictly follow them.

It is deplorable that the power industry has already voiced complaints about the new standards. The industry objects to the large sums of money required over a long period of time to meet the standards. To prevent a catastrophe like the one at Tokyo Electric Power Co.'s Fukushima No. 1 plant, the NRA should reject any moves to weaken the new standards.

The Abe government, which appears in favor of reviving the traditional pro-nuclear power policy, should refrain from dropping the policy of ending the nation's reliance on nuclear power in the 2030s as set by the Democratic Party of Japan government.

The characteristic of the new standards is that operators of nuclear power plants have to take measures to cope with such “severe accidents” as a strong earthquake, a tsunami, a terrorist attack and an airplane crash.

Operators will be required to multiply power sources to be used in cooling reactor cores, to set up a second control room to cool a reactor core by remote control in case the regular control room becomes inoperative as well as to establish an emergency command center with seismic isolation and radiation shielding functions, to install filters to remove radioactive substances when such substances have to be vented from a reactor containment vessel and to use fireproof electric cables.

The NRA will also assume a maximum height of a possible tsunami for each nuclear power plant and will require each plant to take necessary steps including installment of a seawall.

Currently operators of nuclear power plants are required to find out whether geological faults inside a plan site were active in the past 120,000 to 130,000 years. But the period for examination will be extended to the past 400,000 years if the operators cannot prove that no faults were active in the past 120,000 to 130,000 years.

Building reactor containment vessels and other important facilities above an active fault will be prohibited. NRA head Mr. Shunichi Tanaka should be praised for saying that the authority will not take into consideration the costs that power companies must bear in implementing the new safety standards.

Unfortunately, it seems that the NRA will likely allow a grace period for installing filters to remove radioactive substances at pressurized light water reactors on the grounds that hydrogen explosions are unlikely to occur in this type of reactor. There is also a possibility that the NRA will allow a grace period for the installation of a second control room and an emergency command center with seismic isolation and radiation filtering functions.

But can nuclear power plants that lack these facilities keep severe accidents under control and prevent them from spiraling into major disasters? The NRA should refrain from granting grace periods as they would only serve to gut the new safety standards.

February 7, 2013

## What was that?

### Power goes out for minute at Oi nuclear plant

Kyodo

<http://www.japantimes.co.jp/news/2013/02/07/national/power-goes-out-for-minute-at-oi-nuclear-plant/#.URK5-PL1tEs>



TSURUGA, FUKUI PREF. – Power went out for one minute Wednesday at reactor 3 of Kansai Electric Power Co.'s Oi nuclear plant in Fukui Prefecture but the outage did not affect the unit's operation or cause a negative impact outside the facility, Kepco said.

The utility said it believes part of the internal power supply at the reactor building was cut off at around 2:30 p.m. as a trainee mistakenly tripped the circuit breaker. The Oi plant's reactors 3 and 4 are the only ones currently in operation amid the nationwide shutdown stemming from the triple-meltdown crisis at Tokyo Electric Power Co.'s Fukushima No. 1 plant that started in 2011.

Kansai Electric reported the power failure to the central government and local municipalities. The Nuclear Regulation Authority later conducted an on-site inspection and confirmed that the power cut had no adverse effects outside the plant.

The NRA said the electricity supply for measuring gauges was disrupted and the water level in reactor 3 rose as valves in some pipes were automatically closed.

Oi Mayor Shinobu Tokioka urged Kepco in a statement to take the incident seriously and ensure the safety of local residents.

The two reactors at the four-reactor Oi plant were restarted last July after all of the country's reactors went offline amid strong public concerns over the safety of nuclear power due to the Fukushima catastrophe.

February 8, 2013

### **Power supply briefly cut off at Oi N-plant**

<http://www.yomiuri.co.jp/dy/national/T130207004549.htm>

FUKUI (Jiji Press)--One of two emergency power supply systems for the No. 3 reactor of Kansai Electric Power Co.'s Oi nuclear power plant in Fukui Prefecture was shut down for about one minute Wednesday.

The accident was due to human error, the Nuclear Regulation Authority said later the same day.

It was the first safety-related trouble at the Oi plant since its Nos. 3 and 4 reactors were restarted in July.

All nuclear reactors in the nation except the two Oi units are now offline due to safety concerns heightened by the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, which was crippled by the March 2011 earthquake and tsunami.

According to Kansai Electric, a worker mistakenly used the lever that severs the emergency direct-current power supply system. The system was switched on again immediately.

Under the Oi plant safety rules, both backup power systems should be active while the No. 3 reactor is online.

February 9, 2013

## No fault under Mihama plant, says Kepko

### No evidence fault connected to fracture zones at Mihama plant: operator

<http://mainichi.jp/english/english/newsselect/news/20130209p2g00m0dm002000c.html>

TOKYO (Kyodo) -- Kansai Electric Power Co. said Friday there is no indication that any active earthquake fault is connected to fracture zones below the company's Mihama nuclear power plant in western Japan.

The company has included the view in an interim report to the Nuclear Regulation Authority on the nine fracture zones that are feared to possibly move along with a nearby active earthquake fault and affect the plant's safety.

After a final report by Kansai Electric in late March, **the NRA is expected to conduct an on-site inspection before giving a conclusion on the nuclear plant's safety.**

The NRA plans to ban nuclear reactors above active earthquake faults and has subjected the Mihama facility in Fukui Prefecture and six other nuclear power plants in Japan to checks on faults.

February 14, 2013

## NRA will inspect Fukushima reactor no.1

### NRA to inspect Fukushima reactor building following bogus TEPCO claim

<http://mainichi.jp/english/english/newsselect/news/20130214p2a00m0na014000c.html>

The Nuclear Regulation Authority (NRA) is poised to conduct an on-site inspection of the crisis-hit Fukushima No. 1 nuclear plant on the heels of revelations that false information provided by plant operator Tokyo Electric Power Co. (TEPCO) had prevented a Diet panel from inspecting the plant's No. 1 reactor building.

NRA Chairman Shunichi Tanaka announced the plan at a press conference on Feb. 13. The move comes after it turned out that TEPCO had given false explanations to the Diet panel investigating the Fukushima nuclear disaster after the panel applied for entry into the No. 1 reactor building last year, saying the facility was "in sheer darkness," which was not true.

The panel was investigating whether isolation condensers on the fourth floor of the No. 1 reactor building, which are key components in cooling down the reactor in emergencies, had been damaged by the magnitude-9.0 Great East Japan Earthquake on March 11, 2011, before they were hit by the ensuing tsunami. The possibility has been denied by other investigation panels set up by the government, the private sector and TEPCO, respectively.

"We need to conduct an inspection while looking at a decline in the radiation levels inside the reactor building," Tanaka said, adding that the NRA will start the inspection "in the not-so-distant future."

Tanaka, however, withheld from specifying when to conduct the inspection, referring to the high radiation levels on the fourth floor, which stand at dozens of millisieverts per hour. "It's too early to say now," he said.

During a House of Representatives Budget Committee session on Feb. 12, TEPCO President Naomi Hirose said, "We will provide maximum cooperation for the on-site inspection."

## Pool at Number 4 OK, says TEPCO

### **TEPCO: Damaged reactor can withstand quakes**

[http://www3.nhk.or.jp/daily/english/20130214\\_12.html](http://www3.nhk.or.jp/daily/english/20130214_12.html)

The operator of the stricken Fukushima Daiichi nuclear power plant says the pool to store spent fuel in the 4th reactor building is strong enough to resist earthquakes.

The company examines the spent fuel storage pool every 3 months, checking the slant of the structure, its walls, and strength.

The 4th reactor building was heavily damaged by a hydrogen explosion shortly after the earthquake and tsunami in March 2011.

This raised concerns about the quake-resistance of the pool that contains more than 1,500 fuel rods, the

most of any reactor building in the plant.

The utility says for the first time, an outside expert observed the latest inspection.

The observer says that the fuel storage pool was close to level and the building was not distorted.

The expert also says no major change was seen in the size of a protrusion in the western wall believed to have been created by the blast.

The observer says the bump stretched a maximum 4.6 centimeters in the 13-meter high wall, with little change from the previous measurement in November.

But an NHK reporter says the inspection left doubt regarding the objectivity of the survey and assessment as the utility allowed only one expert to observe the process and did not make public who that person was.

February 17, 2013

## 130,000 or 400,000 years?

### **News Navigator: What is the future of active fault inspections at nuclear plants?**

<http://mainichi.jp/english/english/perspectives/news/20130217p2a00m0na003000c.html>

The Nuclear Regulation Authority has revised safety standards that power companies must follow when building and running nuclear power plants. The revisions, to take effect from July, include relaxing the conditions for determining a fault is active. The Mainichi answers common questions readers may have regarding these changes.

Question: What are the current standards for judging active faults?

Answer: Active faults are underground cracks that have evidence of moving recently and are predicted to move again in the future. If the force that caused them to previously move struck again, the faults would move once more. Researchers believe that such energy continues to apply itself to faults for around 400,000 years, and the government's Earthquake Research Committee therefore generally considers faults as active if they have moved within that period.

However, in the case of nuclear power plants, the standards for active faults have been changed to those that have moved in the last 120,000 to 130,000 years. This is because around that time the Earth's climate was warmer and ocean levels were higher, making it easier to identify unusual ground layers from that period.

Q: How will the standards change?

A: When it is clear that a fault moved within the last 120,000 to 130,000 years, the current standards will be applied. **However, when it is not clear, faults will be investigated for activity in the last 400,000 years.** Even at their slowest rates, active faults move every tens of thousands of years. If a fault moved within the past 400,000 years, it also should have moved within the latest 120,000 to 130,000 years.

Q: What will be the effect on the operation of nuclear plants?

A: For at least the No. 1 and No. 2 reactors at the Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture and the Tomari Nuclear Power Plant in Hokkaido, the power companies owning the plants have dismissed the danger of faults there, saying they have not had confirmed activity for at least 200,000 years. Under the new standards, the faults would have to be further examined.

Q: What would happen if they were found to be active?

A: The new standards clearly forbid the building of important facilities like reactor-housing buildings directly above active faults. This could force the dismantling of existing reactors if they were found to be above such faults. Even if an active fault is not directly beneath such a structure, if there is one nearby then structures would have to be prepared against the largest predictable shockwaves for a nuclear plant to be allowed to operate. (Answers by Ei Okada, Tokyo Science & Environment News Department)

February 18, 2013

## Anti-quake measures requires at Higashidori?

### Report: Fault at nuclear plant may be active

[http://www3.nhk.or.jp/daily/english/20130218\\_24.html](http://www3.nhk.or.jp/daily/english/20130218_24.html)



A panel of the Nuclear Regulation Authority says 2 faults under the Higashidori nuclear power plant in Aomori Prefecture, northeastern Japan, may be active.

The finding could keep the plant in northern Japan offline if the operator, Tohoku Electric Power Company, is required to review its anti-quake measures.

The panel debated a draft report on Monday that evaluated the results of a survey of the plant.

**The report says an analysis of volcanic ash around the 2 faults under the plant suggests that they have become active on several occasions in the past.**

It says they are likely to be defined as active faults that require quake resistance measures.

**The report dismissed Tohoku Electric's claim that a gap formed in the strata after the soil absorbed water, and that it was not the result of seismic activity.**

**It said the operator's survey was inadequate, and that a more extensive survey of the size and activity of the faults, is needed.**

After hearing the views of other experts, the panel will submit its final report to the Nuclear Regulation Authority.

If the faults are found to be active, the Higashidori facility would be the 2nd nuclear plant discovered sitting in a potentially dangerous location. The first was the Tsuruga plant on the Sea of Japan coast.

The panel is conducting a similar survey at 3 other nuclear plants, including the Ohi Plant, which is Japan's only nuclear power plant still in operation. It is also planning to extend its surveys to 3 other nuclear power stations.

## Symposium discusses NRA safety standards

### Nuclear scientists discuss new safety rules

[http://www3.nhk.or.jp/daily/english/20130218\\_01.html](http://www3.nhk.or.jp/daily/english/20130218_01.html)

Japanese nuclear scientists have held a symposium to discuss improved nuclear safety standards that Japan's Nuclear Regulation Authority will set by July.

This is in response to the nuclear disaster at the Fukushima Daiichi nuclear power plant in March 2011.

The NRA members created an outline of the safety standards last month and now are in the process of hearing from the people. The symposium was hosted on Sunday in Tokyo by the Atomic Energy Society of Japan.

NRA committee member Toyoshi Fuketa explained the outline that will oblige every power company to set appropriate measures and standards for dealing with a severe accident. In the past, each utility set its own benchmarks.

One expert pointed out that the NRA should not perpetuate the myth that accidents can be prevented by merely meeting standards.

Another said safety is never guaranteed and added that the NRA should have a goal for achieving safety, while being clear about any remaining risks.

Fuketa said the standards will be basic safety measures

## More investigations at Ohi plant

### KEPCO to examine faults beneath Ohi nuclear plant

[http://www3.nhk.or.jp/daily/english/20130218\\_36.html](http://www3.nhk.or.jp/daily/english/20130218_36.html)

The operator of Japan's only nuclear power plant that is currently online says it will conduct an inspection to detect any active faults beneath the facility.

Experts from the Nuclear Regulation Authority, or NRA, have twice examined trenches at the Ohi nuclear plant in Fukui Prefecture on the Sea of Japan since November.

But they remain divided over whether fissures found at the site are active faults or the result of landslides.

NRA commissioner Kunihiro Shimazaki asked Kansai Electric Power Company to dig a new trench near one of the reactors to examine the fissures.

Kansai Electric announced on Monday that it would start the survey as soon as preparations are complete, and submit a report to the nuclear authority by mid-July.

The utility firm says it plans to dig a 70-meter, east-to-west trench about 170 meters south of the plant's No.3 reactor.

The utility adds that a drilling inspection of the underground stratum had confirmed the location of layers that can determine whether or not the fissures in questions are active faults.

The NRA is to recommend halting the 2 reactors that were restarted last year if it determines that there are active faults beneath the facility.

## "Almost certainly active"

### Nuclear watchdog: Fault lines under Higashidori plant are active

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201302190051](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201302190051)

By RYUTA KOIKE/ Staff Writer

Geological fault lines that run beneath Tohoku Electric Power Co.'s Higashidori nuclear power plant in Aomori Prefecture are almost certainly active, according to an expert panel of the Nuclear Regulation Authority.

The assessment was part of a draft report presented when the panel met on Feb. 18. The panel also called for further studies on the activity of two separate fault lines that extend directly beneath the plant's key facilities. Tohoku Electric, meanwhile, continues to argue that the faults are inactive.

In December, the panel conducted an on-site survey that mostly focused on two fault lines, called F-3 and F-9, respectively.

"These faults are likely active and should be taken into account during earthquake preparedness planning," the draft report said.

The F-3 fault runs 400 meters west of the Tohoku Electric Higashidori nuclear plant's reactor building and extends onto the premises of Tokyo Electric Power Co.'s nuclear plant of the same name, which is under construction on an adjacent plot of land to the north.

The draft report pointed out the need for a safety assessment of the seismic ground motions and ground surface displacements that would be expected in case the F-3 and F-9 faults slipped.

Apart from these fault lines, a smaller fault runs directly beneath the nuclear reactor building, while another cuts across a coolant water intake channel and other key safety equipment. The panel said more studies are necessary to determine the activity of those smaller fault lines. It called on Tohoku Electric to present documents and other material from the time the nuclear plant was built to make up for the **paucity of available data**.

"We have not been able to hold detailed discussions, partly because of the limited time available during our on-site survey (in December)," NRA deputy chairman Kunihiro Shimazaki said.

The government's guidelines do not allow key nuclear power plant equipment to be built directly above an active fault.

Tohoku Electric officials held a news conference following the NRA panel meeting and insisted there are no active fault lines beneath the premises of the nuclear plant.

They said they will conduct additional surveys "to confirm the inactivity of the faults" and release the survey results in December.

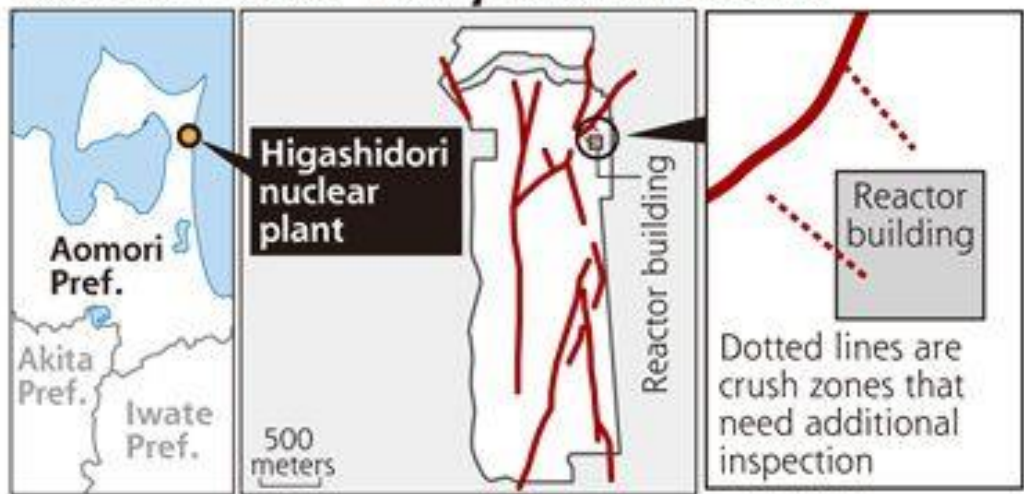
The Tohoku Electric officials remained noncommittal on whether the utility will follow the recommendation of the draft report and conduct the safety assessment of the seismic ground motions and ground surface displacements in case of potential fault movement.

Tohoku Electric could be ordered to conduct further "additional surveys" if it fails to present sufficient material. That could significantly delay, or even compromise, the restart of the Higashidori nuclear plant, which Tohoku Electric has scheduled for July 2015.

**Faults under Higashidori N-plant active**

<http://www.yomiuri.co.jp/dy/national/T130218003799.htm>

**Underground crush zones confirmed as likely active faults**



**Crush zone inspection of Higashidori nuclear plant**

<b>Dec. 13-14, 2012</b>	NRA expert team conducts on-site inspection. Crush zones are determined likely to be active faults.
<b>Dec. 20</b>	First assessment meeting. Crush zones are determined to be active faults.
<b>Dec. 26</b>	Second assessment meeting. Tohoku Electric insists they are not active faults.
<b>Feb. 18, 2013</b>	Third assessment meeting. Draft assessment report says they are likely to be active faults.
<b>Timing undecided</b>	Non-NRA experts will study draft assessment report. NRA will make final decision on plant's safety.

A Nuclear Regulation Authority expert panel Monday effectively judged some crush zones on the premises of the Higashidori nuclear power plant in Aomori Prefecture to be active faults, a decision likely to delay the restart of the plant's reactors.

With the draft assessment report on an on-site inspection of Tohoku Electric Power Co.'s nuclear power plant, which was announced at a meeting of the NRA, the plant's operator will be obliged to review its quake intensity predictions and the facility's quake resistance, as several crush zones run near the site's reactor building.

But the experts did not say whether other shorter crush zones running directly under the reactor building are active faults, and called for additional inspection.

With the draft assessment report, it is highly likely Tohoku Electric will not be able to reactivate its reactors in July 2015 as initially planned.

The Higashidori plant is the second facility after Japan Atomic Power Co.'s Tsuruga nuclear power plant in Fukui Prefecture on which the team has issued a draft assessment report confirming crush zones on the premises as active faults.

Japan Atomic Power may have to decommission the Tsuruga reactors, since they conflict with the government safety standards, as active faults were found to be running directly under the site's reactor building.

Tohoku Electric is expected to submit more data, including details on geological conditions. But the company may also be obliged to decommission its reactors, depending on the contents of the additional data.

In the draft assessment report, based on an on-site inspection conducted in December, five experts mostly agreed on the assessment of the crush zones.

The NRA is expected to ask other experts to study the scientific validity of the draft assessment report. Based on the results of that study, the NRA will make a comprehensive judgment about the safety of the Higashidori plant.

The NRA will not allow Tohoku Electric to reactivate its plants until the safety of the facility is confirmed.

In the draft assessment report, the experts determined it is highly likely two crush zones running north to south on the premises of the Higashidori plant are active faults that moved sometime during the past 110,000 years, given the characteristics of the strata observed in trenches dug for the inspection and features of lifted terrain.

The experts also said a set of active faults were created as more crush zones expanded from the first two like a network.

An accurate picture of the active faults is needed to predict the intensity of quakes. The report said a broader-scope inspection is necessary to grasp the distribution and activity of the crush zones.

Tohoku Electric had said changes in terrain were caused by a swelling effect, in which the land becomes swollen due to the influence of groundwater.

But the draft said that cannot be the reason, as there are no known examples where slips of faults were caused by the swelling effect.

In Aomori Prefecture, which hosts Japan Nuclear Fuel Ltd.'s plant for reprocessing spent nuclear fuel, Electric Power Development Co. is also building a nuclear power plant in Omamachi, which will use recovered plutonium as fuel.

The latest draft assessment report may affect the seismic assessment of core facilities involved in the nuclear fuel cycle.

## **Faults may be active under Aomori plant**

<http://www.japantimes.co.jp/news/2013/02/19/national/faults-may-be-active-under-aomori-plant/#.USNF0fL1tEs>

## ***Higashidori reactor restart won't be soon, NRA panel hints***

Kyodo

Significant portions of major geological faults running under Tohoku Electric Power Co.'s one-reactor Higashidori nuclear power plant in Aomori Prefecture are probably active, a Nuclear Regulation Authority panel said in a draft report Monday.

The faults apparently do not run directly beneath the complex's reactor but the assessment indicates the unit may have to remain offline for quite some time because the utility will need to reassess the plant's quake resistance and take measures to reinforce the facilities.

The draft report, which was a summary of discussions among panel members, also touched on the need to further study other smaller faults that run underneath an area close to the reactor building.

Nuclear plant operators are banned from building reactors and related facilities important for safe atomic power output directly above active faults, and it's possible that some faults were not detected or identified as active at the time plants were built, as suggested by recent fault probes at other atomic facilities.

Officials of Tohoku Electric, who also attended the discussions, said the utility will conduct additional geological surveys, taking into account the opinions it has received from the panel.

But the utility maintained its argument that there are no active faults on the plant's premises. Executive Vice President Takeo Umeda said later in the day that one of the major purposes of the surveys is to "properly explain that there are no activities" in the faults. The utility plans to compile the results of the surveys in December.

The panel plans to finalize the draft report after listening to the opinions of other experts who have been tasked by the NRA to cooperate in the investigation of faults at other nuclear plants.

### **Government in lawsuit**

The central government was named Monday in a lawsuit filed by local residents seeking the decommissioning of Chubu Electric Power Co.'s Hamaoka nuclear power plant.

The plaintiffs are demanding that the government bar Chubu Electric from restarting the nuclear plant in the coastal city of Omaezaki, Shizuoka Prefecture.

The demand on the government was added to the complaint when it was updated the same day. The update, the lawsuit's fifth, was submitted by the plaintiffs' lawyers to the Hamamatsu branch of the Shizuoka District Court.

The update listed an additional 155 plaintiffs, bringing the total number suing to 336.

February 22, 2013

## **ERSS stops working for an hour**

## **Nationwide nuclear plant monitoring system stops working for over an hour**

<http://mainichi.jp/english/english/newsselect/news/20130222p2a00m0na007000c.html>

The Nuclear Regulation Authority announced that on Feb. 21, the Emergency Response Support System (ERSS) that monitors the status of nuclear plants around the country stopped sending temperature, pressure and other readings for over an hour.

The Japan Nuclear Energy Safety Organization (JNES), which manages the ERSS, noticed around 8:25 a.m. that it was not displaying data from the nuclear plants. They rebooted the system, and at around 9:40 a.m. it recovered. JNES is investigating the cause of the trouble.

The ERSS is designed to predict events in the progress of nuclear disasters, such as the time of a meltdown, using information sent from the plants. If a nuclear accident had occurred during the downtime, JNES would have had to receive data from the relevant energy companies via phone or e-mail and enter the data in manually, which could delay responding to the disaster.

The ERSS experienced the same problem at the end of 2011.

February 24, 2013

## **16 nuke plants (in theory) not eligible for restart in the near future**

### **Survey: No nuclear plants meet new safety standards**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201302240052>

None of Japan's 16 nuclear power plants has satisfied the government's proposed new safety standards, making them ineligible to be restarted in the near future, according to an Asahi Shimbun survey.

For nine of the plants, operators even said they cannot tell when they can meet the new requirements being drafted by the Nuclear Regulation Authority.

The Asahi Shimbun contacted 10 electric utilities to check the progress in safety precautions they have made since the accident at the Fukushima No. 1 nuclear power plant in March 2011.

**The 16 plants do not include the Fukushima No. 1 plant.**

The NRA will begin accepting applications for safety screening for the nation's 50 nuclear reactors based on the new standards in July. Only those reactors that pass the screening can be restarted. Utilities have been installing safety equipment and taking other precautions.

But Toyoshi Fuketa, an NRA commissioner in charge of the safety standards, said no utilities may be ready to submit applications for screening in July due to delays in implementing safety measures.



None of the 16 plants has filtered venting equipment for containment vessels, which is required under the draft outline of the new standards released at the end of January.

Work to install the equipment, which guards against the release of radioactive materials in an accident, has begun only for two reactors at the Kashiwazaki-Kariwa plant in Niigata Prefecture. Tokyo Electric Power Co. had envisaged bringing all the seven reactors at the plant back online in phases from April 2013.

Restarting boiling water reactors--the same type of reactors as those at the Fukushima No. 1 plant--will be particularly difficult because the NRA plans to grant no grace period for installing filtered venting equipment for those reactors.

A coastal levee or other facilities to prevent flooding by tsunami, which are also listed in the draft outline, have been installed only at the Onagawa plant in Miyagi Prefecture and the Shika plant in Ishikawa Prefecture.

Three plants located on a hill—the Ikata plant in Ehime Prefecture, the Genkai plant in Saga Prefecture and the Sendai plant in Kagoshima Prefecture—are not required to set up a levee.

The Hamaoka plant in Shizuoka Prefecture was erecting a levee but has been forced to make it taller because new government estimates show higher tsunami are possible.

The draft outline also calls for a main quake-resistant building, which will serve as an operations base in the event of an accident.

Only seven plants have constructed such a building. The Oi plant in Fukui Prefecture, the only nuclear plant operating in Japan, plans to build one during the first half of fiscal 2015.

Five plants, as well as the Monju prototype fast breeder reactor, could face further delays because the NRA said on-site investigations are necessary on the risk of active faults.

An expert panel under the NRA concluded that active faults likely run under the Tsuruga plant in Fukui Prefecture and the Higashidori plant in Aomori Prefecture.

A reactor at the Tsuruga plant may have to be decommissioned because the reactor building sits on a suspected active fault.

In addition, a fault that runs directly beneath reactor buildings at the Kashiwazaki-Kariwa plant may be defined as active.

February 28, 2013

## NRA revises mitigation guidelines

### Nuclear agency updates disaster mitigation rules

<http://www.japantimes.co.jp/news/2013/02/28/national/nuclear-agency-updates-disaster-mitigation-rules/>



The Nuclear Regulation Authority on Wednesday revised its disaster mitigation guidelines compiled in light of the Fukushima crisis by adding criteria for evacuation and other protective actions against radiation exposure.

According to the revised guidelines, people living within a 5-km radius of a nuclear power plant will be given iodine tablets, which help prevent thyroid cancer, ahead of time so they can promptly take the pills in the event of a fallout crisis.

People living outside the 5-km zone, meanwhile, will be ordered to evacuate if a radiation dose of 500 microsieverts per hour is detected, a tougher criteria than the International Atomic Energy Agency's benchmark of 1,000 microsieverts.

Based on the guidelines, local governments hosting nuclear plants and those on the periphery are expected to craft their own disaster mitigation plans by March 18.

But there could be many cases in which local governments will not be able to finish their disaster prevention planning by the deadline because the regulatory body has seen a delay in its own work to revise the guidelines.

The authority decided on the original version of the disaster mitigation guidelines in October, featuring the expansion of the radius of areas that need to make special preparations to 30 km from an atomic plant. It had been working out the details since.

It received a total of 3,155 comments over its plan to revise the guidelines during the two weeks it solicited opinions from the public, many of them saying that the radiation level that forces residents to evacuate is too high and that evacuation zones are too small.

Some also said iodine pills should be distributed in advance to residents living outside the 5-km radius as well.

The number of comments the NRA received was larger than it expected. As no major revisions were observed in the guidelines based on the opinions received, people who came to watch Wednesday's meeting of the NRA commissioners shouted out not to ignore public opinions.

Under the guidelines, the 5-km zone is called a "precautionary action zone" and residents will evacuate based on certain plant conditions before radioactive release starts, while the 5- to 30-km radius will be called an "urgent protective action planning zone," from which residents will evacuate depending on actually measured dose rates or other data.

The revised guidelines added the numerical targets for evacuation for people outside the 5-km radius, such as the 500 microsieverts per hour benchmark, among other details.

At 20 microsieverts, consuming local food will be restricted and people will be asked to temporarily relocate within a week.

As for the handling of iodine tablets, the guidelines said preparations should be made so that residents living within the 5-km radius can take the pills as they evacuate. Local governments will issue instructions about the timing

## Meeting the new NRA standards won't be easy

## Power companies to face tough new standards for nuke reactor restarts

<http://mainichi.jp/english/english/newsselect/news/20130228p2a00m0na015000c.html>

Power companies across the country will apply for permission to reactivate around five nuclear reactors when new safety standards for nuclear power plants go into effect in July, it has been learned.

The new nuclear regulatory agency is expected to take several months after receiving reactivation applications to decide whether or not to give the go-ahead for utilities to restart their reactors. However, because the only reactors currently in operation in Japan -- Kansai Electric Power Co.'s Oi Nuclear Power Plant's No. 3 and No. 4 units -- will also be subject to the new standards, there is a chance that Japan could find itself with zero operating reactors once again.

The Mainichi Shimbun surveyed domestic power companies on steps they are taking toward fulfilling the new safety standards.

One of the key characteristics of the new safety standards includes the construction of new equipment and facilities, such as a second control room or other "designated safety facilities." Because the newly established Nuclear Regulation Authority (NRA) has not established detailed installation requirements, most utilities held off revealing their progress to the Mainichi, saying they are waiting for the NRA's specifications.

Meanwhile, Tokyo Electric Power Co. (TEPCO), which is hoping to reactivate its Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture, indicated that it is in the midst of "deliberating a basic concept" for its adherence to the new requirements. Kyushu Electric Power Co., which is aiming to restart its Genkai and Sendai nuclear power plants, also said that it was "conducting specific deliberations." Power companies are expected to be given three to five years before the new facilities are made a requirement.

All the utilities have either finished building or are slated to build quake-proof facilities like the one that has served as a front-line emergency operations base in the Fukushima disaster. Shikoku Electric Power Co. finished its facility at Ikata Nuclear Power Plant in late 2011, fulfilling one criterion for reactor reactivation. The NRA has not yet decided whether it will give utilities individual deadlines on this criterion, but if that turns out to be the case, it could water down the effect of the new safety standards.

TEPCO has begun work on installing filtered vent systems at the No. 1 and No. 7 reactors at Kashiwazaki-Kariwa. Chubu Electric Power Co. has also said it will begin the same work at Hamaoka Nuclear Power Plant soon, but predicts it will take two to three years to complete. The NRA plans to make filtered vents a requirement for boiling water reactors (BWRs) -- the same type as the reactors at the stricken Fukushima plant -- in July, at the time the new standards go into effect. This will make it difficult to resume operations of the 26 BWRs, located primarily in eastern Japan, at an early date.

Meanwhile, utilities will likely be allowed more time to install filtered vents on the 24 pressurized water reactors (PWRs) in Japan, found mostly in the western part of the country, since their containment vessels are relatively large and their furnace pressures take more time to rise than in BWRs.

The new safety standards also include more stringent measures against fire, including the use of flame-resistant cables. Currently, flammable cables are used in at least 13 reactors. Since about 1,000 to 2,000 kilometers' worth of cables are used per reactor, inspecting and replacing all of them is bound to take a significant amount of time.

The stipulation that limits a reactor's operational life to 40 years is also expected to make it into the new standards. Three of Japan's reactors began operations over 40 years ago, and 14 have been in operation for over 30. If the rule is strictly applied, some reactors are likely to be decommissioned. Chugoku Electric Power Co. is weighing the cost-effectiveness of installing filtered vents on the No. 1 reactor at its Shimane

Nuclear Power Plant, which began operations 39 years ago, saying, "We'll consider the specifics of the 40-year rule in making our decision."

When the power companies were asked whether they had any requests for the NRA, Kansai Electric Power Co. responded, "We'd like (the NRA) to exchange ideas with the utilities."

Meanwhile, rules on active faults on plant properties were completely revamped under the new safety standards' quake and tsunami measures. Faults were heretofore inspected for any activity in the last 120,000 to 130,000 years. Starting in July, if no activity is detected within that time, the fault must be inspected for activity in the last 400,000 years.

Under the new standards, the construction of important facilities above active faults will be explicitly prohibited by law for the first time. The NRA will also demand the construction of coastal levees based on data on the biggest possible tsunami that could strike each of the country's reactors.

Following further deliberation by the NRA on the 40-year operation rule and deadlines for the new requirements, the new safety standards will be legislated and go into effect by July 18.

## Dead end for Japan Atomic Power

### EDITORIAL: The crisis facing Japan Atomic Power

<http://ajw.asahi.com/article/views/editorial/AJ201302280056>

Japan Atomic Power Co., an electricity wholesaler specializing in nuclear energy, has hit a dead end. All its reactors remain idle without any prospect of being restarted in the near term. That includes reactors at the Tsuruga nuclear power plant in Fukui Prefecture. The company, jointly owned by nine major electric utilities, is hamstrung in its ability to refinance loans due in April.

For the time being, however, the power wholesaler will keep itself afloat through loan guarantees and financial assistance from four major utilities. The electric power companies are not only serving as the troubled entity's shareholders but are also buying electricity from the firm.

But this is purely a stopgap measure, as officials have acknowledged.

All three off-line reactors owned by Japan Atomic Power face serious problems: One has a suspected active fault under its site and another has exceeded its operating life of 40 years. There is also fierce opposition to restart of the remaining one from the local governments. It should be assumed that there is little chance of putting the reactors back online.

In short, **Japan Atomic Power must start working on ways to effectively liquidate itself.**

This is easier said than done as Japan Atomic Power cannot avail itself to the usual liquidation process.

**A major challenge concerns storage of spent nuclear fuel.** Decommissioning a reactor takes many years. There are no short cuts to safely dismantling facilities contaminated with radioactive materials. Already, one of the company's four reactors is in the process of decommissioning.

Liquidating Japan Atomic Power will **require an entity that is capable of carrying out the task of tackling all these negative legacies in a responsible manner.**

Even if the creditor banks are held responsible for cleaning up the mess, ways must be found to raise the necessary funds.

Japanese regulations require operators of nuclear power plants to have reserve funds to decommission their reactors. But Japan Atomic Power has not set up sufficient reserves for the purpose, partly because the reactors will likely be decommissioned earlier than it had anticipated.

The electric power industry faces a severe business environment due to sharp increases in fuel costs. Utilities have been forced to sharply expand output at thermal power plants burning fossil fuels to compensate for the loss of power supplies from their nuclear facilities.

Protected by regional monopolies, the companies have been promoting their dependence on nuclear power generation together. Now, however, they are paying the price for the dependence. We fear that the collapse of one company could trigger a chain reaction of failures within the industry.

Successive governments promoted nuclear power generation as national policy. Politicians should now commit themselves to grappling with this challenge in order to avert any systemic crisis that disrupts stable power supply.

**It would be absurd, of course, to try to restart nuclear reactors to prevent the problems afflicting Japan Atomic Power from hurting the financial health of other electric power companies.**

The previous government, led by the Democratic Party of Japan, considered creating a new entity that would operate all nuclear power plants in Japan and take the responsibility for their safety and eventual decommissioning.

It is vital to dismantle Japan Atomic Power as part of measures concerning nuclear power policies.

**Who should shoulder the burden? And, in what ways? The process of closing down reactors that have no prospects of starting up again must start immediately. The necessary technological and human resources for decommissioning must be secured. There is no time to waste.**

March 4, 2013

## Lessons must be learned

### **Editorial: Nuclear disaster guidelines must put lessons from Fukushima into practice**

<http://mainichi.jp/english/english/perspectives/news/20130304p2a00m0na005000c.html>

The government's Nuclear Regulation Authority (NRA) has drawn up new guidelines for nuclear disaster countermeasures, providing specific standards for evacuations in the event of another nuclear plant accident. In October last year, the panel decided to expand the priority zone for nuclear disaster prevention measures from a 10-kilometer radius around nuclear power stations to 30 kilometers. Authorities must implement detailed measures that dispense of the safety myth surrounding nuclear power plants.

Disaster prevention measures are the last line of defense in the five-tier layer protecting people from the radioactive substances from nuclear power stations. While guidelines must be strengthened, local governments also have a crucial role to play in protecting local residents from radiation in the event of a serious accident. Twenty-one prefectural governments and 135 municipal governments around Japan's nuclear plants are drawing up nuclear disaster prevention plans, but their work has been delayed because it took the NRA longer than initially expected to work out its guidelines.

The guidelines are complex and there are numerous challenges to overcome. Local bodies are supposed to work out their nuclear disaster prevention plans by the end of this month, but some have never compiled such plans before. The NRA should help them, even if the process is prolonged.

Unlike the previous guidelines, the new guidelines call for a response before radioactive substances start leaking from damaged nuclear reactors. Residents within five kilometers from a nuclear plant are required to evacuate if a reactor faces serious trouble. Iodine tablets will be delivered in advance to residents in such areas so they can quickly guard their thyroid glands from radiation exposure in the event of a nuclear disaster. We can regard these measures as appropriate.

In areas located more than five kilometers from a nuclear plant, residents will be ordered to evacuate when airborne radiation levels reach 500 microsieverts per hour, and those who have difficulties fleeing their neighborhoods will be instructed to stay indoors. Under the guidelines, local bodies are required to stockpile iodine tablets and deliver them to residents in such areas if necessary.

However, critics have raised questions about whether 500 microsieverts is an appropriate level for ordering evacuations. The NRA should explain the basis for its figure. It should also consider delivering iodine tablets to households outside the five-kilometer zone in advance.

There are many other problems that need to be solved. The system to monitor radiation levels in the event of a serious nuclear accident must be firmly established to enable local bodies around nuclear power stations to evacuate their residents depending on levels of airborne radiation. Questions remain about how to establish such a system. Even those outside the 30-kilometer radius could be exposed to radiation if radioactive substances drift into their communities -- as was the case with the Fukushima Prefecture village of Iitate. Officials must work out countermeasures against such radiation exposure. They must also clearly establish the procedure for instructing local residents to take iodine tablets in case of a serious nuclear accident.

Authorities' response to the Fukushima nuclear disaster was sorely lacking. Information was not sufficiently provided to residents in areas affected by the crisis, adversely affecting the process of instructing them to stay indoors or evacuate.

If another nuclear plant accident occurs in the future, the central and local governments must not expose residents to radiation or endanger their lives as a result of deficiencies in their disaster countermeasures. Lessons learned from the Fukushima nuclear crisis must be put to good use in constantly reviewing the guidelines and working out regional nuclear disaster prevention measures.

March 5, 2013

## Monju fast-breeder under inspection

### Faulty equipment checks prompt NRA safety inspection of Monju

<http://www.japantimes.co.jp/news/2013/03/05/national/faulty-equipment-checks-prompt-nra-safety-inspection-of-monju/#.UTWtqTf1tEs>

Kyodo

TSURUGA, FUKUI PREF. – The Nuclear Regulation Authority began a regular safety inspection Monday of the troubled Monju prototype fast-breeder reactor after its operator was found to have carried out sloppy equipment checks.

The NRA will mainly seek to verify during the quarterly inspection through March 22 if the Japan Atomic Energy Agency has taken measures to correct its failure to check a raft of equipment last year, officials said.

The authority will also investigate whether the operator of the plant in Tsuruga, Fukui Prefecture, has been appropriately managing its fuel replacement unit inside the reactor that was repaired last August following an accident in 2010.

JAEA was found to have failed to conduct periodic checks on a quarter of its nearly 40,000 items of equipment before the deadline.

Its subsequent report handed in response to an NRA order was flawed, leading the authority to conduct an on-site inspection in February.

## **Restarts in 2013 unlikely**

Kyodo

Nuclear power stations are unlikely to resume operations by the end of the year because of the time it will take to complete safety checks under the new regulatory framework, a survey of the plants' operators indicated.

Kansai Electric Power Co.'s Oi nuclear power station in Fukui Prefecture, which currently boasts the only two operational reactors in the country, is scheduled to be idled for an inspection in September, regardless of the new safety guidelines to be unveiled by the Nuclear Regulation Authority in July, according to the Sunday poll.

The survey, which canvassed nine regional utilities and Japan Atomic Power Co., also found that their financial burden is growing as they reinforce safety measures in response to the March 2011 meltdowns at the Fukushima No. 1 plant.

Power firms expect the cost of implementing the new standards to total at least ¥1.1 trillion, while Kepco alone said it will require ¥285.5 billion in the medium- to long-term, the survey found.

But Kyushu Electric Power Co. was more upbeat, saying it could restart two reactors in July, providing the NRA swiftly completes the necessary safety inspections. All of the other nine companies polled declined to provide specific dates for restarting their reactors.

Although Shikoku Electric Power Co. said it aims to fire up its reactors at the earliest possible time, it has applied for government approval to hike household electricity rates based on the assumption that it will be able to restart its nuclear plant in Ikata, Ehime Prefecture, in July.

## **Monju fast-breeder reactor undergoes safety inspection**

<http://mainichi.jp/english/english/newsselect/news/20130304p2g00m0dm051000c.html>

March 8, 2013

## **Protecting nukeplants against terrorism is illusory**

### **EDITORIAL: Attacks on nuclear sites are best prevented by abolishing the plants**

<http://ajw.asahi.com/article/views/editorial/AJ201303080043>

A company in the United States trains operators of nuclear plants in how to defend them under terrorist attack.

It organizes squads of "terrorists" armed with laser guns and dispatches them to storm the site. Plant security guards, also armed with laser guns, defend it. The rules are that if a laser beam hits someone, he must fall. Will the terrorists seize the plants, or will the guards retain control?

The training, known as "Force on Force," is conducted at least once every three years at nuclear power plants under the initiative of the U.S. Nuclear Regulatory Commission.

After the exercise, the NRC thoroughly evaluates the plants' performance.

After the Sept. 11, 2001, terrorist attacks in the United States, as a precaution against attacks on nuclear power plants, operators were required to install additional equipment to cover scenarios of complete power failure and to strengthen training of staff to protect the 104 reactors nationwide.

Still, some critics say such measures are in themselves insufficient to counter terrorism. This is because the March 2011 disaster at Fukushima No. 1 nuclear power plant exposed the weaknesses of nuclear power plants in the face of enemies.

If terrorists destroy back-up functions and cut off the water and power supply, they might be able to create a whole new Fukushima crisis.

One Achilles heel revealed by that accident is the fact that storage pools for spent nuclear fuel are located outside the containment vessels and, therefore, may have insufficient protection, says Edwin Lyman, a senior researcher with the Union of Concerned Scientists, an American nongovernmental organization.

### **GUARDING AGAINST NEW THREATS**

U.S. nuclear power plants use the "design basis threat" principle in re-examining design standards in proportion to the threat level.

When weaknesses become clear after terrorist attacks or accidents, threat levels rise and design standards are revised. Since the Fukushima disaster, the NRC has been leaning toward the introduction of remedial measures.

Worry is rising, too, about potential cyber-attacks. Terrorists could hack systems and thereby interfere with power sources by remote control and perhaps disable cooling functions.

According to the U.S. Nuclear Energy Institute, since the Sept. 11 terrorist attacks, the U.S. nuclear power industry has spent a total of \$1.2 billion (about 114 billion yen) on improving its facilities. It says that compared with the World Trade Center buildings, nuclear facilities are smaller and it is difficult for terrorists to mount attacks by air. Furthermore, it explains that nuclear plant operators need not worry about cyber-attacks if they sever links between their computer networks and the outside world.

However, Charles Ferguson, president of the Federation of American Scientists, a cyber-terrorism analyst, disagrees. If terrorists bring in USB flash drives, they can easily infect systems with viruses, he argues, saying they could be spies.

As threats increase, what measures are appropriate to counter them? Even the United States, which stakes its prestige as a superpower on preventing any recurrence of international terrorism, has yet to find ways to deal with enemies that remain invisible.

## **JAPAN DILEMMA**

In February this year, an official in charge of emergency measures at Japan's Nuclear Regulation Authority visited the NRC to outline new plant safety standards scheduled to be drafted in July. The official asked for reactions.

One pillar of the new standards will be anti-terrorism measures. If a plane hits a nuclear power plant, all power sources could fail. To prepare for such a scenario, nuclear reactors should have decentralized power sources for their cooling systems, built in different places. A second, back-up control room is also needed, at least 100 meters away.

But instead of leaving severe-accident preparation to the plant operating utilities to implement at will, the government should require by law operators to fulfill the measures.

Japan has already taken measures such as creating restricted areas and installing fences and security cameras around important facilities, measures based on the nuclear material security guidelines of the International Atomic Energy Agency.

However, the first meeting of the Nuclear Regulation Authority to review nuclear security measures, held on March 4, revealed haphazard checking of the identities of plant workers.

First, **Japan needs to understand that other nations see it as an "underdeveloped" country in terms of nuclear security.**

But on the other hand, it is unreasonable to import the U.S. approach and to station armed private security guards at plants. Therefore, what kind of methods should Japan use to respond to crises? It faces a dilemma.

## **SPECIAL CONTAINERS**

Last autumn, a South Korean Internet media outlet quoted a North Korean official as saying: "If we attack Japanese nuclear power plants with missiles, we can cause explosions 320 times greater than that caused by the atomic bomb dropped on Hiroshima." The official was identified as an executive of the ruling Workers' Party of Korea.

The authenticity of the report is unclear. **But it is a fact that many Japanese nuclear reactors, including those on the Sea of Japan coast, stand within the scope of North Korea's intermediate-range ballistic missiles.**



In 2007, an Israeli air force fighter-bomber reportedly flew into Syrian airspace and bombed a nuclear facility in the east of the country. We cannot rule out similar possible attacks on our nuclear power plants.

Between 10,000 and 20,000 tons of spent nuclear fuel are currently held at Japanese nuclear power plants and related facilities. If idled nuclear reactors are restarted, they will produce more spent fuel.

What should we do to protect them from attack? We cannot rely fully on missile defense systems with imperfect interception rates. Nor can we indefinitely expand anti-terrorism measures.

**The only way to truly reduce the risk is to reduce the number of nuclear reactors as soon as possible. At the same time, spent nuclear fuel currently kept in storage pools should be moved to solid, air-cooled containers.**

The administration of Prime Minister Shinzo Abe insists it will cancel a pledge by the previous Democratic Party of Japan-led government to abolish all nuclear power plants by the end of the 2030s. The Abe administration also wants to restart idled nuclear reactors. Exactly what is its thinking regarding the safety of plants under potential attack?

March 11, 2013

## But has it?

### Safety Has Advanced Since Fukushima-Daiichi, Says IAEA Chief

<http://www.nucnet.org/all-the-news/2013/03/11/safety-has-advanced-since-fukushima-daiichi-says-iaea-chief>

Efforts to improve global nuclear safety have advanced since Japan's Fukushima-Daiichi disaster struck exactly two years ago, the head of the International Atomic Energy Agency has said, vowing to help make nuclear power as "safe as humanly possible".

Yukiya Amano, who last week was re-appointed to a second four-year term at the Vienna-based United Nations agency, said virtually all IAEA member states with operating nuclear plants had completed so-called stress tests and had expanded safety measures.

"We must maintain the momentum of constant improvement," he said in a statement to mark today's second anniversary of the nuclear accident.

Mr Amano said the IAEA has expanded the expert peer reviews which it offers to member states, covering areas such as the operational safety of a country's nuclear power plants, the effectiveness of its regulatory system, and its emergency preparedness and response arrangements.

He said: "We have thoroughly reviewed the IAEA safety standards and ways to improve them."

He said the agency's efforts are guided by the IAEA Action Plan on Nuclear Safety\*, which was unanimously endorsed by its 159 member states in September 2011.

Mr Amano said the worst elements of the accident are behind us and “we are now in the post-accident phase”.

On 11 March 2011 at 14:46 local time, a magnitude-9 earthquake occurred in northeast Japan. All eleven operating nuclear power reactors at the Fukushima-Daiichi, Fukushima-Daini, Onagawa and Tokai nuclear plants shut down automatically. Three units – Fukushima-Daiichi-4, -5 and -6 – were already shut down for maintenance.

At Fukushima-Daiichi, the earthquake and consequent tsunami resulted in a series of equipment failures, fuel meltdowns, and releases of radioactive materials.

Meanwhile, Japan’s prime minister Shinzo Abe said in a policy speech that nuclear power plants whose safety has been confirmed will be restarted.

Following the Fukushima-Daiichi accident, the Nuclear and Industrial Safety Agency ordered stress tests on all Japan’s nuclear reactors resulting in all 50 units being offline. Two units, Ohi-3 and Ohi-4, have since restarted.

\* The IAEA Action Plan on Nuclear Safety is online: [www.iaea.org/newscenter/focus/actionplan](http://www.iaea.org/newscenter/focus/actionplan)

March 13, 2013

## Make sure the 40-year limit is respected

### **Editorial: Strict standards needed on extending use of nuclear reactors**

<http://mainichi.jp/english/english/perspectives/news/20130313p2a00m0na003000c.html>

The Nuclear Regulation Authority (NRA) has begun working out standards for allowing the extension of the use of nuclear reactors as an exception to the 40-year limit that was amended in June last year. The authority should work out strict standards that will ensure that the 40-year rule will be effective.

The Mainichi has urged the government to reduce Japan's reliance on atomic power since the outbreak of the crisis at the tsunami-hit Fukushima No. 1 Nuclear Power Plant on March 11, 2011. Many members of the public also apparently want the government to cut down the country's dependence on nuclear plants. Therefore, the Liberal Democratic Party (LDP), which won the Dec. 16 House of Representatives election and regained control of the government, pledged during the campaign to seek to establish an economic and social structure that will not need to rely on atomic power.

The 40-year limit on the use of nuclear reactors, which the previous administration led by the Democratic Party of Japan (DPJ) originally pursued, is an important principle to achieve this goal. However, the use of

reactors in operation for 40 years can be extended by up to 20 years on condition that they meet standards set by the NRA.

The government must keep in mind that such an extension is an exceptional measure. The 40-year limit as well as the requirements that the latest safety standards apply to existing nuclear reactors is an important pillar of measures to ensure the safety of nuclear reactors.

Nuclear reactors age after being in operation for many years. Nuclear reactor pressure vessels, which are the cores of nuclear reactors, become fragile as they are exposed to neutrons generated through nuclear fission, and piping through which high-temperature, high-pressure water flows become gradually deteriorated. In Japan, there are 17 nuclear reactors that have been in operation for more than 30 years and three of them have been in use for over 40 years.

NRA Chairman Shunichi Tanaka said the 40-year limit on the use of nuclear reactors is reasonable saying, "I'm aware that the 40th year is a key moment."

The authority set up expert teams to draw up new safety standards for nuclear reactors and specific measures to cope with nuclear disasters, and opened their deliberations to the public. However, the NRA and its secretariat will work out standards for permitting the extension of the use of nuclear reactors beyond 40 years as exceptional measures without public discussion. The move is extremely regrettable all the more because the NRA has so far tried to ensure transparency of its discussions on nuclear power plant safety measures.

The NRA explains that it has accumulated enough expertise on preventing nuclear reactors from aging and the use of reactors can be extended beyond the 40-year limit on condition that they meet the latest safety standards as the reasons for not having public discussion. The panel also emphasized that such public debate is unnecessary because it is not discussing technical criteria from scratch and will make a final decision after soliciting opinions from the public.

However, the NRA's reluctance to hold public discussion has raised doubts over its attitude as well as over its proposed system to ensure the safety of nuclear reactors. The panel is required to draw up the standards by July -- when the revised Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors comes into force. It would be inappropriate if the NRA had avoided public discussion because there is not enough time.

The NRA's Tanaka told officials of its secretariat on March 11, "The consequences of the nuclear accident are extremely grave. I would like to promise to make the NRA an organization that can win the confidence of the public so that no nuclear plant accident will happen again."

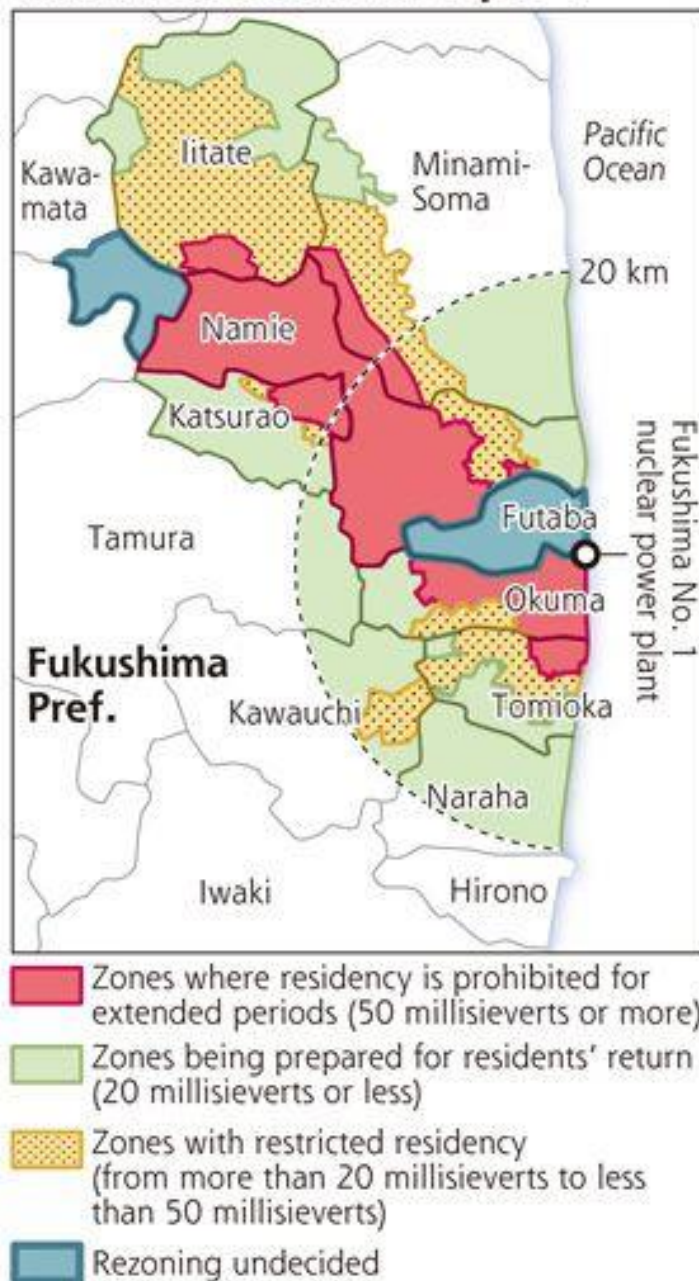
Ensuring transparency should be the top priority in efforts to win public confidence.

March 12, 2013

## From now on ... 20 millisieverts is OK

**New N-safety rules planned /  
Guidelines aimed at easing  
fears of return to homes in  
Fukushima**

**New evacuation zones to be  
formed after reorganization of  
restricted zones on April 1**



<http://www.yomiuri.co.jp/dy/national/T130311004443.htm>

The government plans to draft safety guidelines based on annual radiation exposure, to facilitate the return of residents in Fukushima Prefecture who evacuated following the outbreak of the crisis at the Fukushima No. 1 nuclear power plant, according to government sources.

**The new guidelines will likely allow the evacuees to return as early as spring next year to areas designated as zones being prepared for residents' return, where the annual radiation dose is 20 millisieverts or less.**

The government will draw up the guidelines by the end of this year, after the Nuclear Regulation Authority sketches them out in consultation with experts in Japan and elsewhere.

The so-called one-millisievert framework created under the Democratic Party of Japan-led government has hindered residents' return. After the outbreak of the nuclear crisis in 2011, the DPJ-led government set a long-term goal of lowering radiation exposure to no more than one millisievert annually.

This number has been considered a de facto safety standard, obstructing local residents' return to their hometowns.

Residents will be able to return once the evacuation directive is lifted, but many are afraid to do so, a government official said.

"Evacuees feel they can't return home because they think it isn't safe unless [the radiation dose] is one millisievert or less," the official said.

**The current administration plans to maintain one millisievert as a long-term target, but the new guideline is expected to present measures based on different radiation levels by which people can live without worry--such as annual accumulated doses of five to 10 millisieverts.**

The International Commission on Radiological Protection said the effects of radiation exposure on the human body are not clear up to an annual dose of 100 millisieverts. People visiting a hospital can receive a dose of seven millisieverts from one examination involving radiation.

The guideline may help the government review the decontamination target, observers said. Decontamination work requires an immense amount of labor and funding.

"[The former government] set a target of one millisievert in the chaotic aftermath of the disaster, and it's difficult to achieve," a government official said.

Fukushima Gov. Yuhei Sato also asked the government in February to clarify the safety standard. **There is a major difference between 20 millisieverts, the annual level below which people can return home, and the one-millisievert long-term target for decontamination,** which is a major impediment to the rehabilitation of the disaster-stricken areas, he said.

According to a calculation by the National Institute of Advanced Industrial Science and Technology, the cost of decontamination and other related work in 11 municipalities designated as evacuation zones will amount to at least 1.29 trillion yen.

**"If the cost of radiation control is added, it will likely be more than 2 trillion yen,"** a researcher with the institute said.

March 17, 2013

## **Nuke disaster plans : A long way from being ready**

### **Only 29 local govts have N-evacuation plans**

<http://www.yomiuri.co.jp/dy/national/T130317003710.htm>

The Yomiuri Shimbun

Only 29 out of the 156 local governments that were required by the government to compile antidisaster plans in preparation for nuclear emergencies have decided on concrete evacuation procedures and sites, according to a Yomiuri Shimbun survey.

After the outbreak of the crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, the government issued guidelines requiring 156 local governments within 30 kilometers of a nuclear power plant to compile antidisaster plans to prepare for a nuclear accident.

However, while such governments have made efforts to devise evacuation measures, many are finding it hard to coordinate with neighboring municipalities and secure suitable sites, particularly those with higher populations.

The Nuclear Regulation Authority asked the governments of 21 prefectures and 135 municipalities to compile their antidisaster measures by Monday.

The Yomiuri Shimbun asked officials in the 156 local governments whether they would meet Monday's deadline for compiling their respective plans, with 74 saying they would.

Under the Disaster Countermeasures Basic Law, among others, local governments are required to compile their own disaster management plans.

Based on government-set guidelines to deal with nuclear emergencies, the plans must include medical care measures to treat people exposed to radiation, a system to monitor radiation, as well as evacuation sites and transportation methods for evacuees.

Asked when they were likely to finish their respective plans, 17 governments said during March, while 29 said "sometime in the first half of fiscal 2013."

In total, 120 local governments, or about 80 percent of those subject to the requirement, expect the plans to be ready by autumn.

Seven local governments said their plans would be ready sometime in the second half of fiscal 2013.

Asked about reasons for the delay in drawing up evacuation measures, 53 of the 127 local governments said they needed more time to coordinate views with neighboring municipalities. Another 50 said they were having difficulty determining evacuation sites and means of evacuation for residents. Multiple answers were allowed.

Forty-nine governments pointed out the NRA's delay in drawing up its guidelines.

## **Disaster preparedness plans unfinished**

[http://www3.nhk.or.jp/daily/english/20130318\\_02.html](http://www3.nhk.or.jp/daily/english/20130318_02.html)

Some local governments in Japan with nuclear plants in their jurisdiction will likely miss Monday's deadline for reviewing their disaster control plans.

Other municipalities have already finished the process but have yet to draw up concrete evacuation plans.

In light of the 2011 nuclear crisis, the Nuclear Regulation Authority ordered municipalities within a 30-kilometer radius of a nuclear power plant to review their disaster control measures based on new sets of guidelines.

These call for evacuation areas around nuclear plants to be expanded from the current 10 kilometers to 30. They also require evacuation or stay-at-home orders to be issued based on radiation dosage.

An NHK survey shows only 46 percent of local governments said they will be able to finish reviewing their disaster control plans to meet the deadline.

Some municipalities say the central government was too late in revising the guidelines and providing explanations necessary for them to review their community-based plans.

Others say they haven't decided where to evacuate residents, or don't have the means to evacuate a large number of people.

March 18, 2013

### **Many local gov'ts near nuke plants miss anti-disaster planning deadline: survey**

<http://mainichi.jp/english/english/newsselect/news/20130318p2a00m0na008000c.html>

Many local governments near nuclear power plants failed to complete nuclear disaster response plans by the central government-imposed March 18 deadline, according to a Mainichi survey.

The Mainichi queried 21 prefectures and 135 municipalities on the creation or revision of emergency measures for the 30-kilometer radius Urgent Protective Action Planning Zones (UPZ) around nuclear plants, and found that 13 prefectures and 59 municipalities had met the deadline. Nearly 20 local governments that failed to do so are expected to complete emergency planning by the end of March, and many others stated they expect to finish soon after.

Fifty-eight municipalities and 12 prefectures said they had secured evacuation facilities for UPZ residents. However, others with large populations -- including Ibaraki Prefecture, where about 940,000 people live in the UPZ around the Tokai No. 2 nuclear plant -- said sufficient facilities won't be secured for the foreseeable future -- a fact that has some calling for the central government to intervene directly.



While evacuation plans are supposed to be part of local governments' overall nuclear disaster countermeasures, only eight prefectures and 30 municipalities told the Mainichi they had completed both as of March 18. This is partly due to the number of local governments that already had disaster countermeasures of one kind or another ready, and are expected to revise them soon.

Regarding new and revised plans, other than the 13 prefectures stating they had met the March 18 deadline, Ibaraki, Ishikawa, Yamaguchi and Saga prefectures stated they would complete their planning by the end of March. All affected municipalities in four prefectures had finished their planning. Eight affected municipalities in Ishikawa Prefecture said they would put the finishing touches on their countermeasures once plans were set on the prefectural level, while 11 municipalities in Shizuoka Prefecture said they would be finished soon.

In Ibaraki Prefecture, which still has no place to put the hundreds of thousands of people in the Tokai No. 2 nuclear plant UPZ in the case of an accident, the prefectural nuclear safety division told the Mainichi, "We'd like to see the central government take regional conditions into account and come up with a more flexible plan."

All the affected municipalities in Shizuoka Prefecture also stated they did not have evacuation facilities ready.

Among the prefectures that have completed countermeasure planning, Shimane Prefecture said neighboring Hiroshima and Okayama prefectures have agreed to accept disaster refugees if necessary.

Fukushima Prefecture, meanwhile, currently maintains evacuation facilities with a capacity of some 450,000 people, or the total populations of the 13 municipalities hit by the ongoing crisis at the Fukushima No. 1 nuclear plant.

The Nuclear Regulation Authority (NRA) expanded Japan's UPZ in October last year, from the previous 8-10 kilometer radius to the current 30. The change meant a significant increase in the number of municipalities covered by nuclear disaster countermeasures from the previous 15 prefectures and 45 municipalities, requiring new planning. Their efforts have been hampered, however, by the late release of new central government nuclear disaster guidelines.

The government, meanwhile, has decided to create legal requirements for disaster evacuation sites, including stocking supplies and setting up support facilities for evacuees, under revisions to the Basic Act on Disaster Control Measures.

March 20, 2013

## Problems again at Kashiwazaki

### **Another bent rod found in fuel assembly at Kashiwazaki nuclear plant**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303200048>

Tokyo Electric Power Co. said March 19 it has uncovered a second instance of fuel rods coming into contact with each other at its Kashiwazaki-Kariwa nuclear power plant in Niigata Prefecture.

According to TEPCO, the rods in question were found in a fuel assembly stored in a spent fuel storage pool for the No. 1 reactor.

The company has been surveying all seven reactors at the plant after rods were found in contact with each other inside the spent fuel storage pool for the No. 5 reactor in December.

The Nuclear Regulation Authority provisionally rated the latest incident a Level 1 on the seven-level International Nuclear and Radiological Event Scale the same day.

A fuel assembly is a bundle of 60 fuel rods. A metal water rod, or a passage for coolant water, runs through its center.

According to TEPCO, bent water rods were found in six fuel assemblies in the storage pool for the No. 1 reactor. One of those water rods had bent a fuel rod and pushed it into contact with one next to it.

The six fuel assemblies were used in the reactor between 1997 and 2002.

TEPCO said that under methods used until 1998, fuel assemblies were subjected to intense pressure when they were placed into metal casings. That pressure may have deformed the water rods, TEPCO officials said.

TEPCO and other nuclear plant operators have been checking whether similar instances have occurred at their facilities, but no such cases have been found so far.

March 21, 2013

## Thank you, Areva

### **Takahama MOX fuel shipment in works**

Kyodo, IJJI

<http://www.japantimes.co.jp/news/2013/03/21/national/takahama-mox-fuel-shipment-in-works/#.UUsJYtF1tEs>

Kansai Electric Power Co. said Thursday that its controversial plutonium-uranium mixed oxide fuel, or MOX, will soon be shipped from France to the Takahama power plant in Fukui Prefecture because the reprocessor is tired of storing it.

The hybrid fuel, which contains discarded weapons-grade plutonium, is scheduled to be burned under the Takahama plant's fledgling pluthermal (plutonium-thermal) power generation project using reactor 3.

It will be the first MOX delivery since the Fukushima No. 1 power plant was crippled by three core meltdowns after the March 2011 earthquake and tsunami.

Kepeco said the delivery will take place at the request of French nuclear conglomerate Areva SA, which processed the MOX and was planning to send it to Japan before the disaster.

Kepeco said the timetable for burning the hybrid fuel is still up in the air because nearly all of the nation's 50 viable commercial reactors are offline until beefed-up safety standards for atomic power can be issued.

Because the government intends to keep its nuclear fuel recycling policy in place despite public opposition, Kepeco held talks with companies, including Areva, about the MOX shipments, officials of the utility said.

Kepeco will decide whether to restart pluthermal generation at the idled reactors after the government completes the process of setting new safety standards and the views of local communities are taken into account, the officials said.

Areva said the secretive shipment would be handled by British subsidiary Pacific Nuclear Transport Ltd.

Kepeco activated reactor 3 in December 2010 as part of its first foray into pluthermal operations. It planned to add more MOX to the core but froze the plan after the Fukushima crisis erupted.

The utility hopes to restart reactors 3 and 4, which already has MOX on hand, in July.

For that to occur, however, all of the reactors will have to clear the new safety checks, which will be based on new standards scheduled to be issued in July.

Nuclear authorities have said additional surveys of the geologic faults beneath the Takahama plant aren't necessary.

## Still no back-up power at Fukushima Daiichi

### **Fukushima plant outage reveals lack of backup power source 2 years after crisis outbreak**

<http://mainichi.jp/english/english/newsselect/news/20130321p2a00m0na011000c.html>

The operator of the crippled Fukushima No. 1 Nuclear Power Plant suspects that the power outage that knocked out the plant's cooling systems for spent fuel pools was likely caused by a short circuit blamed on a small animal, revealing the utility's insufficient measures against those creatures.

A Tokyo Electric Power Co. (TEPCO) investigation found that a short circuit in a makeshift power switchboard -- which was installed two months after the March 2011 outbreak of the Fukushima nuclear disaster as part of a temporarily outdoor facility -- was likely caused by a small animal. The switchboard had no backup power sources.

It was the plant's first major blackout that affected multiple facilities for longer than 24 hours since the onset of the nuclear crisis, sending shivers throughout the country. The switchboard is connected to the cooling systems for the spent fuel pools of the No. 3 and No. 4 reactors as well as a shared pool, according to TEPCO. The malfunction of the switchboard is suspected to have further affected other equipment connected to it by cables.

The destroyed switchboard was one of four brought in by trailer, and was the last one in operation as TEPCO worked to replace the temporary outdoor switchboards with those inside reactor buildings. The work was scheduled to be completed by the end of the current fiscal year, or later this month.

A shutdown of the cooling systems for spent fuel pools causes fuel temperatures to rise, evaporating coolant water and eventually exposing fuel to bring about meltdowns. While multiple power sources are

secured for the cooling systems of nuclear reactors, there were no reserve power sources for the spent fuel pools.

"It takes time for temperatures to rise in spent fuel pools even if their cooling systems are down. There is no need to take the same emergency countermeasures as those for nuclear reactors," TEPCO spokesman Masayuki Ono said.

The blackout also revealed TEPCO's lack of measures against small animals, such as the use of rodent deterrents and other medical agents. Because **the switchboard's container has a half-open door to lead in cables**, "it leaves the system vulnerable" to place the switchboard outdoors compared to inside the highly-sealable plant buildings, said TEPCO officials.

March 22, 2013

## So what's new?

### **Govt. tells TEPCO to add multiple power sources**

[http://www3.nhk.or.jp/daily/english/20130322\\_01.html](http://www3.nhk.or.jp/daily/english/20130322_01.html)

Japan's Chief Cabinet Secretary says the government has instructed Tokyo Electric Power Company to install multiple power sources at the Fukushima Daiichi nuclear plant.

Yoshihide Suga made the comment at a news conference on Thursday. The plant suffered a power failure on Monday evening. It took about 29 hours to restore power to all the affected cooling systems, which service spent-fuel pools.

Suga said the government instructed TEPCO to supply multiple power sources to the cooling systems at the plant. He added it told the utility to implement other efforts as quickly as possible to restore the public's confidence in the safety of the plant.

He said the government also told the firm to improve its risk management as the utility failed to promptly report the latest trouble to the authorities.

Suga added TEPCO's handling of the power failure has greatly damaged public trust in the company.

March 24, 2013

## When it comes to nukes, even a minor incident can trigger a serious accident

### Accident highlights nuclear peril

<http://www.japantimes.co.jp/opinion/2013/03/24/editorials/accident-highlights-nuclear-peril/#.UU5KADf1tEs>

The power outage that shut down spent nuclear fuel cooling systems and other facilities for 29 hours last week at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant underlines the fact that conditions there remain precarious two years after the massive quake and tsunami on March 11, 2011, triggered triple meltdowns.

It also shows that Tepco failed to learn important lessons from the catastrophe at the plant — that all-out efforts must be made to prevent power outages that disrupt cooling functions at the plant. This incident will deepen people's distrust of Tepco.

If the power supply had not been restored in time, a meltdown of spent nuclear fuel could have occurred, resulting in a release of a massive amount of radioactive substances into the environment. Tepco and the government should not play down the gravity of this accident.

The power failure occurred on the night of March 18 and affected nine facilities at the nuclear power plant. It shut down the critical cooling systems for the pools containing spent nuclear fuel assemblies in buildings for reactors 1, 3 and 4 plus a common large pool containing 6,377 nuclear fuel assemblies.

Facility operations to remove radioactive substances from water used to cool the crippled reactor cores also ground to a halt.

Evidence strongly suggests the power outage was caused by a rat gnawing on wiring in a makeshift switchboard set up two years ago after the meltdowns of reactors 1 through 3. The animal was likely electrocuted when it touched terminals of the switchboard, thus causing it to malfunction.

The fact that this vital switchboard was designed in such a shoddy manner that a rat could gain entry and shut down plant systems suggests again that Tepco has not learned the lessons of the 3/11 nuclear disaster — which was ultimately caused by Tepco's poor plant design and its lack of caution.

The power outage demonstrates once again that **even a minor incident can trigger a serious accident at a nuclear power plant.**

If the temperature of spent nuclear fuel in the pools had risen enough to begin a self-sustaining critical reaction, a meltdown could have resulted.

It is deplorable that Tepco refuses to call the power outage an accident because radioactive substances were not released into the environment. It also did not make a public announcement for three hours after the power outage occurred.

Clearly Tepco retains the arrogant mentality of the nuclear power establishment.

The power outage accident revealed once again the dangerous side of nuclear power and the sloppy management and lack of sincerity on Tepco's part.

The government should drop its policy of restarting the nation's shuttered nuclear power plants.

March 25, 2013

## Safety first?

### Prime minister wants safety first before restarting reactors

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201303250107>

NAMIE, Fukushima Prefecture--Visiting the prefecture that hosts the crippled Fukushima No. 1 nuclear power plant, Prime Minister Shinzo Abe on March 24 reiterated that consideration of restarting suspended nuclear reactors hinges on guaranteeing their safety, although he believes the power supply is vital to the region's reconstruction.

"It will be difficult to recover (from the disaster) if there aren't stable sources of electricity," Abe, who visited the towns of Tomioka and Namie in the prefecture, told reporters.

"I am reminded that the nuclear disaster has had a significant impact (on Fukushima Prefecture). I would like to decide (whether to restart reactors) after thoroughly ensuring their safety."

The latest inspection is Abe's second visit to the prefecture since he became prime minister in December. Currently 48 of the nation's 50 nuclear reactors have been suspended as a consequence of the accident at the Fukushima No. 1 nuclear plant, where three reactor meltdowns occurred following an earthquake and tsunami on March 11, 2011.

On March 24, Abe talked with the mayors of Tomioka and Namie over future issues and other topics. Residents of the two towns have not been allowed to return since the disaster, but they will be allowed to make brief visits, excluding areas designated by the government as where people cannot live for more than six years from the accident due to high radiation levels, from March 25 and April 1, respectively.

Abe showed his intention to improve the infrastructure there, saying the government will "develop facilities for the gas and water supply."

Abe also visited Naraha, a town next to Tomioka, and encouraged police officers working at the Kami-Shigeoka checkpoint there.

"Your responsibilities will become more important when brief visits (to Tomioka) become possible," Abe said.

The prime minister also visited a farm utilizing plastic greenhouses in Koriyama, Fukushima Prefecture. Abe showed his desire to hurry along reconstruction minister Takumi Nemoto, who accompanied him, into taking measures to alleviate the damaging effects that negative publicity from the nuclear disaster have had on local farmers.

"The task of politics is to dispel these rumors (that are ruining the reputation of farm goods made in Fukushima)," Abe said.

March 30, 2013

## TEPCO to get "the best safety culture in industry"?

### **Tepco to set up independent office to oversee own nuclear safety efforts**

Kyodo

<http://www.japantimes.co.jp/news/2013/03/30/business/tepco-to-set-up-independent-office-to-oversee-own-nuclear-safety-efforts/#.UVXKNDf1tEs>

Tokyo Electric Power Co. said Friday that it will set up an office to independently oversee its nuclear safety efforts and actively communicate with the public about the risks associated with atomic power.

The measures were announced as part of a plan to reform Tepco's nuclear division, which failed to prevent the March 2011 triple meltdowns at the utility's Fukushima No. 1 atomic complex, triggering the world's worst nuclear crisis since Chernobyl.

Tepco also admitted that it should not simply blame natural disasters for triggering the Fukushima disaster because of the difficulty of predicting the huge tsunami that laid waste to the plant.

"We need to sincerely accept that we were not able to prevent an accident that should have been averted by making (the necessary) preparations," Tepco said.

Under the reform plan, the utility will create a nuclear safety oversight office by September that will operate outside of the nuclear division and report directly to the board of directors.

The office will be headed by an appointee recruited externally.

In addition, a social communication office, also to be led by an external appointee, will be created to collect and analyze data related to the risks of nuclear power and to promote better communication with the public.

The plan was compiled with the involvement of a supervisory panel of domestic and overseas experts, including former U.S. Nuclear Regulatory Commission Chairman Dale Klein and former British Atomic Energy Authority Chairwoman Barbara Judge.

At a meeting on the issue with Tepco officials, Klein said the plan demonstrates the utility's "desire to reform" but noted that it is just a starting point.

Judge, meanwhile, said she hopes Tepco will become a company with "the best safety culture in the industry."

## TEPCO only interested in safety

### **Tepco to set up independent office to oversee own nuclear safety efforts**

Kyodo

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Judge, meanwhile, said she hopes Tepco will become a company with "the best safety culture in the industry."

April 2, 2013

## **Magnitude-6 quake off Japan**

<http://mainichi.jp/english/english/newsselect/news/20130402p2g00m0dm001000c.html>

NEW YORK (AP) -- A magnitude-6.0 undersea earthquake hit off eastern Japan, the U.S. Geological Survey reported Monday. No tsunami alert was issued.

There were no immediate reports of damage or injuries from the quake, which the USGS said happened at 4:53 a.m. Tuesday local time (1853 GMT Monday).

The USGS said the quake hit some 107 kilometers (66 miles) east of Miyako, Japan, and some 327 kilometers (526 miles) northeast of Tokyo.

Japan's Meteorological Agency and the U.S. National Oceanographic and Atmospheric Agency issued no tsunami warnings or alerts.

April 3, 2013

## **Nuclear authority to require new inspections**

[http://www3.nhk.or.jp/nhkworld/english/news/20130403\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20130403_28.html)

Japan's Nuclear Regulation Authority plans to require new inspections by nuclear plant operators that want to operate reactors for more than 40 years.

A law enacted last June limits the life of Japanese nuclear reactors to 40 years, but says any reactor can continue operating for up to 20 more years with permission from the authority.

On Wednesday, the authority presented new requirements for such extensions. Plant operators will have to conduct ultrasonic checks of reactors' entire structures and closely examine the strength of concrete for reactor containment vessels.

The authority is also expected to require that the operators use non-flammable power cables and more than two pipes to inject water into reactors.

Three of Japan's 50 nuclear reactors are at least 40 years old. The 3 are offline.

## **High winds, heavy rain hit eastern Japan**

<http://mainichi.jp/english/english/newsselect/news/20130403p2g00m0dm031000c.html>

TOKYO (Kyodo) -- Eastern Japan was buffeted Wednesday by strong winds and heavy rain due to a low pressure system and a cold air front, the Japan Meteorological Agency said.

Another low pressure system is expected to travel near Japan again on Saturday and Sunday, bringing torrential rain to a wide area of the country, according to the agency

On Wednesday, the maximum wind velocity reached 144 kilometers per hour, comparable to a typhoon, in Choshi, Chiba Prefecture.

The agency continued to warn that Pacific coastal areas stretching from Hokkaido to the Kanto region surrounding Tokyo are expected to be affected by high waves on Thursday.

April 4, 2013

## Tougher measures

### Japan to set frequency limit for serious nuclear accidents

<http://mainichi.jp/english/english/newsselect/news/20130404p2g00m0dm013000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority said Wednesday it plans to set a frequency limit for accidents resulting in large releases of radioactive substances of below one every million years per reactor.

The NRA has been discussing nuclear safety goals, saying it is important to be aware of the risks that will remain once planned measures are implemented, instead of reviving the nuclear "safety myth" that prevailed before the 2011 Fukushima Daiichi complex disaster.

During a meeting of NRA commissioners on Wednesday, Chairman Shunichi Tanaka said he hopes to compile the nuclear safety goals around next week, including the accident incidence limit.

The safety goals also include limiting the frequency of reactor core damage incidents to once every 10,000 years and cesium 137 releases to up to 100 terabecquerels even if radioactive substances need to be emitted to prevent critical damage to a reactor container.

One hundred terabecquerels is around a hundredth of the estimated amount of cesium 137 released during the Fukushima Daiichi crisis. **The figure indicates that environmental contamination must be contained withing accident-stricken plants,** according to the NRA.

One terabecquerel is equivalent to 1 trillion becquerels.

As part of the ongoing efforts to flesh out the country's new nuclear regulations after the Fukushima crisis, the NRA decided the same day to impose a special inspection process for reactors that operators are seeking to run beyond 40 years.

Japan has decided to limit the operation of reactors to 40 years in principle, but an exceptional extension of no more than 20 years is allowed when safety requirements are met.

During the special inspections, plant operators will be asked to conduct checks including ultrasound examinations to determine whether there are cracks in reactor pressure vessels. Operators have previously only been asked to check welded areas of the vessels.

Utilities will also be required to apply the latest scientific findings to existing facilities, which is expected to serve as a major hurdle for older reactors to continue operating, according to the NRA.

Of Japan's 50 surviving commercial reactors, three are already 40 years old -- one reactor at Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture and two at Kansai Electric Power Co.'s Mihama plant, also in Fukui.

April 5, 2013

## More delay for Aomori

### Aomori fuel processors face regulatory delay

[http://www.japantimes.co.jp/news/2013/04/05/national/mistake-halts-fukushima-no-1-water-cleaner/#.UV3A\\_TdsFEs](http://www.japantimes.co.jp/news/2013/04/05/national/mistake-halts-fukushima-no-1-water-cleaner/#.UV3A_TdsFEs)

Jiji

The Nuclear Regulation Authority will not allow nuclear fuel-related facilities in Aomori Prefecture to operate before new regulatory standards are compiled, its chairman, Shunichi Tanaka, said Wednesday.

The new standards are expected to be implemented in December, according to the regulatory body.

This conflicts with Japan Nuclear Fuel Ltd.'s plan to launch its spent-fuel recycling facility to extract plutonium and uranium in the village of Rokkasho in October.

Recyclable-Fuel Storage Co., a joint firm between Tokyo Electric Power Co. and Japan Atomic Power Co., is also planning to open a temporary storage facility for spent fuel in the city of Mutsu in October.

The NRA intends to examine the facilities using the new regulatory standards before deciding whether to permit them to operate.

Suspected active faults in those areas have already cast serious doubt on the facilities' viability.

## Worrying

### Spring storm as powerful as typhoon to hit Japan over weekend

<http://mainichi.jp/english/english/newsselect/news/20130405p2g00m0dm020000c.html>

TOKYO (Kyodo) -- A spring storm might hit a wide area of Japan from Saturday through Sunday, the Japan Meteorological Agency said in a revised alert released Friday.

Stormy winds as powerful as a typhoon might hit some areas, the weather agency said, urging citizens to stay at home over the weekend.

Heavy rain might strike Pacific coastal areas, it added.

Wet and warm air from the south is expected to flow into a fast growing low-pressure system moving from the East China Sea into the Sea of Japan.

Strong southerly winds might hit western and eastern Japan, covering Kyushu, Shikoku and most parts of Honshu, on Saturday and northern and northeastern Japan, covering Hokkaido and the Tohoku region, on Sunday.

Gusts of 126 kilometers per hour and 108 km per hour could hit western Japan and eastern Japan, respectively, on Saturday, while waves of 5 to 6 meters are expected in coastal waters.

The weather agency also warned of lightning and snow slides due to a rise in temperature caused by southerly winds.

See also : High winds, heavy rain hit eastern Japan

<http://mainichi.jp/english/english/newsselect/news/20130403p2g00m0dm031000c.html>

## WHAT?

### **Japan's nuclear regulator to give plant operators 5-year hiatus on new safety facilities**

<http://mainichi.jp/english/english/newsselect/news/20130405p2a00m0na009000c.html>

A team of experts at the Nuclear Regulation Authority (NRA), which plans to implement new safety standards in July this year, decided on April **4 to postpone mandating nuclear plant operators to install special safety facilities for five years.**

The new facilities will be designed as an alternative frontline base if the central control room loses its function due to terrorism attacks. The plant operators will have to build the new safety facilities at least 100 meters away from nuclear reactor buildings to potentially avoid both of them being damaged at the same time. These safety facilities are also required to have cooling systems for reactors that can be remotely controlled without the central control room properly functioning.

In the Fukushima No. 1 Nuclear Power Plant accident, the amount of radiation increased in areas around the reactor buildings after the hydrogen explosions, and that made the use of the central control room difficult because it was built next to the reactor buildings. For this reason, the NRA's team considered implementing the new facilities.

However, since the NRA's new safety standards will mandate plant operators to install mobile facilities immediately after the standards are implemented in July, it concluded that they can secure safety in the short term and decided to postpone mandating building the special facilities. The NRA will officially accept the team's proposal at its regular meeting on April 10. Nevertheless, it still seems difficult for plant operators to restart nuclear plants anytime soon because the new safety standards will also require them in July to reinforce fire, earthquake and tsunami prevention measures.

April 6, 2013

## Weather forecast

### **Typhoon-like storm to hit Japan over weekend: agency**

<http://mainichi.jp/english/english/newsselect/news/20130406p2g00m0dm065000c.html>

TOKYO (Kyodo) -- A typhoon-like powerful storm is expected to strike a wide area of Japan over the weekend due to a fast-growing low-pressure system, the Japan Meteorological Agency said Saturday.

Very heavy rain will likely hit Pacific coastal areas of western and eastern Japan later Saturday, as well as of northern Japan on Sunday, with rainfall of 70 millimeters per hour anticipated in some parts, it said.

Gusts of up to 126 kilometers per hour could hit western, eastern and northern Japan by Sunday, while waves of 6 to 8 meters are expected in coastal waters, the agency added.

In light of the foul weather, West Japan Railway Co. said Saturday it is wholly or partially cancelling many train services connecting Osaka, Kyoto and Kobe with other regions from afternoon to night, in addition to reduced services within the big cities.

The Twilight Express connecting Osaka and Sapporo, Hokkaido, is also being canceled

## Preventing rats from causing another blackout is hard work

### Anti-rat work caused latest cooling system problem at Fukushima nuclear plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201304060040>

Work to prevent rodents from causing another blackout at the stricken Fukushima No. 1 nuclear plant accidentally shut down the cooling system for a spent fuel storage pool on April 5, the plant's operator said.

The cooling system didn't work for about three hours, leading to a slight rise in the temperature at the fuel storage pool in the No. 3 reactor building from 15.1 degrees to 15.2 degrees.

Radiation monitoring devices around the No. 3 reactor building did not show any abnormal figures, Tokyo Electric Power Co. said.

"We are sorry for causing the trouble. We will be more careful so that we will not make mistakes," TEPCO spokesman Masayuki Ono said.

On March 18, a rat entered a container of a temporary switchboard at the plant, causing a large-scale blackout that halted cooling systems for fuel storage pools at the No. 1, No. 3 and No. 4 reactor buildings. Power was restored after two days.

To prevent rats and other small animals from entering the container again, **workers installed wire mesh over cracks and openings on April 5. When a worker tried to put the mesh in place, a wire from it touched the terminal of the switchboard, leading to the stoppage of the cooling system,** TEPCO said.

To prevent mishaps from affecting the system, TEPCO needed to shut down the cooling operations while the work was under way to install the mesh wire.

But company officials acknowledged they lacked cautiousness by deciding to keep the system online during the work on April 5.

April 8, 2013

## TEPCO and crisis management

### Leakage increases doubt over TEPCO risk control

<http://the-japan-news.com/news/article/0000114850>

[Takashi Ito / The Yomiuri Shimbun]

A recent string of operational issues at Tokyo Electric Power Co.'s crippled Fukushima No. 1 nuclear power plant have called into question the company's risk management ability.

"We understand the gravity of the leakage of contaminated water," TEPCO official Masayuki Ono said somberly at a hastily arranged press conference Saturday.

The company had announced earlier that about 120 tons of water contaminated with radioactive substances had leaked from an underground storage pool at the plant.

This incident is just the latest in a series of accidents that have recently occurred at the Fukushima plant.

On March 18, the cooling system for storage pools containing spent nuclear fuel for three reactors was down for about a day. The accident was attributed to a rat that had caused a short circuit in an outdoor temporary switchboard.

To prevent a recurrence of such an incident, TEPCO on Friday began installing wire nets to protect the switchboards. On the same day, an operational error caused a loss of electricity from a switchboard. Furthermore, the trial operation of a new device to remove radioactive substances, called the Advanced Liquid Processing System, were suspended due to an oversight.

**This string of accidents served to highlight the vulnerability of the equipment and devices that have been temporarily installed at the plant. It has also shone a light on TEPCO's impaired crisis management ability.**

In the leakage of contaminated water, it took three days for TEPCO to start transferring the water after detecting signs indicating a problem, causing the extent of the leakage to expand.



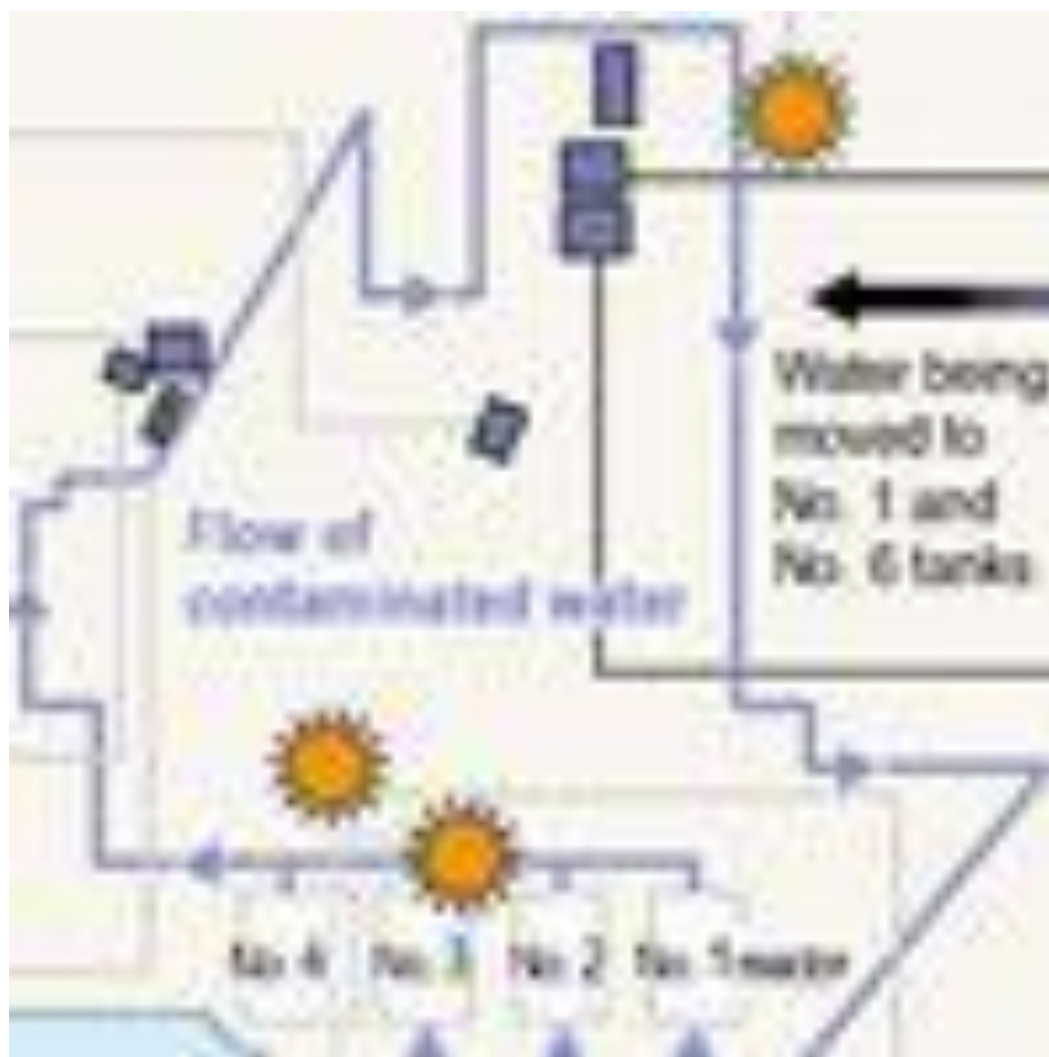
Ono said, "It's difficult to completely prevent problems given the current situation at the Fukushima No. 1 plant."

Muneo Morokuzu, a former adjunct professor at the University of Tokyo and an expert in nuclear safety regulations, said, "TEPCO's handling of [safety] measures resembles a game of whack-a-mole."

"The required level of management for the Fukushima No. 1 plant may be beyond TEPCO's capability. It's time to review the overall decommissioning operation," Morokuzu said.

### **TEPCO : No long-term perspective**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201304080104>



Radiation monitors and other devices have repeatedly broken down. Human error remains a constant problem. And the troubles plaguing the Fukushima No. 1 nuclear plant reached farcical levels when a rat caused a blackout and subsequent work to prevent a recurrence led to another system failure.

Such problems continue because the plant's operator, Tokyo Electric Power Co., is still using temporary equipment and makeshift facilities, such as power supply units critical to cooling the crippled reactors and spent fuel rods, two years after the nuclear crisis unfolded on March 11, 2011.

TEPCO has come up with countermeasures--but only after complications have arisen.

For example, TEPCO set up a headquarters on April 7 to deal with the latest problem: leaks of radioactive water from two underground tanks, including 120 tons from the No. 2 tank announced on April 5.

The headquarters is headed by President Naomi Hirose. The company said executives will be involved in planning countermeasures to deal with the leaks.

Reports of the leaks came on the heels of a large-scale blackout on March 18 that suspended cooling system operations for spent fuel storage pools and other facilities for a maximum of 29 hours at the plant.

The power outage occurred after a rat caused a short circuit at a temporary switchboard on a truck parked outdoors. The switchboard has been mounted there for about two years.

The cooling system for the spent fuel storage pool for the No. 3 reactor was also suspended on April 5 due to a short circuit caused by a worker installing wire mesh to keep rodents away from a different switchboard.

Devices to measure airborne radiation have repeatedly broken down at the plant.

A radiation meter at the main entrance malfunctioned on April 3, causing an alarm to ring. It was replaced, but the new one broke down only two days later.

Alps, a new system to decontaminate radioactive water, was suspended due to an operational error on April 4, only five days after a trial run began.

The system was scheduled to begin operating last autumn. But the starting date has been postponed because the durability of containers for storing high-radiation waste has been called into question.

Work to decommission the melted reactors, which is expected to take 40 years, has also made little progress.

Radiation levels remain high around the three reactors that experienced meltdowns, preventing workers from approaching them.

TEPCO has sent robots into the reactor buildings to investigate the conditions. Many of them failed to return.

Securing power sources and disposing of contaminated water are two of the most critical tasks to ensure safety during the decommissioning process.

But TEPCO has delayed replacing the temporary equipment and rickety facilities because it has underestimated the precarious conditions of the Fukushima No. 1 plant. Countermeasures are not being taken based on a long-term perspective.

A continuation of such problems could force TEPCO and the government to review the work program for decommissioning.

## Five videos with Leuren Moret

2 year Anniversary of the Fukushima disaster with Leuren Moret .

Part 1 Current Status of Fukushima & Comparisons to Chernobyl ( 16"45)

<http://www.youtube.com/watch?v=w34cWeAP1Dc>

Part 2: Excess Mortality & Fallout Avoidance (23"49 : map of increased death rate in the US since 3/11)

<http://www.youtube.com/watch?v=52gwtU2nH-k>

Part 3: Synergistic Relationships between Chemicals & Radiation: Multiplier Effect (8"20)

<http://www.youtube.com/watch?v=v9PigraQ26E>

Part 4: Mutations in Plants, Animals & Humans:  
Chernobyl, Three Mile Island, & Fukushima (29"52)

<http://www.youtube.com/watch?v=r-86qfavm1E>

Part 5: What we learned from Atmospheric Testing  
<http://www.youtube.com/watch?v=7EsE-mnSvb8>

Part 6: How do we fix it? (27"58)  
<http://www.youtube.com/watch?v=wXSAmDIKnX8>

April 10, 2013

## Draft for guidelines approved by NRA

### Nuclear regulator approves new guidelines

[http://www3.nhk.or.jp/nhkworld/english/news/20130410\\_19.html](http://www3.nhk.or.jp/nhkworld/english/news/20130410_19.html)

Japan's nuclear regulator has approved a draft set of safety guidelines electric power companies must follow in the event of emergencies such as natural disasters.

The Nuclear Regulation Authority on Wednesday approved the draft for guidelines to be adopted by July. Members of the group, together with experts, compiled the requirements over a period of about 6 months.

The rules call for utilities to enforce stricter rules in dealing with serious accidents such as earthquakes and tsunami. Most of the rules are preconditions that will need to be met in order to restart idled reactors.

Regulators say operators of older reactors must replace power cables with non-flammable ones and install backup pipes to cool reactors in case of emergencies.

Utilities must also build quake-resistant facilities that can house command headquarters in case of nuclear accidents. The facilities must store enough equipment and food for workers to operate without outside support for at least one week.

Plants with boiling-water reactors like those at the Fukushima Daiichi will have to install "filter vents" that can release pressure in containment vessels while limiting emissions of radioactive substances.

Power companies will also be asked to build breakwaters and waterproof nuclear plants as part of safety measures against tsunami of maximum scale that could strike.

The new guidelines will be modified after taking the public's opinion into account. Attention is focused on how regulators will apply the rules to screen idle reactors awaiting resumption.

## "Store it at any cost?"

### **Water leaks at Fukushima plant raise questions over plan to store radioactive water**

<http://mainichi.jp/english/english/newsselect/news/20130410p2a00m0na012000c.html>

Tokyo Electric Power Co. (TEPCO) said on April 9 that radioactive water was leaking from another underground cistern at the crippled Fukushima No. 1 Nuclear Power Plant, raising serious concerns and questions over whether the utility's plan to handle ever-increasing radioactive water would be effective.

Radioactive water was found leaking from an underground storage tank to which contaminated water was supposed to be transferred from another underground cistern where leakage was detected over the weekend. Partly because of the influx of underground water, about 400 tons of contaminated water accumulates each day at the nuclear complex. TEPCO, the operator of the crippled nuclear power station, had planned to build water tanks that are relatively easy to set up and use them as "trump cards" for handling polluted water. But the latest revelation of the leakage at another underground cistern at the plant has cast doubt on the feasibility of the plan.

Following the latest discovery of the leakage, the utility unveiled its plan to transfer contaminated water into other storage tanks with a total capacity of 43,000 cubic meters on the premises of the nuclear plant for the time being in an attempt to find a way out of the trouble.

Nevertheless, among the water tanks to which radioactive water is to be transferred are storage tanks that are of the same structure as those that were found leaking contaminated water. In addition, the condensate storage tank with a capacity of 4,800 cubic meters near turbine buildings for the Nos. 1 and 2 reactors is also a candidate facility to receive contaminated water, but the facilities from which contaminated water is supposed to be transferred are about 500 meters apart. Therefore, if the utility were to use the condensate storage tank, it would have to set up pumps and connect the tank with the troubled underground cisterns with pipes. The level of radiation near the condensate storage tank stood at 0.25 millisieverts per hour as of April 1. Therefore, it would likely be difficult to hire workers to do the job.

In a bid to break the so-called "shoestring operation," TEPCO is aiming for the early operation of ALPS, a multiple nuclide purification system capable of removing 62 kinds of radioactive materials. The utility has been working on the project because it is exploring the possibility of eventually releasing treated water into the ocean after securing the consent of local governments and residents. But local fishery cooperatives and other parties stand firm against the scheme.

Masayuki Ono, deputy general manager of TEPCO's Nuclear Power and Plant Sitting Division, said, "There is no way to release (treated water) into the ocean. We will continue to store it at any cost." But the utility has not shown the public how to do it.

April 11, 2013

## **NRA too safe-conscious????**

### **NRA should not get caught up in myth of completely 'risk-free' reactors**

<http://the-japan-news.com/news/article/0000125253>

The Nuclear Regulation Authority has approved the final draft of new safety standards to be applied to the nation's nuclear power plants.

Taking lessons from the nuclear crisis at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, the new standards will require operators of nuclear power plants to prepare for earthquakes and tsunami larger than those they had estimated prior to March 11, 2011.

Measures to prevent critical accidents, such as meltdowns of nuclear reactors, were also incorporated in the new standards, including energy supplies from multiple power sources and reinforcing reactor cooling systems.

It is indeed necessary to correct the weaknesses of the old safety standards in place before the nuclear crisis. However, although many people--including those inside the NRA--complained during the deliberation process that the nuclear regulatory body was going too far in seeking to reducing the risk from nuclear power plants to zero, their views were hardly reflected in the final draft.

#### **New standards overly strict**

It is clear that the final draft has a number of flaws.

One of them is the requirements on active faults found under nuclear power plants. In the previous safety standards, faults that were confirmed to have moved within 130,000 years were judged as active faults. However, the final draft will require operators to expand the scope of investigation significantly--movements within the past 400,000 years will be subject to investigation.

The nuclear regulatory body has already adopted the new criteria for researching active faults at idle nuclear power plants. While conducting the research, Acting NRA Chairman Kunihiko Shimazaki has repeatedly called on power companies to prove that they are "100 percent sure" that there are no active faults. A clause reflecting Shimazaki's requirements is expected to be included in the new safety standards.

However, it is obvious that Shimazaki's demands are extremely unscientific. Power companies should pursue approaches based on engineering, such as reinforcing the safety equipment at nuclear power plants so the power plants will be able to withstand seismic activity.

Some experts have raised concerns about other measures laid out in the final draft, pointing out their "excessiveness." One example is the requirement of filtered vents, which would help release pressure from nuclear reactors in the case of a serious accident.

The new safety standards will obligate all of the nation's nuclear power plants to install filtered vents. However, last month, the United States concluded it is unnecessary to install the filtered vents in its nuclear reactors for the time being, after hearing expert opinion. It is understandable that a senior official of the U.S. Energy Department raised concerns that Japan's strict standards may affect nuclear power plants in other countries.

After collecting public opinion on the final draft, the nuclear regulatory body plans to put the new standards into effect in July, or earlier if possible. Based on the new standards, the NRA will check whether the nation's idled nuclear reactors are suitable for restart.

### **Restart of N-plants urgent**

What is important is to improve the efficiency of inspections. According to the NRA, it will only be able to check three nuclear power plants at a time due to a shortage of officials possessing sufficient expertise. The nuclear regulatory body must reinforce its inspection framework by taking such steps as recruiting talented people.

Flexibility is also crucial. Measures should be introduced in accordance with the specific conditions of each nuclear power plant. It is not realistic to demand all nuclear power plants have the same amount of fire extinguishing equipment, for example.

To pass inspections, nuclear power plants will be required to introduce retrofits reflecting the latest safety measures for nuclear reactors. Improving safety is important, but we are concerned that the plan would lead to higher costs, forcing power companies to shut down some reactors.

The nation's power supply faces a tough situation. The price of electricity has gone up after the price hike for fuel for thermal power plants. It is urgent to restart power plants once their safety is confirmed.

We ask the NRA to judge whether nuclear power plants are eligible for restart, without being swayed by the current public desire for the absolute safety of nuclear power plants.

## Are the new guidelines effective enough?

### Editorial: Radiation monitoring system must protect residents near nuke plants

<http://mainichi.jp/english/english/perspectives/news/20130411p2a00m0na019000c.html>

The Nuclear Regulation Authority (NRA) has drawn up a plan to once again revise the guidelines for countermeasures against nuclear disasters, which calls for a radiation monitoring system in case of an emergency. Under the draft, the monitoring system would be beefed up, but some parts of it are short on specifics. **Moreover, the NRA has postponed debate on some important matters. As such, serious questions remain as to whether the new guidelines would be effective enough to protect residents from accidents at atomic power stations.**

Priority zones for nuclear disaster prevention measures would be expanded from 8-10 kilometers from nuclear plants to 30 kilometers and the areas where radiation monitoring posts are supposed to be established would also be enlarged under a review of the guidelines in the wake of the Fukushima nuclear disaster. Prefectural governments that host nuclear plants are supposed to use national government grants to set up monitoring posts in each 10-kilometer-square area in 16 directions from nuclear plants within the priority zones.

In case of an emergency, experts say it is desirable to use portable radiation counters in addition to monitoring posts to gauge radiation levels at about two-kilometer intervals. A study team of the NRA considered requiring local bodies to be prepared for such a monitoring system, but stopped short of incorporating such a stepped up system in the plan to revise the guidelines.

Concern remains about measures to protect monitoring posts from multiple disasters. Following the outbreak of the Fukushima nuclear disaster, 23 of 24 monitoring posts that the Fukushima Prefectural Government installed in areas around the Fukushima No. 1 Nuclear Power Plant were unable to send data because their devices were swept away by tsunami and communication lines were cut off because of the



earthquake. To prevent such trouble, it is necessary to lay backup communication lines and beef up emergency power sources. However, **the standards for monitoring posts do not require such measures**. Instead, the specifications of radiation monitoring posts are left up to each local government.

Furthermore, plumes of radioactive substances can be brought by winds to areas far from nuclear plants, as was the case with the Fukushima Prefecture village of Iitate. However, the NRA did not incorporate countermeasures against such plumes and instead postponed debate on the matter.

Some local bodies hosting atomic power stations are reportedly late in installing radiation monitoring posts because of a budget shortfall. Under such circumstances, one cannot help but wonder whether the national and local governments have sufficiently learned lessons from the nuclear accident and utilized them for their nuclear disaster countermeasures. The NRA is asking local governments hosting atomic power plants about whether they have installed monitoring posts. The authorities should instruct local bodies to improve any flaws in their monitoring posts, including their specifications.

Under the latest plan to revise the guidelines, the national government would set up a monitoring center if a nuclear accident were to occur, and gather, analyze and announce relevant data in an integrated fashion. The plan should be appreciated in that it would clarify the division of roles between the national governments, local bodies and nuclear plant operators and their responsibility. However, such a **division of roles** would be meaningless if radiation monitoring posts were not functioning properly.

Local bodies would distribute iodine tablets to residents of areas within five kilometers from atomic power plants to prevent thyroid glands from being exposed to radiation in case of nuclear accidents after holding briefing sessions on how to take such drugs as well as their side-effects. Such briefing sessions are necessary to relieve local residents' concerns. The NRA should also continue to consider distributing iodine tablets to those living outside the five-kilometer zones.

The NRA simultaneously released the draft of new standards for regulating nuclear plants that will come into force in July this year. However, **no discussions should be held on reactivation of idled nuclear reactors unless effective nuclear disaster prevention measures are devised**.

April 14, 2013

## Earthquake strikes Fukushima

## **M5.2 quake jolts Fukushima, vicinity**

<http://www.japantimes.co.jp/news/2013/04/14/national/m5-2-quake-jolts-fukushima-vicinity/#.UWrTJEpsFEs>

An earthquake of preliminary magnitude 5.2 jolted Fukushima Prefecture and its vicinity Sunday evening, the Japan Meteorological Agency said.

The 10:25 p.m. quake registered intensity 4 on the Japanese seismic scale of 7 in several parts of the prefecture, including Tamura and Minamisoma, according to the agency.

No tsunami warning was issued following the quake originated off Fukushima at a depth of around 50 km.

Also no damage was confirmed at the Fukushima Daiichi and Daini nuclear power plants so far, according to Tokyo Electric Power Co.

April 16, 2013

## **This verdict is a "travesty"**

### **Court rules Ohi plant safe (NHK video)**

<http://www3.nhk.or.jp/nhkworld/newsline/201304162007.html>

The Osaka district court has ruled that there is no evidence that faults are active and that the utility has implemented sufficient safety measures

### **Osaka court rejects demand to halt nuclear reactor**

[http://www3.nhk.or.jp/nhkworld/english/news/20130416\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20130416_37.html)

A Japanese court has rejected a suit by local residents demanding 2 nuclear power reactors in central Japan be turned off. The court said the reactors are safe.

The No. 3 and 4 reactors at the Ohi nuclear power plant in Fukui Prefecture are the only 2 online in Japan following the 2011 Fukushima nuclear disaster.

Operator Kansai Electric Power Company turned the reactors back on in August last year after government tests deemed them safe.

But 262 residents of Fukui Prefecture and nearby areas filed a suit demanding a court injunction to turn them off, saying they could cause a serious accident.

The plaintiffs said control rods to halt operations would not go into the reactors in time in a strong earthquake simultaneously involving 3 active faults in the region.

On Tuesday, Osaka District Court said the court could not accept the plaintiffs' argument.

Presiding judge Kenichi Ono said the court did not recognize a specific danger and that the Ohi plant meets safety standards for the resumption of operations.

### **Court rejects request to shut down Oi nuclear reactors**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201304160084>

REUTERS

A Japanese court rejected a petition to close down the country's only two operating nuclear reactors, in the country's first legal ruling on atomic power since the Fukushima disaster a little over two years ago.

Anti-nuclear advocates had sought to have the reactors at Kansai Electric Power Co.'s Oi plant in Fukui Prefecture shut down because seismologists suspect parts of the station sit above an active fault line, which would be against Japanese law on nuclear siting.

The injunction on Oi was rejected by the court on April 16, Kansai Electric spokesman Akihiro Aoike said by phone.

The Fukushima disaster, the worst nuclear accident in the world in a quarter century, prompted the gradual shutdown of all Japan's nuclear reactors until there were none left operating in May 2012, leaving the country without atomic power for the first time since 1970.

Japan has faced a soaring fuel bill as power companies ramped up purchases of gas, oil and coal to make up for atomic power, which accounted for 30 percent of the country's electricity supply before the disaster.

A government decision last June to restart the Oi reactors galvanized the country's previously dormant anti-nuclear movement, sparking the biggest demonstrations in decades.

Media surveys have shown a majority of Japanese want to abandon atomic energy by 2030, if not sooner. The country's new nuclear regulator is still investigating whether the suspected fault under the station is active.

## **Court turns down suit seeking suspension of Oi nuclear plant reactors**

<http://mainichi.jp/english/english/newsselect/news/20130416p2g00m0dm079000c.html>

OSAKA (Kyodo) -- The Osaka District Court on Tuesday turned down a suit seeking to suspend the operation of two reactors at the Oi power plant run by Kansai Electric Power Co. in Fukui Prefecture on the Sea of Japan coast.

The court rejected the lawsuit filed by a group of some 260 residents in western Japan seeking suspension of the two reactors which were re-launched in July 2012.

The plaintiffs are residents in eight prefectures of Osaka, Kyoto, Fukui, Gifu, Shiga, Nara, Wakayama and Hyogo who are worried about the possible outbreak of a severe nuclear disaster at the plant in the event of a major earthquake.

Presiding Judge Kenichi Ono said in the ruling that the two reactors satisfy safety standards that are deemed reasonable.

It was the first judicial decision on the operation of reactors other than the Fukushima Daiichi power plant, since the March 2011 outbreak of the nuclear disaster at the Tokyo Electric Power Co. plant in northeastern Japan.

The No. 3 and No. 4 reactors at the four-reactor Oi plant are the only ones currently in operation among the country's 50 reactors.

The plaintiffs filed the suit with the Osaka court in March 2012, seeking a court order to halt the re-launch of the two reactors. The two reactors went into operation four months later in July that year, as the government allowed Kansai Electric to re-launch the reactors.

In the lawsuit, the plaintiffs argued that the nuclear disaster at the Fukushima Daiichi plant clearly showed that the government's safety standards for reactors were wrong.

They also insisted that there were three active faults near the Oi power plant and that a major temblor caused by those faults could lead to a serious nuclear disaster.

In response, Kansai Electric argued that it had taken additional safety measures in the aftermath of the nuclear disaster at the Fukushima Daiichi plant, adding that anti-earthquake measures were secured at the Oi plant.

In June 2012, the residents filed a separate lawsuit against the government seeking a government order to suspend the operation of the two reactors at the Oi power plant.

Kansai Electric, the country's second-largest power utility firm after Tokyo Electric, provides power to the whole region of Kyoto, Osaka, Shiga, Nara and Fukui, and parts of Hyogo, Mie and Gifu prefectures.

## **Oi reactors can remain online: court**

by Eric Johnston

Staff Writer

<http://www.japantimes.co.jp/news/2013/04/16/national/oi-reactors-can-remain-online-court/#.UW2plkpsFEs>

OSAKA – In a key decision likely to affect efforts to restart the nation's nuclear power plants, the Osaka District Court ruled Tuesday that two reactors in Oi, Fukui Prefecture, are operating under rational safety standards and that it is not clear there is a concrete danger posed by their location near active faults.

The decision allows the Oi plant's reactors 3 and 4, the only two of Japan's 50 commercial nuclear reactors currently online, to continue operating until they are due to be shut down for safety inspections in September.

Some 260 antinuclear activists in Fukui Prefecture and the Kansai region had sought an injunction to shut them down, arguing they don't meet government standards for the time it takes for control rods to be inserted in an emergency shutdown in the event of a major earthquake.

Because of this, they said, the government should order Kansai Electric Power Co. to halt their operation.

The utility meanwhile argued that it had taken additional safety measures since the meltdown disaster started at the Fukushima No. 1 plant, including steps to lessen the impact of a major earthquake at the Oi plant.

The court, however, ruled that “the Oi No. 3 and No. 4 reactors satisfy recognized safety standards, and we cannot say that there is a concrete danger.”

The plaintiffs had argued that government standards require a reactor to be shut down 2.2 seconds after an earthquake, but the Oi reactors would take longer and thus are in violation of their operating license.

The court did not agree, saying the 2.2-second margin is not a set law but a safety judgment, and even if the amount of time was longer, it's not certain there is a concrete danger.

“The verdict today was a travesty. The government says if there's an active fault under a reactor, you shouldn't operate it,” said Aileen Mioko Smith, one of the plaintiffs seeking the injunction.

She and the plaintiffs' lawyers termed the decision as a gift to Prime Minister Shinzo Abe and those in the government and utilities seeking to restart Japan's remaining 48 reactors.

## All nuke facilities concerned

### Non-commercial nuke plants face order to beef up safety measures

<http://mainichi.jp/english/english/newsselect/news/20130416p2a00m0na012000c.html>

Non-commercial nuclear facilities such as nuclear fuel processing and reprocessing plants will also be mandated to take safety measures against severe accidents like the Fukushima nuclear disaster, an expert panel to the Nuclear Regulation Authority (NRA) has decided.

At the panel's first meeting on April 15, experts decided to legally obligate a total of nine nuclear facilities -- including Japan Nuclear Fuel Ltd.'s nuclear fuel reprocessing plant in Rokkasho, Aomori Prefecture -- to abide by new safety measures to come into force in mid-December.

Since the NRA is requesting plant operators to withhold from running nuclear fuel processing and reprocessing facilities until the new regulations are put into effect, the operation of those facilities -- including the Rokkasho plant scheduled to be completed and put into operation in October -- is expected to be further delayed if safety measures against severe accidents and other emergencies are beefed up under the new regulations.

The panel decided that strict standards should be applied to those facilities because nuclear fuels undergo various forms of chemical processing, stating, "Accidents could occur under various scenarios." Just like at commercial nuclear plants, the panel plans to demand plant operators to equip those processing and reprocessing facilities with emergency headquarters such as seismic isolation buildings and mobile power-supply and cooling systems.

The panel is tasked with examining regulation standards to be applied for a total of 51 facilities, including the abovementioned nine facilities and research reactors.

In Japan, there are two nuclear fuel reprocessing plants -- one in Rokkasho and the other in Tokai, Ibaraki Prefecture -- and seven nuclear fuel processing plants, including Japan Nuclear Fuel's uranium enrichment plant, radioactive waste burial center, and MOX fuel fabrication plant in Rokkasho. The panel will finalize its draft regulation standards for those facilities by sometime around September.

April 17, 2013

## Can Oi meet NRA requirements?

### **Regulators to start checking whether Oi plant can meet new requirements**

<http://mainichi.jp/english/english/newsselect/news/20130417p2g00m0dm081000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority on Wednesday decided to start from Friday a process to assess whether the country's sole operating reactors can meet new safety requirements coming into force in July.

If the NRA acknowledges that the No. 3 and 4 reactors at Kansai Electric Power Co.'s Oi plant in Fukui Prefecture have no serious safety problems, they will be allowed to remain online through September when they have to undergo mandatory routine checkups.

The two reactors are the only ones that are entitled to undergo such safety assessments before the new regulatory requirements, to be introduced in the wake of the 2011 Fukushima Daiichi nuclear power plant disaster, take effect.

The NRA plans to hold meetings attended by its commissioners and other staff to discuss their assessments. The outcome is expected to be compiled in the latter half of June, the regulatory authority said.

After the Fukushima disaster heightened concerns over the use of nuclear power, reactors that had been operating before the crisis went offline for routine maintenance and were unable to restart, leaving Japan with no atomic power generation at one point.

The No. 3 and 4 reactors at the Oi plant, however, were reactivated in July last year because they cleared provisional safety standards created by the government at that time.

They are still the only two reactors that are currently online in the country, but they have to be checked to determine whether they can meet the new safety requirements to continue operating until their routine checkup period arrives.

As for other reactors, utilities are expected to apply for their restart after the new requirements take effect in July.

The fresh regulations drafted by the NRA urge utilities to take specific measures to protect their atomic plants from tsunami -- the direct cause of the Fukushima crisis -- and to prevent or minimize the consequences of severe accidents.

Preparing an emergency response center that will not be affected by any earthquake or tsunami are also among the requirements, but Kansai Electric plans to use a quakeproof meeting room as a substitute until a seismic-isolated building is completed in fiscal 2015

April 19, 2013

## Oi reactors meet new standards

### KEPCO: 2 online Oi reactors meet new safety standards

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201304190089>

By RYUTA KOIKE/ Staff Writer

Kansai Electric Power Co. has concluded that the nation's only operating reactors, the No. 3 and No. 4 reactors at its Oi nuclear power plant in Fukui Prefecture, comply with the government's proposed new stricter safety standards that take effect in July.

The company compiled and submitted April 18 a report to the Nuclear Regulation Authority, the government's nuclear industry watchdog, which will have the final say.

The NRA is scheduled to confirm the safety of the Oi reactors by the end of June. If there is no major safety problem found, it will approve the reactors' operation until they are shut down for regular inspections, which will start from September.

According to the Kansai Electric report, a meeting room next to the central control room will be used as a management center in the event of an emergency, which is mandated under the new standards.



Based on the assumed maximum height of tsunami calculated at 2.85 meters, which is the same value as the result of a stress test done at the plant, the report said it is not necessary to construct a breakwater at the Oi facility. The plant sits at a height of 9.7 meters, so it said a tsunami even at the possible maximum height would not engulf the site.

Although a team of professionals at the NRA has been conducting a survey to determine whether a fault running beneath the plant is active, the report denied the existence of any fault activity.

Ikuo Morinaka, Kansai Electric's corporate director, expressed confidence that the two Oi reactors will continue operating after the new safety standards take effect in July.

"We believe they (the Oi No. 3 and No. 4 reactors) comply (with the new safety standards)," he said.

The NRA began the process to confirm their safety at an appraisal meeting held on April 19. After that, through hearings for Kansai Electric and field investigation work in the Oi facility, the NRA will confirm the current level of compliance with the new safety standards.

This work will also be taken as preparation for the NRA to conduct examinations of other nuclear power plants, which are scheduled to commence in July. Currently 48 of the nation's 50 nuclear reactors remain offline, a consequence of the accident at the Fukushima No. 1 nuclear power plant following the March 11, 2011, Great East Japan Earthquake and tsunami, which has prompted new safety standards for the industry to be drafted.

"It is difficult to say what we will finally decide about the Oi plant," said Shunichi Tanaka, NRA chairman. "But, we will make our best effort to confirm the current situation."

April 20, 2013

## Workers and (no) dosimeters - again

### **Fukushima workers treated water leaks without dosimeters**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201304200045>

Fourteen workers treated radioactive water leaking at the crippled Fukushima No. 1 nuclear plant without wearing personal dosimeters as required, Tokyo Electric Power Co. said April 19.

The dosimeters, which are worn on a worker's finger, measure and record the doses of beta rays, or high-speed electrons.

According to TEPCO, the 14 workers are employees of a partner company that engaged in the work from April 6. The leakage of radioactive water from underground storage tanks first came to light on April 5.

TEPCO was alerted that the workers were not using dosimeters on April 8, company officials said.

The officials said the case has been reported to the Tomioka Labor Standards Inspection Office, which provided corrective guidance.

April 25, 2013

## "Sloppy" management of radioactive water

### **Fukushima safety monitoring body says TEPCO's handling of radioactive water 'sloppy'**

<http://mainichi.jp/english/english/newsselect/news/20130425p2a00m0na013000c.html>

FUKUSHIMA -- The Fukushima Prefectural Government's council to monitor the process of decommissioning the crippled nuclear power station described Tokyo Electric Power Co. (TEPCO)'s handling of radioactive water as "sloppy" after inspecting underground storage tanks on April 24 that were found to be leaking earlier this month.

After inspecting the three troubled underground storage tanks at the Fukushima No. 1 Nuclear Power Plant, the council tasked with monitoring safety involved with the decommissioning of the crippled atomic power station said, "It requires sophisticated supervision to store contaminated water. The work is sloppy." It is the first time that an on-sight inspection of the underground tanks has been disclosed to the media since the leakages of radioactive water came to light.

The council was established in December last year to monitor the process of decommissioning the crippled nuclear power complex. It consists of officials from 13 municipalities around the nuclear plant in Fukushima Prefecture and experts on handling of radioactive waste and other fields. On April 24, council members inspected how the piping system for the tanks was checked for safety as well as the area around leakage detecting holes on the Nos. 1 to 3 underground storage tanks. The leaky tanks are among seven underground cisterns at the nuclear complex. The council members also inspected above-ground storage tanks to which radioactive water had been and would be transferred from the troubled underground storage tanks.

On the innermost "bentonite" sheet (6.4 millimeters thick) of the three-layered sheets covering the underground storage tanks, Susumu Nakamura, a council member and professor at Nihon University, said, "The leakages could have been prevented if it had been 50 centimeters to 1

April 26, 2013

## TEPCO develops its own filtered vent

## Tepco develops its own filtered venting system to hasten reactor restarts

<http://www.japantimes.co.jp/news/2013/04/26/national/tepco-develops-its-own-filtered-venting-system-to-hasten-reactor-restarts/#.UXmUhMoR2vN>

Kyodo

Tokyo Electric Power Co. will equip its idled nuclear reactors with filtered venting systems it has developed on its own to hasten efforts to restart them, company sources said Thursday.

The nation's regional utilities are trying to install the system because it's one of the new safety requirements that will be imposed in July to deal with severe accidents.

But Tepco's effort to develop its own filtered venting system is rare. The other utilities are outsourcing the job to heavy machinery makers.

How the new system will be tested and who that task will fall to also remains to be seen, given Tepco's perpetual equipment troubles and scandal-tainted maintenance record.

The equipment was built with the massive Kashiwazaki-Kariwa nuclear power plant in Niigata Prefecture in mind. The reactors at the world's biggest atomic plant are all offline until new nuclear safety standards can be implemented.

Tepco is hoping to shorten the manufacturing and installation period for the system to about six months, compared with the usual one to two years, and largely curtail the construction costs.

Cost-cutting is a key issue as the utility struggles to put its business back on track in the face of expanding outlays stemming from the core meltdowns at the Fukushima No. 1 plant in March 2011.

Tepco may finish the venting system at the Kashiwazaki-Kariwa plant's boiling water reactor in the summer, which would make it the first reactor in Japan equipped with a filtered vent.

Filtered vents can reduce the amount of radioactive material ejected into the atmosphere when reactors must undergo emergency venting to reduce pressure. The Fukushima No. 1 plant's venting systems lacked radiation-screening filters, allowing much of the prefecture to be tainted with radiation.

Tokyo Electric Power Services Co., a Tepco group company, designed the equipment, but it is uncertain whether the Nuclear Regulation Authority will allow Tepco to restart the idled reactors in fiscal 2013, because concerns linger over geologic faults running beneath the plant.

The utilities are expected to start applying for government permits to put their reactors back online after the new safety requirements take effect in mid-July.

Filtered venting will be an immediate requirement for boiling water reactors, but a five-year moratorium has been applied to pressurized water reactors because their containers are larger than BWRs.

The only two reactors currently operating in Japan are at the Oi plant run by Kansai Electric Power Co. Both are pressurized water reactors.

April 30, 2013

## Open letter to the UN from Akio Matsumura

### Take Action at Fukushima: An Open Letter to Secretary General Ban Ki-moon

<http://akiomatsumura.com/2013/04/take-action-at-fukushima-an-open-letter-to-secretary-general-ban-ki-moon.html>

Dear Secretary General Ban Ki-moon:

You no doubt observed the Fukushima disaster on March 11, 2011, with terror and worry: what would another nuclear disaster mean for state relations, especially in your home region of East Asia? Fortunately, it seemed, the effects were largely kept to Japan's islands and were less than many experts anticipated. Within weeks the stories dissipated if not disappeared from the major media outlets, only to be resurrected with personal interest stories of a hero or an especially tragic case of a lost loved one.

But the crisis is not over. Today, Martin Fackler reported in the New York Times that radioactively polluted water is leaking out of the plants and that the site is in a new state of emergency. Mitsuhei Murata, Japan's former ambassador to Switzerland, wrote a letter last year that brought international attention to the thousands of radioactive spent fuel rods at the site and the danger their vulnerability presents; he has testified to this several times before Japan's parliament. International experts,

independent and of the International Atomic Energy Agency, have commented that the Tokyo Electric Power Company's plans for the removal of the rods from the site and their storage in a safer, if still temporary, location are optimistic if not unrealistic.

The news media has done an adequate if meager job of reporting the many issues the fuel rods present. The radioactive fuel must be continuously cooled in order to stay safe; the improvised electric system that maintains this cooling has failed several times, once for more than 24 hours, both on its own and because of hungry rats. The mechanism that stands between safety and a fire at the Fukushima Daiichi plant is, to say the least, precarious. (And, as has been clear to many since the beginning, TEPCO hope to shirk its responsibility: first, in its safety and maintenance of the site; second, in paying its costs to Japan.)

One can only speculate to the extent of the consequences of a spent fuel fire, but, unarguably, once a fire ignites (from lack of cooling water or from an earthquake-caused spill), even the best case scenario would be an unprecedented global disaster. Possible consequences are the evacuation of Tokyo's 35 million people, permanent disuse of Japan's land, and poisoned food crops in the United States. These are not fantastic projections, but reasonable, if not conservative, expectations.

Yet, unimaginably but all too familiarly, the situation is still relegated to the back pages of our papers, and thus to the back of our leaders' minds. This reminds me of our international approach to solving climate change, which I have partaken in for decades, first in the United Nations and then as the Secretary General of the Parliamentary Earth Summit in Rio de Janeiro: we have a latent but very serious issue that we can likely fix but lack the resolve and political will to do so. As you well know, a successful climate change agreement has eluded us.

In comparison with climate change, however, the radioactive fuel rod issue at Fukushima is both easier to solve and more urgent. Any Japanese can tell you another serious earthquake will hit Japan well inside the next decade. That is to say, this situation must be resolved quickly.

Still, even if possible to solve, the issue needs constant attention and competent and well funded actors. So who might take charge? The International Atomic Energy Agency said last week that it will take TEPCO 40 years to secure the radioactive fuel rods in more appropriate storage containers. TEPCO is already refusing to pay Japan billions of Yen in cleanup costs, and does not have the technology or wherewithal to perform the task competently and expediently. Yet, so far the Japanese government has only looked to TEPCO.

The next obvious choice outside Japan is the United States, for their technological superiority, money, and leadership. Early after the accident, the U.S. Department of Defense offered assistance to Japan, but the Japanese denied their help. It remains to be seen whether that door has permanently closed. This would not be a benevolent action: the U.S. sits in harm's way in the case of a fuel pool fire; residents of California,

Oregon, and Washington have already received much radiation. U.S.-led action, except perhaps by Oregon Senator Ron Wyden, is unlikely: U.S. senators and representatives continues to demonstrate their impotence at home or abroad.

I have long been advocating for an international team of independent experts to investigate the situation. The United Nations is one appropriate body to assemble and deliver such a team. The IAEA, however, should not take on the responsibility.

The IAEA's mission is to promote the peaceful use of nuclear energy. Concerns of proliferation are not applicable here, and the disaster itself has certainly called into question (again) what the peaceful use of nuclear energy means and whether it should be promoted. While the agency has recently urged safety improvements at Fukushima, the official line of thinking is still, incorrectly and impossibly, to use TEPCO to carry out the process.

We are not only waiting for a bigger disaster. One is already unfolding before us. The health consequences of the released radiation are large: despite what major news outlets are reporting, we will see a significant jump in thyroid and other cancers in Japan in four to five years. Congenital malformations will likely begin to appear. The premature reporting of some UN agencies and the press at large has been irresponsible: do we have no notion of what "precaution" means? These latent effects will cripple much of Japan's young population within the decade.

Our myopia, in Japan and internationally, is tragic. One bright spot was the UN Special Rapporteur Anand Grover's fact-finding mission in Japan last year; I hope you back his findings and circulate them widely.

We have already waited too long, as we did for climate change, to take international action on Fukushima. But now it is clear that we cannot allow Japan to take care of an issue that could affect all of us.

Secretary General Ban Ki-moon, I urge you to use your unique position as the head of the United Nations to galvanize political will and organize an independent assessment team of international scientists and engineers to solve the Fukushima radioactive spent fuel rod issue before we are forced to reckon with the fallout of another disaster. Japan and the world should not have to suffer more because we choose to wait.

Yours truly,

Akio Matsumura

- Former Special Advisor to the United Nations Development Program
- Founder and Secretary General of the Global Forum of Spiritual and Parliamentary Leaders for Human Survival
- Secretary General of the 1992 Parliamentary Earth Summit Conference in Rio de Janeiro

May 1, 2013

## NRA's probing

### Nuclear regulators to probe Fukushima disaster

[http://www3.nhk.or.jp/nhkworld/english/news/20130501\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20130501_34.html)

Japan's Nuclear Regulation Authority is studying the detailed causes of the 2011 accident at Fukushima Daiichi nuclear plant. It plans to incorporate the findings into new safety standards for nuclear power stations.

On Wednesday, 19 employees of the authority and outside experts held an initial meeting of the study team. Their goal is to clear up the many questions that remain even after fact-finding groups from the government, the Diet and the plant's operator all published reports on the accident.

An official from the nuclear authority briefed the team on the main points of investigation -- namely, the impact of the earthquake, how the fuel rods melted, and how radioactive material leaked.

These issues gave rise to questions that remain unanswered, as high levels of radiation have hampered on-site investigations at the plant.

The group then discussed the unexplained water leak that occurred in the No.1 reactor building immediately after the quake.

The plant's operator, Tokyo Electric Power Company, has said that water from the pool for spent fuel trickled down through the air conditioning system.

The experts at the meeting called for further study on whether the cooling system was disabled by the quake, and whether the air conditioning system was damaged by the quake itself or by pressure from the leaked water.

The team hopes to pinpoint as many facts as possible through its investigation, including on-site surveys.

May 4, 2013

## What about the NRA?

### **Japan considers new body to boost nuclear safety**

[http://www3.nhk.or.jp/nhkworld/english/news/20130504\\_15.html](http://www3.nhk.or.jp/nhkworld/english/news/20130504_15.html)

Japan's Economy, Trade and Industry Minister Toshimitsu Motegi says Japan will consider setting up a new organization involving power companies to increase nuclear safety.

Motegi made a speech on Japan's energy policy at a think tank in Washington on Friday.

He said the government will establish a new organization to allow power companies to examine the safety of nuclear power plants and come up with measures to deal with problems.

Currently, the Nuclear Regulation Authority oversees the country's nuclear plants.

Motegi said following the nuclear accident in 2011, Japan has depended on imports for around 90 percent of its energy, which he calls unsustainable.

He said the government will review the energy policy of the previous government, which had the goal of shutting down all nuclear power plants in the 2030s.

Motegi reiterated the government's plan to allow the restart of nuclear plants whose safety has been verified by the Nuclear Regulation Authority.

## Turkey : not to worry

### **Japan vows 'high safety' for Turkish reactor**

<http://mainichi.jp/english/english/newsselect/news/20130504p2g00m0dm004000c.html>

ANKARA, Turkey (AP) -- Japan has learned from the Fukushima disaster and will offer technology with the highest safety standards while building Turkey's second nuclear plant, Japanese Prime Minister Shinzo Abe said Friday.

Turkey chose a Japanese-French partnership for the construction of a nuclear reactor on its Black Sea coast and a nuclear cooperation agreement was signed during Abe's visit to Ankara.

Despite being prone to earthquakes, energy-dependent Turkey declared in the wake of the Fukushima incident that it would stand firmly by plans to build three nuclear power plants.



A powerful earthquake and tsunami off Japan's northeastern coast knocked out vital cooling systems at the Fukushima Dai-ichi plant in 2011, causing multiple meltdowns and setting off the worst nuclear catastrophe since the Chernobyl disaster in 1986.

Turkey's Energy Ministry said the country decided to begin technical negotiations with Japan's Mitsubishi Heavy Industries and France's Areva, after companies from South Korea, China and Canada withdrew or were eliminated from the bid.

The 5,000-megawatt capacity plant is expected to cost \$22 billion and be operational in 2023.

Russia will construct Turkey's first plant in Akkuyu, on the Mediterranean coast. It is scheduled to begin test production in 2019.

In constructing the second plant, "we are going to use first-class technology," Abe said. "We have carried our experience in nuclear safety to the highest level through lessons learned from past accidents and risks."

"We will share our experience with Turkey," he added. "We have raised standards, lifting us to the highest ranks in terms of nuclear safety."

Turkish Energy Minister Taner Yildiz said under the cooperation deal with Japan, Japanese experts also would work with Turkish engineers in selecting the site of a third nuclear plant.

Turkish Prime Minister Recep Tayyip Erdogan said his country was a rapidly developing nation that was forced to diversify energy resources. He has repeatedly downplayed nuclear risks.

"There may be a one in a million risk but that does not mean we can't take a step," Erdogan said. "We still take planes even if they crash, we still ride cars even if there are road accidents."

May 5, 2013

## Any nuclear plants in the way?

### Active seabed faults spanning 100 km found off Izu Peninsula: study

Kyodo

[http://www.japantimes.co.jp/news/2013/05/05/national/active-seabed-faults-spanning-100-km-found-off-izu-peninsula-study/#.UYYL\\_EpsFEs](http://www.japantimes.co.jp/news/2013/05/05/national/active-seabed-faults-spanning-100-km-found-off-izu-peninsula-study/#.UYYL_EpsFEs)

Active faults stretching over 100 km in total have been identified near the coast of the Izu Peninsula, Shizuoka Prefecture, and could generate a major quake affecting areas from Tokyo to the major industrial hub around Nagoya, a new study has shown.

The faults mostly lie in the Pacific seabed southeast of the peninsula, and the nearest one is only 2 km from the coast, according to the recent survey conducted by a team of researchers.

If all of the faults were to move at once, they could trigger an earthquake with a magnitude of 8.0 or higher whose effects would be felt over a wide area from Tokyo to the north and Aichi Prefecture to the south, the researchers said.

Geologists have long suspected that an active fault lies off the eastern coast of the Izu Peninsula.

After studying ocean floor topographical and other data provided by the coast guard, the researchers concluded that bulges in the seabed around the peninsula may have resulted from past movements of these faults.

The faults can roughly be grouped in five blocks and a movement in a single block could generate a magnitude 7.0 temblor. Areas around the peninsula are highly prone to quakes, with magnitude 5.0 or more powerful tremors repeatedly rocking the area, the researchers said.

The team that conducted the study included researchers from Kanagawa Prefecture's Hot Springs Research Institute, which carries out geological surveys and monitors seismic activity.

## **Researchers find active seabed faults near central Japan coast**

<http://mainichi.jp/english/english/newsselect/news/20130505p2g00m0dm004000c.html>

TOKYO (Kyodo) -- Researchers have found active faults stretching over 100 kilometers in total near the coast of a central Japan peninsula which could cause a powerful quake affecting Tokyo and a major industrial region centering on Nagoya.

The faults mostly lie in the Pacific seabed southeast of the Izu Peninsula in Shizuoka Prefecture and the nearest one is only about 2 km from the coast, according to their recent study.

The faults could cause a quake with a magnitude of 8 or stronger if they all move at once, the researchers said.

A research team concluded after studying the government's ocean floor topography and other data that bulges in the seabed around the peninsula resulted from fault movements.

The faults can roughly be grouped in five blocks and a movement in a single block can cause a powerful temblor with a magnitude of around 7, they said.

Areas around the peninsula are prone to quakes, with those with a magnitude of 5 or larger occurring repeatedly.

Researchers have long suspected an active fault lies off the eastern coast of the Izu Peninsula.

The researchers taking part in the study included those from the Hot Springs Research Institute of Kanagawa Prefecture, an organization conducting geological surveys and monitoring seismic activities.

May 12, 2013

## Terrorist exercise at Fukushima

### Anti-terrorist drill held at second Fukushima nuclear plant

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201305120051](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201305120051)

NARAHA, Fukushima Prefecture--The 2011 accident at the Fukushima No. 1 nuclear power plant showed just how vulnerable the nation's reactors were to a natural disaster. Now, government officials are increasingly concerned about whether a similar crisis could be triggered by a terrorist attack.

On May 11, the first joint training exercise was conducted on the scenario that the crippled Fukushima No. 1 plant was targeted by terrorists.

Police officers and members of the Japan Coast Guard took part in the exercise held at the nearby Fukushima No. 2 nuclear power plant in Naraha, located about 12 kilometers south of the Fukushima No. 1 plant.

About 150 individuals participated in the drill, with many wearing protective gear against radiation. High-ranking officials of the Defense Ministry and Self-Defense Forces were also on hand to observe the exercise.

Police security measures at the Fukushima No. 1 plant have been strengthened due to concerns that terrorists might try to spread the radioactive materials contaminating the plant site.

The training exercise involved three hypothetical cases, including one in which terrorists tried to enter the plant from the main gate.

In another scenario in which hypothetical terrorists tried to sneak in using a cargo ship, Coast Guard members rappelled from helicopters to stop their entry. Terrorists that tried to escape by running to the coastal wall were seized upon by police dogs and captured.

During the exercise, the National Police Agency also unveiled a special radiation protection vehicle. Each bus-shaped vehicle costs about 150 million yen (\$1.5 million).

The vehicle body and windows contain lead to shut out radiation. Air pressure within the vehicle is also kept higher than atmospheric pressure to prevent radioactive materials from leaking in.

One of the vehicles will be deployed at the Fukushima No. 1 nuclear plant with the other to be dispatched from the Metropolitan Police Department in case of emergencies. The vehicle will allow police officers to respond to terrorist attacks at nuclear plants, patrol surrounding areas and help those who were late in evacuating from areas in the vicinity of nuclear plants.

### POST 3/11 MEASURES

Although only two of the nation's 50 reactors are currently in operation, the police and Coast Guard have strengthened anti-terrorist measures at all reactors.

Because meltdowns at the reactors at the Fukushima No. 1 plant were caused by a loss of electrical sources, security personnel have been placed to protect power sources and cooling facilities in addition to the buildings housing the reactors.

Japanese police began taking serious measures to protect nuclear reactors after 9/11. After those terrorist attacks in the United States, police officers were permanently stationed at all nuclear facilities in Japan. From May 2002, armed units equipped with submachine guns and sniper rifles were also deployed to the plants.

Under the current plan to deal with terrorist attacks on nuclear plants, those armed units would be the first responders. If the units are unable to suppress the terrorists, special assault teams from the police would be dispatched. If the SAT teams also failed to subdue the terrorists, the SDF would be called into action.

High-ranking police officials are focusing attention on preventing so-called internal threats in the form of individuals who pose as electric power company employees or plant workers to infiltrate nuclear plants. The concern is that once those individuals are inside the plant, they would serve as conduits for fellow terrorists.

Currently, electric power companies are held responsible for background checks of potential employees. However, based on a recommendation by the International Atomic Energy Agency, the central government is seeking to establish a system in which it would handle those background checks.

The Nuclear Regulation Authority has established a panel of experts to consider the specific details of such a system. Plans call for compiling a proposal in time for an international conference on nuclear plant protection that will be held next year in the Netherlands.

While the background checks would likely screen for criminal and drug-use records, concerns may also be raised about invasion of privacy and the handling of personal information.

(This article was compiled from reports by Atsushi Kashimoto and Kenji Ogata, a senior staff writer.)

## **Terrorist drill held for Fukushima nuclear plant**

<http://www.japantimes.co.jp/news/2013/05/12/national/terrorist-drill-held-for-fukushima-nuclear-plant/#.UY5wxUpsFEs>



Kyodo

Police and the Japan Coast Guard conducted a joint drill Saturday to prepare for a possible terrorist attack on the Fukushima No. 1 nuclear power plant.

About 150 officers and other people, including members of a special assault team of the police, participated in the drill at the Fukushima No. 2 nuclear power plant, about 10 km from Fukushima No. 1. Both plants are operated by Tokyo Electric Power Co.

The National Police Agency fears the stricken Fukushima No. 1 could make for a tempting target for terrorists because the cooling systems there are still highly fragile.

The drill was conducted on the assumption that three terrorists were hiding in a cargo ship berthed at a pier at the facility.

Members of a coast guard antiterrorism team boarded the ship from a helicopter and held two of the three attackers while police captured the third terrorist inside the plant's compound.

Under another scenario, members of a special assault team and other officers blocked terrorists who were attempting to storm into the nuclear plant in a vehicle with weapons and explosives.

### **Anti-terror training at Fukushima**

[http://www3.nhk.or.jp/nhkworld/english/news/20130511\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20130511_21.html)

Japanese police and the Coast Guard on Saturday conducted a large-scale anti-terrorism drill at a nuclear power plant in Fukushima.

About 150 personnel participated in the drill at the Fukushima Daini plant, about 10 kilometers from the Daiichi facility. The exercise was based on the scenario that terrorists were attacking the plant.

The participating groups include a police firearms control unit and a special attack team, as well as Coast Guard anti-terrorism forces.

In the scenario, terrorists tried to approach the nuclear plant from the sea. The Coast Guard unit seized their boat and arrested them.

Another unit descending from a helicopter fired at terrorists who were hiding in a boat that had come ashore.

Police forces exchanged fire with terrorists who used a car to burst through the front gate of the plant. Officers wearing radiation suits captured the assailants.

The National Police Agency believes that the possibility of terrorists targeting nuclear plants has increased. It says they probably saw how troubled people were by the radioactive fallout from the Fukushima plant 2 years ago.

National Public Safety Commission Chairman Keiji Furuya said residents had expressed fear over the safety of the nuclear plant. He said the exercise was meaningful, since the participating units were able to demonstrate how well they are prepared for such attacks.

See also:

### **Drill against terror attack on Fukushima nuclear plant conducted**

<http://mainichi.jp/english/english/newsselect/news/20130512p2a00m0na008000c.html>

May 14, 2013

## Tsuruga: active or not active?

### Tsuruga plant host city calls for cautious deliberations on faults

<http://mainichi.jp/english/english/newsselect/news/20130514p2g00m0dm040000c.html>

TOKYO (Kyodo) -- The mayor of the city hosting the Tsuruga nuclear power plant in western Japan on Monday called on nuclear regulators for "cautious deliberations" before reaching a conclusion on whether one of the plant's reactors are sitting above an active fault.

"I have doubts about (the Nuclear Regulation Authority's) rushing toward a conclusion," Kazuharu Kawase, mayor of the city of Tsuruga in Fukui Prefecture, said when he visited the NRA's office just days before an NRA-appointed panel is expected to conclude that a fault below the Tsuruga plant's No. 2 reactor is likely to be active.

If the five NRA commissioners agree that the reactor is likely to be above an active fault based on the panel's assessment, plant operator Japan Atomic Power Co. may be left with no option but to scrap the facility.

Noting that Japan Atomic Power is yet to finish its ongoing investigations on the fault, Kawase added, "I want the NRA to **cautiously deliberate the matter from a broad viewpoint, reflecting the outcome of the operator's investigations and various opinions in and outside the country.**"

The Tsuruga plant on the Sea of Japan coast has two units, with the No. 1 reactor starting commercial operation in 1970 and the No. 2 reactor in 1987.

Kawase has said during talks with a senior official of the Economy, Trade and Industry Ministry that the local economy is "battered" because of the suspension of the two reactors, while discussions over the faults have made prospects unclear.

The NRA's Deputy Secretary-General Hideka Morimoto, however, sought understanding over the panel's plan to compile its assessment on Wednesday.

"The panel has spent quite a long time (on discussions)...and is trying to summarize its assessment by using the data available at this moment," he said.

But he also said the assessment could be reviewed if Japan Atomic Power submits new findings.

In quake-prone Japan, nuclear power plant operators are not allowed to build reactors and other facilities important for safe reactor operation directly above faults that could move in the future.

The NRA plans to introduce new safety requirements from July in the wake of the disaster at Tokyo Electric Power Co.'s Fukushima Daiichi nuclear complex in 2011, a move that will pave the way for the restart of the country's reactors, most of which are now offline.

But a reactor with an active fault underneath is unlikely to be able to clear the safety assessments to be conducted by the NRA.

May 15, 2013

## Tsuruga sits on active fault

### Fault under reactor deemed active

<http://www3.nhk.or.jp/nhkworld/newsline/201305152310.html>

### Experts say reactor sits on active fault

[http://www3.nhk.or.jp/nhkworld/english/news/20130515\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20130515_34.html)

An expert panel of Japan's Nuclear Regulation Authority has officially concluded that a reactor on the country's Sea of Japan side sits on an active fault.

The panel compiled its final report on the Number 2 reactor of the Tsuruga plant in central Japan on Wednesday. Experts had examined the site for 6 months.

Government safety guidelines ban building of reactors above faults that can move and cause earthquakes.

The finding prohibits the plant's operator, Japan Atomic Power, from putting the reactor back into operation unless the utility produces data overturning the panel's decision. If it fails, the reactor may have to be scrapped.

Japan Atomic Power says it will finish examining the fault in June.

The panel is set to look into fractures suspected to be active at 6 nuclear plants. The Tsuruga plant is the first for which the panel made a final report

May 16, 2013

### Fault under reactor at Tsuruga active: NRA

<http://www.japantimes.co.jp/news/2013/05/16/national/fault-said-active/#.UZPmpUpsFEs>

by Kazuaki Nagata  
Staff Writer

A fault running under reactor 2 at the Tsuruga plant in Fukui Prefecture is active, a Nuclear Regulation Authority panel said Wednesday, effectively killing any chance the reactor will be reactivated.

The report by the panel of five experts, including NRA Commissioner Kunihiko Shimazaki, is the first issued on its investigation into active faults at the Tsuruga plant, and deals a heavy blow to its operator, Japan Atomic Power Co.

The NRA will discuss what to do about the Tsuruga reactor at its regular meeting scheduled for next Wednesday.



The panel determined that the fault, a zone of pebbles and sediment called D-1, could shift at the same time as two others: one known as K and the other an active major fault called Urazoko.

The K fault, which appears to have moved within the past 130,000 years, is therefore considered technically active. The report also finds that the D-1 fault is part of this “structure,” and thus is active as well. The active Urazoko fault is located about 200 to 300 meters from the reactor buildings.

Japan Atomic Power has claimed the K fault is inactive based on its analysis of volcanic ash, which it says shows there has been no recent movement. The panel rejected this claim as untrustworthy.

“The panel thinks that the D-1 fault is an active fault, which needs to be taken into consideration in earthquake-resistance planning,” the report said.

Meanwhile, the Tsuruga plant’s reactor 1, which has been in operation for 43 years, is likely to be decommissioned. New safety rules to be implemented in July ban in principle reactors 40 years or older. Consequently, Japan Atomic Power, which is funded by regional utilities, will have a hard time getting permission to restart its reactors at Tsuruga.

However, if it provides new evidence that the fault is inactive, the NRA may retract its decision, the panel said.

“When new knowledge is found to (prove that the fault is inactive), it is possible that we will review this (evaluation) if necessary,” the report said.

Reactors and equipment critical to safety cannot be built directly over active faults.

Only a week after the panel members inspected the site in December they expressed the opinion that D-1 was probably active.

## **No go for Monju**

Kyodo

The Nuclear Regulation Authority said Wednesday it will effectively prohibit the trouble-plagued Monju prototype fast-breeder nuclear reactor from restarting, at least until its operator remedies its safety management.

“The Japan Atomic Energy Agency cannot sufficiently secure the safety of Monju,” the NRA said in a document, referring to JAEA’s delayed checks on a wide range of Monju’s equipment, reported last November, and subsequent blunders. “We see deterioration in its safety culture.”

Under the order to keep the reactor idled, expected to be issued later this month after necessary procedures are taken, JAEA will be barred from engaging in preparatory work for resuming Monju operations until it overhauls its maintenance and management system for the facility.

A senior NRA official said the order will likely be in place at least until around January because JAEA is not expected to finish the equipment inspections by that time.

Monju, work on which started in 1983, has remained offline for most of the past 20 years because of various problems.

The facility had been expected to play a key role in the country’s nuclear fuel recycling effort.

The reactor first achieved criticality in 1994 but was shut down by a serious sodium coolant leak and fire in 1995 that the operator tried to cover up.

Monju was briefly restarted in May 2010 but, before reaching full output, was halted again when fuel-loading equipment fell into the reactor vessel that August.

Last November, JAEA said it skipped necessary procedures when it delayed planned inspections on nearly 10,000 Monju components, including equipment deemed important for safety. A JAEA report on the lax checks submitted in January also contained errors. It has been reported that total costs for the Monju project have run to ¥1 trillion.

May 20, 2013

## "We cannot allow the safety myth to persist atop active faults"

### **Yoroku: Rituals and myths have no chance against active faults**

<http://mainichi.jp/english/english/perspectives/news/20130520p2a00m0na006000c.html>

Even for those in the present day who know what it is, liquefaction is a terrifying phenomenon: the eruption of massive volumes of sand and gravel through cracks that emerge as the earth shakes violently. The people from the Jomon and Yayoi periods -- from about 10,000 B.C. to 300 A.D. -- must have been panic-stricken when confronted by it.

At an archaeological site in Fukui Prefecture dating back to the Yayoi period, large rocks have been found erected at a location pointing to previous liquefaction. Seismic archaeologist Akira Sangawa suspects that the rocks were brought over from a nearby river, and used in a ceremony to quiet the trembling earth. The large rocks, in other words, were meant to intimidate the smaller ones that burst through cracks in the earth.

At another site, clay pots were found overturned on sand and gravel that had emerged as a result of liquefaction. Clay pots were also found overturned on fissures in the ground at a site dating further back to the Jomon period. These were desperate acts of prayer for a still earth.

**The prevention of nuclear disasters is something we cannot entrust to rituals and ceremonies.** An investigative team from the Nuclear Regulation Authority (NRA) compiled a report determining that a fault running below the No. 2 reactor of the Tsuruga Nuclear Power Plant in Fukui Prefecture is active. Plant operator Japan Atomic Power Co. objected to the report, but it appears likely that the reactor will be decommissioned.

The government prohibits the construction of important nuclear power plant structures atop active faults. Furthermore, starting seven years ago, when fault activity cannot be ruled out, it is labeled an "active fault to be considered." In the latest case, an independent expert panel with no ties to past authorities stuck to the safety over all principle.

Japan Atomic Power Co. continues to seek a re-investigation, and there have been reports of local communities that are dependent on the plant for their livelihood finding themselves at a loss. Economic and social strains resulting from decommissioning the reactor are undoubtedly large. However, **we cannot allow the safety myth to persist atop active faults**. ("Yoroku," a front-page column in the Mainichi Shimbun)

May 22, 2013

## Insufficient data?

### Experts: Japan nuke plant needs more fault data

<http://mainichi.jp/english/english/newsselect/news/20130522p2g00m0dm043000c.html>

TOKYO (AP) -- **Experts commissioned by the operator of a Japanese nuclear plant** that faces possible closure because of a suspected active seismic fault say a decision should wait, citing insufficient data.

Tuesday's request came a day before Japan's nuclear watchdog is to rule on the future of the Tsuruga No. 2 reactor in western Japan. The watchdog's own panel said last week that the reactor most likely sits on an active fault and shouldn't restart.

Operator Japan Atomic Power Co. disputes that view. The decision is being closely watched as the pro-nuclear government moves to restart plants suspended since the Fukushima nuclear crisis.

A geologist at New Zealand's GNS Science who led the utility's study, Kelvin Berryman, said neither side has provided enough data to determine whether the fault is still active.

## NRA confirms experts panel report: Tsuruga sits on active fault

## Nuclear regulators acknowledge fault below Tsuruga reactor is active

<http://mainichi.jp/english/english/newsselect/news/20130522p2g00m0dm084000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority on Wednesday accepted an assessment that a reactor at the Tsuruga plant in western Japan is sitting above an active fault, making it increasingly difficult for the facility to resume operation.

"We have received a report from a panel of experts that said there is an active fault...I think there is a need to accept the conclusion sincerely," NRA Chairman Shunichi Tanaka told a meeting attended by other commissioners to discuss the panel's conclusion.

It is the first time Japan's regulatory authorities have acknowledged that an existing reactor is located above a fault feared to move in the future. The judgment may leave plant operator Japan Atomic Power Co. with no option but to scrap the No. 2 reactor.

The NRA also decided to request Japan Atomic Power to study how the spent fuel pool inside the No. 2 reactor building would be affected in the event the fault moves.

Most of Japan's nuclear reactors are currently offline in the wake of the 2011 Fukushima Daiichi complex disaster, and they are required to undergo the NRA's safety assessment process to check whether they satisfy the new regulatory requirements to be introduced in July before they can resume operations.

The NRA, however, is unlikely to go ahead with a safety review for the No. 2 reactor of the two-unit Tsuruga plant given the panel's assessment if Japan Atomic Power submits an application.

The panel, consisting of NRA commissioner Kunihiro Shimazaki and four outside experts, concluded last week that a zone of rock fragments called D-1, running directly beneath the No. 2 reactor, is an active fault, rejecting Japan Atomic Power's objections.

The panel also said the D-1 fault could move together with a confirmed major active fault called Urazoko, which is located about 200-300 meters from the No. 1 and 2 reactor buildings, and may affect facilities located above.

In quake-prone Japan, nuclear power plant operators are not permitted to build reactors and other important safety facilities directly above active faults -- currently defined as those that have moved in the last 120,000 to 130,000 years.

Japan Atomic Power, however, is still conducting its own investigation at the plant to overturn the panel's assessment, while the company's president, Yasuo Hamada, said last week that the company may eventually have to consider taking the issue to court.

Major utilities holding a stake in Japan Atomic Power is closely watching how the issue unfolds, fearing that the company may fall into negative net worth if it has to scrap the No. 2 unit because of shortage of decommissioning funds and loss in asset value.

The company has set aside money for future decommissioning costs on the assumption that the No. 2 reactor will operate for 40 years, but it has been commercially operating for only 26 years.

Restarting Japan Atomic Power's two other reactors is also unlikely to be easy, with the No. 1 unit at the Tsuruga plant known to be aging and a reactor at the Tokai No. 2 plant in Ibaraki Prefecture, eastern Japan, facing local opposition.

Japan Atomic Power is currently surviving on revenues such as basic fees from major utilities that have contracts to receive electricity.

But the utilities may not be able to offer support forever because they are also struggling amid increased fuel costs for thermal power generation to make up for the loss of nuclear power.

### **NRA: Tsuruga nuclear plant built on active fault**

[http://www3.nhk.or.jp/nhkworld/english/news/20130522\\_23.html](http://www3.nhk.or.jp/nhkworld/english/news/20130522_23.html)

Japan's Nuclear Regulation Authority has officially endorsed a report by its expert panel that said a reactor in Fukui Prefecture, central Japan, sits on an active fault.

NRA Chairman Shunichi Tanaka announced the conclusion at a meeting on Wednesday. He said his organization takes seriously the result of the expert panel's probe into the Number 2 reactor at the Tsuruga nuclear power plant, which was released last week.

The government's guidelines ban plant operators from building reactors above active faults due to concerns about damage from earthquakes. The nuclear regulator's conclusion may force Tsuruga plant's operator, Japan Atomic Power Company, to decommission the Number 2 reactor.

The operator says that the NRA's conclusion is unacceptable. The company will carry out its own survey into the fault, and submit the results to the authority by June.

But some participants at the NRA meeting on Wednesday raised concerns that active faults may be overlooked if operators fail to make adequate surveys. They say surveys on faults under other nuclear plants should be reviewed.

May 25, 2013

## Radioactive leak ignored

### **Nuclear physics lab continued experiment even after radioactive leak**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201305250056](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201305250056)

Scientists at a nuclear physics laboratory in Tokai, Ibaraki Prefecture, ignored the ringing of an alarm that radioactive substances were leaking and continued with the experiment that triggered the problem for more than four hours, the Japan Atomic Energy Agency said May 25.

The government and the public were kept in the dark for about 30 hours after the accident occurred. At least four scientists, all male, received internal doses of up to 1.6 millisieverts, about the same level that constitutes the annual background dose for anybody living in Japan.

The leak occurred at the Hadron Experimental Facility on the grounds of the Japan Proton Accelerator Research Complex (J-PARC), which is operated jointly by the JAEA and the High Energy Accelerator Research Organization.

About 20 scientists were in the laboratory at the time. The experiment involved bombarding gold with proton beams to generate elementary particles.

The alarm sounded at 11:55 a.m. on May 23.

Officials said 55 individuals entered the facility and were in close proximity to the experiment equipment on that date. All of them will be screened for internal exposure to radiation.

According to JAEA officials, the equipment halted operations after the beam intensity had risen to 400 times normal levels, likely due to a glitch in the power supply system. But the scientists stopped the alarm and went on with their experiment 13 minutes later.

"Equipment stoppages due to malfunctions are not uncommon," Naohito Saito, a deputy director of the J-PARC Center, told a news conference on May 25.

The accident occurred because the gold, which had been irradiated with the unusually intense proton beams, evaporated. The scientists inhaled sodium and other radioactive substances generated during the process.

Radiation detectors showed enhanced dose rates inside the facility around 12:30 p.m. Readings of radiation monitors, also inside the facility, soared to about 10 times normal levels by around 1:30 p.m. The scientists closed down the experiment at 2:26 p.m.

Radiation levels subsided temporarily after a ventilator was turned on at 3:15 p.m., prompting the scientists to resume the experiment at 3:32 p.m. The ventilation was causing radioactive substances to leak outside.

No filter or other safety tool was installed in the ventilator to remove radioactive substances. That is because nobody had expected that radioactive materials could leak from the facility.

"The facility is designed to generate radiation," Saito explained. "We thought it was probably OK to go on with the experiment as long as the dose rates stayed below the standards stipulated for radiation control zones. We thought the case was less than report-worthy."

Radiation levels inside the facility surged again around 4 p.m., so the scientists stopped the experiment at around 4:15 p.m.

A radioactive contamination reading of 30 becquerels per square centimeter registered on the floor at around 5 p.m., so the facility was designated off-limits.

The ventilator was reactivated around 5:30 p.m. The scientists left the lab between that time and 11 p.m. and were screened for contamination on their skin and clothes. They were all allowed to go home after being told that the readings were below levels that should not be exceeded when radiation workers leave a control zone.

"We ventilated the air out due to concerns about the safety of our scientists," Saito said. "It was thoughtless of us to have released polluted air out of the facility."

Overnight on May 24, the JAEA administered a whole body counter to measure doses of internal exposure to radiation with scientists who asked to be screened. Officials checked out radiation monitor data outside the facility from earlier that evening and learned for the first time that the readings had shot up around the time the ventilators were switched on the previous day.

But it still took the JAEA several more hours to notify the relevant authorities. Officials had apparently convinced themselves that the estimated dose of external exposure to radiation stayed below the facility's control target level. The dose estimate, in fact, exceeded the control target level.

The JAEA only notified the Nuclear Regulation Authority at 9:20 p.m. on May 24 that radioactive substances had leaked outside radiation control zones. The prefectural and village governments were notified at 9:40 p.m.

"We were too indulgent with ourselves," Saito repeated to persistent questions from reporters about the reason the JAEA was so late in notifying the authorities.

The latest accident came on the heels of another scandal concerning lax safety oversight at the JAEA.

On May 15, the Nuclear Regulation Authority decided to order a suspension of operations at Monju, the JAEA's prototype fast-breeder reactor in Tsuruga, Fukui Prefecture, after it learned that the JAEA had skipped inspections of nearly 10,000 pieces of equipment at Monju since 2010. The NRA said the suspension would remain in effect until the agency rectified its safety control system.

## **We won't be able to say we didn't know**

### **Panel: Giant quake at least 90% likely within 50 years**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201305250047](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201305250047)

By ROKU GODA/ Staff Writer

A devastating earthquake of magnitude 8-9 has at least a 90-percent chance of striking the Nankai Trough along Japan's Pacific coastline in the next 50 years, and triggering towering tsunami in densely populated areas.

The finding is in a report released May 24 by the Earthquake Research Committee of the government's Headquarters for Earthquake Research Promotion.

The Nankai Trough is a roughly 4-kilometer depression on the seabed that extends about 700 km from Suruga Bay off Shizuoka Prefecture to areas off eastern Kyushu.

"We think the degree of urgency is very high," said panel chairman Yoshimori Honkura, professor emeritus of solid earth physics at the Tokyo Institute of Technology. "We hope the authorities will steadily promote earthquake and tsunami preparedness measures to prevent and mitigate potential disaster."

The Earthquake Research Committee began releasing earthquake probability forecasts in 2001. Since then, the panel has provided separate probabilistic forecasts for three component seismic source areas along the Nankai Trough, which are called, from east, Tokai, Tonankai and Nankai. But that approach has been amended for the first time in 12 years following the failure of scientists to foresee the magnitude-9.0 Great East Japan Earthquake of 2011, which simultaneously ruptured several different seismic source areas along the Japan Trench east of Japan.

In a major departure from the earlier approach, the latest report provides forecasts in a combined manner across the whole stretch of the Nankai Trough.

The earliest documented seismic event along the Nankai Trough is the Hakuho Earthquake of 684. Devastating earthquakes of magnitude 8 or so have since recurred along the tectonic boundary, where the oceanic plate begins to dive beneath the continental plate.

But some of those historical events broke the Nankai segment alone, whereas others only affected the Tonankai segment. Still others ruptured both, possibly also extending into the Tokai segment to the east. Given this diversity in seismic rupture patterns, the panel decided the old approach of segment-by-segment forecasts did not fully account for the reality of the situation.

The new calculations produced occurrence probabilities of "about 20 percent" within 10 years, "60-70 percent" over the coming three decades, "about 80 percent" over the next four decades and "about 90 percent or more" within 50 years, counting from Jan. 1 of this year.



Other panels, set up under the Cabinet Office, have hypothesized a worst-case scenario of a magnitude-9.1 event along the Nankai Trough to produce their damage estimates. But the Earthquake Research Committee stopped short of publishing probabilities for such a catastrophic event.

"No evidence is currently available that earthquakes of the maximum size occurred during the past several millennia," the May 24 report read. "It is, therefore, difficult to evaluate them quantitatively, but the magnitude-frequency distribution of earthquakes implies that their occurrence frequency is at least one decimal place smaller than that of (other) major earthquakes, which have recurred at intervals of 100-200 years."

An earlier report by the Earthquake Research Committee said a magnitude-8.1 or so Tonankai earthquake could occur at a probability of "70-80 percent," and a magnitude-8.4 or so Nankai earthquake with a likelihood of "about 60 percent," both within 30 years of Jan. 1, 2013. It also said, with a proviso of poorer forecast accuracy, that a magnitude-8 or so Tokai earthquake had an 88-percent chance of hitting during the coming three decades.

May 26, 2013

## **Laxism again – At least thirty researchers exposed to radiation**

### **Local officials inspect nuclear physics lab that exposed 30 to radiation**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201305260049>

Officials from local municipalities and the Ibaraki prefectural government inspected a nuclear physics laboratory in Ibaraki Prefecture on May 25 where thirty scientists are confirmed to have inhaled radioactive materials as a result of a May 23 accident that was not reported to the public for more than 30 hours.

The representatives of the Ibaraki prefectural government and seven surrounding municipalities inspected the Japan Proton Accelerator Research Complex (J-PARC) in the village of Tokai in the afternoon on May 25. In the on-site inspection, an official with the Japan Atomic Energy Agency (JAEA), operator of the facility, said that the leakage of radioactive materials was an unanticipated accident.

As for the delay in reporting the accident to local governments, an official of the prefectural government asked, "Was it not possible to report it to us more quickly?"

Satoru Kondo, director of JAXA's Nuclear Science Research Institute, apologized for the delay.

"We are very sorry," he said. "The accident occurred as an unexpected malfunction of a machine."

The inspection confirmed the location of the device that was involved in the accident, and those of scientists who had been exposed to radiation from inhaling radioactive materials in their bodies. JAXA confirmed the initial number of four scientists having been exposed had risen to thirty as of May 26.

**Kondo also admitted that the facility has not taken safety measures, such as installing filters on ventilators, to prevent radioactive materials from leaking outside.**

Taichi Miura, head of the safety division at J-PARC, said, "As for the fact that we released (radioactive materials out of the facility), **our way of thinking about and dealing with the possibility was too lax.**"

In the accident that occurred at around 11:55 a.m. on May 23 in the Hadron Experimental Facility, gold, which was being bombarded by proton beams to generate elementary particles, evaporated as the intensity of the beams rose to 400 times normal levels, possibly as the result of a glitch in the power supply system. As a result of the evaporation, radioactive materials were released.

At the time of the accident, 55 people were near the device that caused it. The JAEA completed health checks on 49 of them by the evening of May 26. Using whole body counters, it checked whether they were exposed to radiation by inhaling the radioactive materials.

As a result, 26 more scientists--22 men and 2 women--were found to have suffered internal exposure. Earlier, the other four scientists, all male, were reported to have received internal doses of up to 1.6 millisieverts, about equal to the level of the annual background dose of people living in Japan.

Keiji Miyazaki, professor emeritus of nuclear reactor engineering at Osaka University, said, "Evaporation of materials that are being hit by beams could also take place in accelerators in other parts of Japan. Verification should be conducted to see whether J-PARC was complying with safety regulations."

**Accelerators, like the one in J-PARC, are in operation in various parts of Japan. However, safety standards on them are looser than those on nuclear reactors.**

Accelerators increase the speed of particles, such as electrons and protons, to near the speed of light and, as a result, produce intense beams. These beams are then used to strike and collide with other substances.

According to the Particle Accelerator Society of Japan, accelerators were operated in 38 facilities in Japan as of the end of 2012. They are used for a growing number of purposes, such as for studies on elemental particles, development of new materials or medicines and studies on cancer treatments.

J-PARC was jointly set up by JAXA and the High Energy Accelerator Research Organization (KEK) in 2008. JAXA is in charge of experiments for industry use, such as structural analysis of proteins and development of batteries. KEK mainly conducts studies on basic science, such as experiments on elemental particles.

J-PARC has several accelerators. Of these, the largest has a circular shape, with a diameter of about 1.6 kilometers.

One of the experiments being conducted with the accelerator is to send a particle, called a neutrino, to Super-Kamiokande, a neutrino observatory constructed in the remains of the Kamioka zinc mine in Gifu Prefecture, which is 295 kilometers from J-PARC. The Tokai to Kamioka (T2K) experiment is being implemented to see the nature of a neutrino.

The May 23 accident occurred in an experiment that was being conducted under the initiative of the KEK.

Measures to secure the safety of accelerators are stipulated under the radiation hazard prevention law. Even in conventional operations of accelerators, cooling water around the devices changes to radioactive materials if beams hit the water. Therefore, scientists are obliged to measure radiation levels and check waste disposal.

Compared with nuclear reactors, however, accelerators use less amounts of radioactive materials. Therefore, areas where radiation levels must be controlled are not widespread.

As accelerators can be halted immediately, they are regarded as equipment whose level of danger is generally low, said a science ministry official. Because of that, the accelerators are not subject to safety checks or guidelines that are applied to nuclear reactors under the law on the regulation of nuclear reactors and other equipment.

Usually, decisions on what accident prevention measures are needed are left to accelerator operators, except for measuring radiation levels and holding regular briefings for those dealing with radiation.

### **Alarm disregarded, radiation level unchecked**

[http://www3.nhk.or.jp/nhkworld/english/news/20130526\\_08.html](http://www3.nhk.or.jp/nhkworld/english/news/20130526_08.html)

According to a follow-up report on a radiation exposure accident last week, researchers at the Japanese laboratory went on with their work even after an alarm went off to report an equipment malfunction.

The accident occurred at a Japan Atomic Energy Agency facility in Ibaraki Prefecture at around noon on Thursday. The workers were bombarding gold with proton beams to generate elementary particles.

When the alarm went off, the equipment automatically stopped. But the scientists reset the alarm and resumed the experiment without looking into the cause.

The radiation level within the facility rose after about 90 minutes. The researchers temporarily stopped the experiment and turned on exhaust fans.

When the radiation level dropped, the work resumed.

The researchers finally stopped the experiment after 4:00 PM when the level rose further.

The equipment malfunction created an unexpected amount of radioactive substances. At least 6 researchers were exposed and the exhaust fans blew some of the radioactive substances into the outside environment.

The agency did not measure the radiation levels around the facility at that time.

It wasn't until evening of the following day that workers noticed the level at a monitoring post in a nearby facility had risen at the time the fans were used.

Agency officials admit the series of actions were inappropriate.

Out of 55 people who were in and out of the lab facility at the time of the accident, 6 male researchers were confirmed to have been exposed to radiation. 14 were not exposed.

Officials are quickly checking the remaining 35.

May 27, 2013

## **Nuclear exposure toll hits 30 in J-PARC lab accident**

Kyodo

<http://www.japantimes.co.jp/news/2013/05/27/national/nuclear-exposure-toll-hits-30-in-j-parc-lab-accident/#.UajbnNhBpg4>

An additional 24 researchers were exposed to an exotic soup of radioactive isotopes at the Hadron Experimental Facility in Tokai, Ibaraki Prefecture, last week, raising the tally to 30, the state-run Japan Atomic Energy Agency said late Sunday.

According to medical tests run on the 55 people involved in the troubled experiment Thursday at JAEA's Japan Proton Accelerator Research Complex (J-PARC), at least 19 escaped exposure, the agency said. Six others are waiting to be examined.

The radioactive substances reportedly included sodium, iodine and more exotic elements.

The highest dose delivered was 1.7 millisieverts. Japan's annual limit for nuclear workers is 50 millisieverts.

The accident occurred around noon Thursday, but the JAEA didn't report it to the nuclear regulatory authorities until Friday night.

The JAEA said Saturday it initially thought the leak was minor and had been confined to the laboratory when the alarm went off. Workers then switched on the ventilation system, sending the radioactive contaminants outside the building.

The experiment conducted by the High Energy Accelerator Research Organization was intended to generate elementary particles by zapping a gold-covered object with a proton beam. Officials at the group said they suspect one of the electromagnets used to control the protons malfunctioned, allowing an excessively strong beam to melt the gold and release the exotic particles.

## **Ibaraki's accident "Level 1"**

## **Nuclear regulator: Radiation leak at INES Level 1**

[http://www3.nhk.or.jp/nhkworld/english/news/20130527\\_26.html](http://www3.nhk.or.jp/nhkworld/english/news/20130527_26.html)

Japan's Nuclear Regulation Authority has tentatively given a recent radiation leak at a research laboratory a Level 1 rating. The International Nuclear and Radiological Event Scale for accidents ranges from zero to 7.

The NRA announced the rating on Monday. It said the operator of the facility lacked a safety culture.

The leak occurred last Thursday at a laboratory of the Japan Atomic Energy Agency in Ibaraki Prefecture, north of Tokyo. At least 30 people were exposed to radiation.

The NRA said the accident caused a limited rise in radiation levels to areas outside of the facility. The authority said the released radiation would have no impact on the public.

But the NRA also said the staff operated ventilation fans that emitted radioactive substances to the outside environment. This was done after contamination was confirmed inside. The NRA concluded the operator does not have an adequate management system for radioactive substances.

The Level 1 rating on the INES scale was the same level as a sodium leak in 1995 at the prototype fast-breeder reactor Monju in Fukui Prefecture.

## **Radiation leak at Ibaraki lab labeled as Level 1 accident**

<http://mainichi.jp/english/english/newsselect/news/20130527p2g00m0dm078000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority on Monday provisionally evaluated the severity of the recent leakage of radioactive substances at a Japan Atomic Energy Agency laboratory northeast of Tokyo as Level 1, third from the bottom of a 9-scale international gauge.

The Japanese nuclear watchdog cited "the lack of safety culture" in the state-run JAEA for the rating as the lab in Tokaimura, Ibaraki Prefecture, released radioactive substances into the atmosphere outside its controlled area through use of a ventilation fan even though it was aware of radioactive contamination within the facility.

The accident occurred around noon last Thursday in the Japan Proton Accelerator Research Complex, one of the JAEA's nuclear physics laboratories, causing at least 30 people out of 55 at the facility to be exposed to radiation.

So far, no abnormalities have been confirmed by seven monitoring posts of radiation dose levels in Tokaimura, according to prefectural officials.

Ibaraki Gov. Masaru Hashimoto criticized the JAEA for reporting the leakage more than one day after the accident, saying at a press conference, "It must be taking the matter lightly."

The radioactive exposure of researchers and other staff members was "very regrettable," he said.

Other Level 1 accidents in Japan include a 1995 sodium leak at the prototype fast-breeder nuclear reactor Monju and a 2004 pipe rupture accident at Kansai Electric Power Co.'s Mihama plant Unit 3, both in Fukui Prefecture.

## Even research labs should make safety a priority

### **Editorial: Strict safety management crucial at nuclear research facilities**

<http://mainichi.jp/english/english/perspectives/news/20130527p2a00m0na001000c.html>

On the heels of revelations of neglected testing at the prototype fast-breeder nuclear reactor Monju, insufficient safety management at another Japan Atomic Energy Agency (JAEA) facility has come to light.

JAEA has no rebuttal against those who argue that the organization is not qualified to handle nuclear power. The agency must make fundamental organizational reforms, rebuild and raise safety awareness. The Ministry of Education, Culture, Sports, Science and Technology also bears a heavy responsibility as the organization's governing agency.

On May 23, a malfunction occurred at the Japan Proton Accelerator Research Complex (J-PARC), jointly operated by JAEA and the High Energy Accelerator Research Organization (KEK). During an experiment in which proton beams were aimed at a gold target, the gold overheated and vaporized, causing radioactive materials to be released. While the mishap is said to have posed no public health risk, numerous researchers at the facility were exposed to radiation, and some radioactive materials leaked outside the facility.

The national government and local municipalities should have been alerted to the situation right away. J-PARC, however, initially underestimated the extent of radiation contamination as being limited to a controlled area within expected radiation levels. It therefore delayed a report to the Nuclear Regulation Authority (NRA) until the night of May 24, a day and a half after the incident occurred.

Those overseeing the experiment claim the latest glitch was unforeseen, but if the ongoing crisis at the Fukushima No. 1 Nuclear Power Plant has taught us anything, it's the importance of preparing for the unexpected. The handling of the situation by JAEA and KEK, two of the country's key research organizations, has been unacceptable.

Even after the initial malfunction, researchers at J-PARC continued with the experiments, repeatedly rebooting the proton irradiation equipment and turning on a ventilator to reduce radiation levels within

the facility. The ventilator was not fitted with a filter, allowing radioactive materials to be released into the atmosphere. Such stopgap measures are evidence that safety has not been made a top priority.

JAEA is an independent administration institution established in 2005 through a merger of the Japan Atomic Energy Research Institute (JAERI) and the Japan Nuclear Cycle Development Institute (JNC), which specialized in basic research and practical application, respectively. Former JNC projects have been rife with scandals, including a sodium leak at the Monju Nuclear Power Plant and a subsequent cover-up, together with the Tokai Reprocessing Plant accident and its falsified reports. The latest incident took place in the basic research division, however. Did the researchers from the former JAERI assume that they were somehow different from the former JNC contingent?

JAEA President Atsuyuki Suzuki recently resigned after the NRA pointed to a "deterioration of safety culture" at JAEA following its failure to conduct appropriate inspections of Monju, leaving the organization's top post empty. Each and every staff member at JAEA, regardless of the organization they come from, must claim the incidents as their responsibility and make efforts to prevent them from happening again.

Many research facilities in addition to J-PARC handle particle accelerators and radioactive substances. Have sufficient measures been taken against the risks they carry? We urge the organizations and governing agencies to review their preparedness once again.

May 28, 2013

## **NRA's three teams of 20 officials**

### **Nuclear regulator's new review process**

[http://www3.nhk.or.jp/nhkworld/english/news/20130528\\_13.html](http://www3.nhk.or.jp/nhkworld/english/news/20130528_13.html)

The Nuclear Regulation Authority will conduct new reviews to see whether each of Japan's nuclear power plants is meeting revised safety regulations.

The secretariat of the Nuclear Regulation Authority is to conduct the assessments. It will create 3 teams to examine the applications submitted by individual plant operators to restart nuclear reactors.

The secretariat says each team will consist of 20 officials, including experts in nuclear plant facilities, and earthquake and tsunami disaster management.



The secretariat says the reviews may take 6 months to a year. But the total time is not certain because the process will cover elements that have never been assessed before.

Professor Yoshihiro Nishiwaki of the Tokyo Institute of Technology said the new regulations include criteria covering serious accidents. He expressed concern over whether the examiners have adequate expertise in that area.

In addition to the review by the regulator, plant operators have to obtain consent from host municipalities before restarting their reactors. They also need to come up with evacuation and other emergency preparedness plans for residents in surrounding areas.

May 29, 2013

## **Fault under Monju must be inspected**

### **Regulators to inspect fault under Monju reactor**

[http://www3.nhk.or.jp/nhkworld/english/news/20130529\\_25.html](http://www3.nhk.or.jp/nhkworld/english/news/20130529_25.html)

Japan's nuclear regulators will examine the fault beneath the Monju fast-breeder reactor complex on the Sea of Japan coast to determine whether it is active.

The Nuclear Regulation Authority is also surveying the faults at 5 other nuclear plants across the country.

The Japan Atomic Energy Agency is the operator of the Monju reactor in the city of Tsuruga in Fukui Prefecture.

On June 13th, the agency will brief regulator Kunihiro Shimazaki and 4 experts on the results of its own survey of the fault. The regulators will then examine the fault.

The agency submitted a report to nuclear regulators last month claiming the fault is not active.

Experts have said if an active fault about 500 meters west of the Monju reactor moves in some way, it could shift the fault directly beneath the complex.

May 29, 2013

## Tsuruga's spent fuel pool (no.2 reactor) has to be checked whatever happens

### **NRA: Tsuruga plant spent fuel pool needs checking**

[http://www3.nhk.or.jp/nhkworld/english/news/20130529\\_23.html](http://www3.nhk.or.jp/nhkworld/english/news/20130529_23.html)

Japan's Nuclear Regulation Authority has ordered the operator of a nuclear power plant in central Japan to check the safety of a spent fuel pool of one of its reactors.

The authority determined last Wednesday that the No.2 reactor at the Tsuruga nuclear plant in Fukui Prefecture sits on an active seismic fault.

The safety of the reactor's pool is now in question, as it contains more than 1,700 units of spent fuel rods.

The authority on Wednesday decided to order the plant's operator, Japan Atomic Power Company, to investigate what would happen to the spent fuel if the pool were to lose water, and what impact the incident would have on the environment.

The authority will also tell the plant's owner to report by July the results of the study, which must **include countermeasures in the case of water being lost from the pool.**

The Tsuruga No.2 reactor is now highly likely to be decommissioned, because of the government's ban on building nuclear reactors on or above active faults.

**The owner of the Tsuruga reactor is trying to avoid the decommissioning. It plans to submit the result of its own study on the alleged active fault to the authority sometime after June.**

## 8,000 accelerator facilities with their own regulations

### **Nuclear regulators to review radiation controlled areas at major accelerator facilities**

<http://mainichi.jp/english/english/newsselect/news/20130530p2a00m0na012000c.html>

The Nuclear Regulation Authority (NRA) said on May 29 that it will check and review radiation controlled areas at major accelerator facilities similar to one of the Japan Atomic Energy Agency (JAEA)'s nuclear physics laboratories in Ibaraki Prefecture which released radioactive substances into the atmosphere last week.

The NRA also said it will look into the process in which the operators of such facilities have obtained approval for designating radiation controlled areas at their facilities. The NRA made the decision because the operator of the Japan Proton Accelerator Research Complex (J-PARC), one of the JAEA's nuclear physics laboratories, which accidentally released radioactive substances into the atmosphere last week, used a method of controlling radiation which did not take into account the possibility of radioactive contamination inside the accelerator building. The NRA plans to check the safety of dozens of large-scale accelerator facilities across the country and give instructions to review the way in which they set up radiation controlled areas if flaws are found. **There are about 8,000 accelerator facilities throughout the country.**

The Laws Concerning the Prevention from Radiation Hazards due to Radioisotopes and Others allow the operators of such facilities to set up two different radiation controlled areas -- a Class-1 controlled area and a Class-2 controlled area. The strict Class-1 controlled area is set up where there is a possibility of radioactive contamination and internal exposure to radiation. The Class-2 controlled area can be set up where there is no possibility of radioactive contamination.

At the "Hadron experimental facility," which released radioactive substances into the atmosphere last week, a Class-1 controlled area was set up only around the experimental apparatus, and dozens of people, including researchers, were exposed internally to leaked radiation in a Class-2 controlled area. **It was a lax safety control area in which no filter for radioactive substances was attached to a ventilation fan, causing radioactive substances to escape into the outside atmosphere.** According to J-PARC officials, people wore special long-sleeved clothes in the Class-1 controlled area and checked to see whether radioactive substances were adhered to them when leaving the area. But in the Class-2 controlled area, people wore ordinary work clothes and moved in and out of the area without checking on radiation.

Meanwhile, the National Institute of Advanced Industrial Science and Technology (AIST) in Ibaraki Prefecture and the National Institute of Radiological Sciences (NIRS) in Chiba Prefecture do not divide their facilities into two different radiation controlled areas. They, instead, put their facilities under a single controlled area where they assume radioactive contamination could occur anywhere in the area. The AIST says a filter is attached to a ventilation fan and there are in-house regulations on decontamination procedures.

The operators of such facilities decide which category of controlled area should be set up on their own and all they need to do is effectively report their decisions to the government. They can also decide on guidelines for setting up such controlled areas. Thus, **their regulations are looser than the Nuclear Reactor Regulation Law that controls over nuclear reactors.**

May 30, 2013

## KEPCO's study on Mihama fault postponed again

### KEPCO to put off final report on fault study

[http://www3.nhk.or.jp/nhkworld/english/news/20130530\\_18.html](http://www3.nhk.or.jp/nhkworld/english/news/20130530_18.html)

Kansai Electric Power Company, or KEPCO, says it will again postpone releasing its assessment of a seismic fault that runs below the **Mihama nuclear power plant in Fukui Prefecture**.

KEPCO, which operates the plant, has been conducting a geological survey on the fault since September.

The utility says **it will put off its final report until the end of July**, saying it has not been able to gather all the necessary data. KEPCO originally said it would release the report in March before postponing it until the end of May.

The company says it will inform the Nuclear Regulation Authority of its new plan on Thursday.

Analysts say faults below the Mihama nuclear power plant could shift in response to movement by an active fault located one kilometer to the east.

The Mihama plant is one of six sites at which the Nuclear Regulation Authority plans to conduct its own examination. The facility has three reactors, all of which are currently offline.

KEPCO's postponement of the assessment has resulted in a delay of the authority's investigation.

June 3, 2013

## Monju reactor - A glitch?

### Monju's data transmitting system fails

[http://www3.nhk.or.jp/nhkworld/english/news/20130603\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20130603_20.html)

A technical glitch prevented data from the Monju fast-breeder nuclear reactor in Fukui, central Japan, from being sent to the government's monitoring system **for more than 4 hours** on Monday.

Technicians became aware of the problem early in the morning when an alarm sounded indicating that

real-time data including the reactor's condition and radiation levels in the surrounding area were not being transmitted.

The plant operator, the Japan Atomic Energy Agency, found the device's computer server was turned off.

It says workers switched the server back on, and that the device restarted transmitting data about 4 and a half hours after it shut down.

The agency says during this period, there were no problems and that it instead sent data to the Nuclear Regulation Authority's Secretariat using fax and e-mail.

The secretariat says **part of the facility that houses the server lost its power supply**. It is investigating the cause of the power loss.

The Japan Atomic Energy Agency's former president resigned after it was found that workers failed to inspect about 10,000 pieces of equipment.

Last week, the Nuclear Regulation Authority ordered the agency to suspend preparations to restart Monju until it could confirm that safety procedures have been improved.

June 5, 2013

## No active fault under Shika, says operator

### Shika plant operator finds no sign of active fault

[http://www3.nhk.or.jp/nhkworld/english/news/20130605\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20130605_28.html)

The operator of the Shika nuclear power plant on the Sea of Japan coast says there's no data to suggest that a fault under the plant is active.

Hokuriku Electric Power Company will submit its findings to the Nuclear Regulation Authority on Thursday.

The government bans the construction of nuclear reactors above active faults.

A government agency last year ordered the company to conduct a geological survey. Some experts said there was a chance that a fault under the No.1 reactor of the plant in Ishikawa Prefecture was active.

The company says it dug a tunnel 40 meters underground near the reactor building to obtain sediment

samples.

It says it found substances indicating that the fault was formed by underground water seeping into cracks. There were no signs that the soil above the fault had slid vertically.

Utility officials say the results show no evidence that the fault is active.

The NRA plans to conduct fault surveys at 6 nuclear plants in Japan.

They concluded last month that a fault under the No.2 reactor of the Tsuruga nuclear plant in neighboring Fukui Prefecture is active.

They have yet to announce a timetable for official probes at the Shika plant and the Mihama plant in Fukui Prefecture.

June 9, 2013

## **NRA to inspect Oi reactors**

### **Regulators to inspect Japan's sole operating reactors on June 15**

<http://mainichi.jp/english/english/newsselect/news/20130609p2a00m0na008000c.html>

TSURUGA (Kyodo) -- The Nuclear Regulation Authority will conduct an on-site inspection June 15 of the only nuclear reactors now operating in Japan to check whether they are safe enough to be allowed to continue operating beyond July when new safety requirements take effect, sources close to the matter said Saturday.

About 20 inspectors, including NRA Commissioner Toyoshi Fuketa, will examine equipment such as an air-cooled power generator for emergency use and water pump newly installed at the No. 3 and 4 reactors at the Oi nuclear plant in Fukui Prefecture to respond to a severe accident.

The new requirements have been compiled to enhance nuclear regulation in the wake of the devastating accident at Tokyo Electric Power Co.'s Fukushima Daiichi nuclear power plant in 2011, triggered by a massive earthquake and tsunami in March that year.

The NRA has asked the operator of the Oi nuclear plant, Kansai Electric Power Co., to take safety measures by assuming several severe accident scenarios, such reactor core meltdowns and damage to reactor containers.

Kansai Electric has told the NRA that it plans to use a 108-square-meter meeting room next to the No. 3 and 4 reactor control room as an emergency command center if needed to deal with serious accidents. Fuketa said he plans to check whether the meeting room has enough space to function as a command center in contingencies.

The nuclear safety body will also look into whether any active fault runs under the Oi plant on the Sea of Japan coast.

Following the on-site inspection, the NRA will decide later this month whether the Oi plant meets the new safety requirements.

If the authority acknowledges that the two reactors have no serious safety problems, they will be allowed to continue operating through September, when they will have to undergo mandatory routine checkups.

Operators of reactors now shutdown will have to wait for the requirements to come into force before applying to restart.

June 10, 2013

## **NRA approves Ohi safety assessment**

### **Nuclear regulators back Ohi plant safety report**

[http://www3.nhk.or.jp/nhkworld/english/news/20130611\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20130611_02.html)

Japan's nuclear regulators have said they have mostly approved a new safety assessment from the operator of Ohi, the country's only running nuclear plant.

Nuclear Regulation Authority officials on Monday received the findings from Kansai Electric Power Company.

Kansai Electric engineers analyzed three active faults near the plant's premises in Fukui Prefecture and off the coast in the Sea of Japan.

They were told to examine possible effects of an earthquake if the 3 faults moved simultaneously.

The engineers found in such a case the reactor buildings would shake to an intensity of 760 gals.

Regulators found this figure -- essentially a benchmark of quake resistance -- to be acceptable.

Kansai Electric officials originally refused to consider the possibility of the three faults moving simultaneously. But they agreed to carry out the analysis to prepare for stricter guidelines to be introduced in July.

The regulators also approved most of the utility's tsunami calculations. The engineers calculated a triple-fault quake would cause a tsunami of up to 3.68 meters.

The Ohi plant is 9.7 meters above sea level.

Regulation Authority experts will inspect the plant on Saturday to check how disasters could affect its facilities. They'll also check its precautions for nuclear accidents.

The regulators plan to decide this month whether Kansai Electric may continue to operate the Ohi plant.

June 12, 2013

## **NRA approves plan for meeting room at Oi plant**

### **Regulators approve meeting room as temporary emergency command center at Oi plant**

<http://mainichi.jp/english/english/newsselect/news/20130612p2a00m0na011000c.html>

The Nuclear Regulation Authority (NRA) has approved of a plan to use a meeting room as a temporary emergency command center in the event of severe accidents at the No. 3 and 4 reactors at the Oi nuclear plant in Fukui Prefecture -- the only nuclear reactors currently in operation in Japan -- on condition that the other two reactors at the complex remain offline.

The NRA made the decision at a meeting held on June 11 to check whether the No. 3 and 4 reactors at the Oi Nuclear Power Plant in Oi, Fukui Prefecture, can meet new safety requirements due to take effect in early July. The NRA endorsed Kansai Electric Power Co.'s proposal to use a "meeting room" on the premises of the nuclear complex as a temporary "emergency command center" if necessary to deal with serious accidents on condition that the Nos. 1 and 2 reactors remain shut down. Thus, almost all conditions have been set for continued operations at the Nos. 3 and 4 reactors until September this year when they go through regular inspections, but it is possible that the Nos. 1 and 2 reactors will remain offline for an extended period of time.

The decision to shut down the Nos. 1 and 2 reactors was based on the assumption that chain reaction accidents similar to those that occurred at the Fukushima No. 1 Nuclear Power Plant could take place at the Oi nuclear power station. At the June 11 meeting, NRA Commissioner Toyoshi Fuketa said, "If the shutdown of the Nos. 1 and 2 reactors is a prerequisite, not all reactors (Nos. 1 to 4 reactors) will go down. That can be dealt with even by using the meeting room as a temporary command center." After the meeting, Fuketa clearly stated, "As long as it remains to be a makeshift facility, the Nos. 1 and 2 reactors will never be reactivated."

In a bid to keep the Nos. 3 and 4 reactors operating, Kansai Electric had earlier proposed to use a meeting room (108 square meters) next to the central control room for the Nos. 3 and 4 reactors as a temporary emergency control center. But the NRA said the meeting room was so small and so close to the reactors that it could be contaminated with radioactive substances. Therefore, Kansai Electric presented a new proposal to use a similar meeting room (105 square meters) next to the Nos. 1 and 2 reactors as a temporary command center to deal with serious accidents, in parallel with the other one next to the Nos. 3 and 4 reactors.

Kansai Electric plans to build and start using a fully fledged earthquake-proof emergency command center in the first half of 2015. Therefore, it will likely be difficult to resume operations at the Nos. 1 and 2 reactors until then.



The NRA will conduct an on-site inspection of the Nos. 3 and 4 reactors on June 15 before making a final decision on whether to give the green light for continued operations of the reactors as early as the end of June.

## **NRA & the 40-year limit**

### **Special inspections to be required for extending reactor use beyond 40-year limit**

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201306120051](http://ajw.asahi.com/article/behind_news/politics/AJ201306120051)

By JIN NISHIKAWA/ Staff Writer

The Nuclear Regulation Authority will require special inspections to determine if reactors can be operated beyond the 40-year limit to be implemented from July.

The inspections will be intended to ensure that the old reactors are still in operable condition before electric power companies are allowed to extend operations beyond the legal limit.

Under the revised reactor regulation law that takes effect from July, reactors can only be operated for 40 years, in principle. New safety standards for nuclear plants will also take effect from July.

However, if electric power companies want to extend operations, they will be allowed a one-time extension of, at most, 20 years.

At a June 12 NRA meeting, approval was given for regulations that establish the new conditions for allowing an extension of operations.

The conditions agreed to were that the reactors meet the most advanced regulations related to measures to deal with earthquakes, tsunami and severe accidents; and that the electric power companies report on the findings of the special inspections they carry out.

NRA officials would then confirm if those two conditions had been met before giving approval for an extension of operations.

Of the 50 reactors in Japan, three have been in operation for 40 years or more--the No. 1 reactor at the Tsuruga plant as well as the No. 1 and No. 2 reactors at the Mihama plant. Both plants are in Fukui Prefecture.

Those three, along with four others that will have been in operation for at least 37 years in July, will be given a three-year grace period for special inspections to determine if an extension can be allowed.

The four other reactors are the No. 1 and No. 2 reactors at the Takahama plant in Fukui Prefecture, the No. 1 reactor at the Shimane plant and the No. 1 reactor at the Genkai plant in Saga Prefecture.

June 15, 2013

## **NRA inspecting Oi today**

### **Nuclear regulators inspect Ohi power plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20130615\\_12.html](http://www3.nhk.or.jp/nhkworld/english/news/20130615_12.html)

Japan's nuclear regulators are inspecting the Ohi power plant on the Sea of Japan coast for whether it meets safety requirements that will take effect in July.

The complex has the only 2 currently operating nuclear reactors in the country.

On Saturday, 23 officials from the Nuclear Regulation Authority are carrying out an on-site inspection at the plant operated by Kansai Electric Power Company.

**The officials will make a final decision later this month on whether to allow the 2 reactors to remain online beyond July.**

Earlier this month, they approved the company's plan to use meeting rooms for offline reactors as accident response centers until a new facility is complete.

The nuclear regulator also supported Kansai Electric's assessment on the intensity of a possible earthquake.

Apart from the safety standards, the authority says it will continue to examine active faults underneath the plant's compound.

## **NRA conducts on-site inspection at Oi nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20130615p2g00m0dm035000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority conducted an on-site inspection Saturday at Kansai Electric Power Co.'s Oi nuclear plant to assess whether its two reactors can meet new safety requirements coming into force in July.

A team of inspectors, including NRA Commissioner Toyoshi Fuketa, examined the Nos. 3 and 4 reactors, the nation's sole operating reactors, in Fukui Prefecture on the Sea of Japan coast.

The NRA set up an investigative panel after the outline of the new safety standards was compiled in April to examine whether Kansai Electric sufficiently prepares for emergencies, such as earthquake and tsunami.

While the panel will report the outcome of its assessment to the NRA later this month, the authority will allow the two reactors to remain online through September -- when they have to undergo mandatory routine checkups -- if it does not see any serious safety problems.

All of Japan's nuclear reactors were temporarily offline in the wake of the nuclear crisis at the Fukushima Daiichi complex in March 2011, but the two reactors at the Oi plant were reactivated in July last year because they cleared provisional safety standards created by the government at that time.

The two, however, have to be checked to determine whether they can meet the new safety requirements to continue operating until their routine checkup period.

As for other reactors, utilities are expected to apply for their restart after the new requirements take effect in July.

June 17, 2013

## **Experts to assess safety of waste disposal**

### **Govt. to set up panel on Fukushima waste storage**

[http://www3.nhk.or.jp/nhkworld/english/news/20130617\\_13.html](http://www3.nhk.or.jp/nhkworld/english/news/20130617_13.html)

The Environment Ministry says it will set up expert panels to assess the safety of sites where contaminated waste may be stored in Fukushima Prefecture.

The government is trying to secure disposal sites for soil and debris with high concentrations of radioactive substances as decontamination work proceeds in Fukushima.

The move is in response to local opposition to hosting the sites in addition to the crippled Fukushima Daiichi nuclear plant.

The Ministry plans to construct intermediate storage sites in the towns of Futaba, Okuma and Naraha close to the nuclear plant. Radioactive waste will be kept there until final disposal sites are built.

Some residents are up in arms over the plan as the waste contains materials with high levels of radiation exceeding 100,000 becquerels or more.

One of panels will be made up of radiologists and geologists to check the stability of the ground where the sites would be built. They will also give advice on the structure of the storage facilities as well as safety measures.

The Ministry will also set up another panel to oversee conservation of the environment around the facilities.

The panels will hold their first meetings on June 28th. The ministry says it hopes to gain the understanding of local residents through discussions in these panels.

June 18, 2013

## **Nuclear plants face safety hurdles**

[http://www3.nhk.or.jp/nhkworld/english/news/20130618\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20130618_34.html)

Power companies preparing to apply to restart 6 nuclear plants will first need to clear several safety hurdles under new regulation standards due to come into force next month.

Only one of the 6 plants has a building that is structurally resistant to quakes, tsunami and radiation and is capable of serving as an emergency command center as required under the new guidelines for nuclear reactors.

The operators of 5 other plants plan to complete such buildings in about 2 years, and to use alternative facilities in the meantime.

A nuclear power plant in Sendai in Kagoshima Prefecture says it will use a 100-square-meter room near

the central control room as a command center.

But nuclear regulators turned down a similar plan submitted by Kansai Electric Power Company for the Ohi plant in Fukui.

They later approved a revised plan to use a control room and adjacent conference room with total floor space of 900 square meters.

The operators of the plants, except for the one at Ohi, have yet to come up with measures to deal with a maximum probable tsunami.

Kansai Electric initially assumed a 2.85-meter tsunami for the Ohi plant, but revised it to 3.68 meters after nuclear regulators rejected the first estimate as too conservative.

None of the 6 plants has completed the breakwater required under the new guidelines.

It remains to be seen how the power companies can assure operational safety with such shortcomings.

## **New safety guidelines for nuclear plants**

[http://www3.nhk.or.jp/nhkworld/english/news/20130618\\_35.html](http://www3.nhk.or.jp/nhkworld/english/news/20130618_35.html)

New safety guidelines for nuclear power plants oblige power companies to take measures to prepare for emergencies and disasters. Until now, the operators implemented such measures on a voluntary basis.

The guidelines require each power company to anticipate worst-case scenarios and set up an emergency command center that would deal with a nuclear crisis. The building housing such a center is required to be able to withstand earthquakes, tsunamis and radiation.

The guidelines stipulate requirements for plants with boiling-water type reactors similar to those at the stricken Fukushima Daiichi power plant. They must have "filter vents" that can release pressure in containment vessels while limiting emission of radioactive substances.

The guidelines also call for strengthening existing safety measures, and require operators to replace power cables with non-flammable types.

Plant operators also need to install equipment to cool nuclear fuel from outside the reactors in case of aircraft attacks on reactors. A facility housing a back-up central control room must be set up 100 meters from reactors within 5 years.

As before, the guidelines say faults that moved in the last 120,000 to 130,000 years are judged to be active faults. But if it is impossible to make clear assessments, the guidelines say judgment should be based on whether faults moved in the last 400,000 years.

Power firms are asked to anticipate the largest possible tsunami, and set up breakwaters and take other measures to prevent water from entering buildings.

The guidelines also call on power companies to evaluate possible damage from volcanic eruptions and tornados.

The Nuclear Regulation Authority says it is aiming to ensure that Japan has the highest safety standards in the world.

### **Gov't eyes implementation of new nuclear regulations from July 8**

<http://mainichi.jp/english/english/newsselect/news/20130618p2g00m0dm072000c.html>

TOKYO (Kyodo) -- The government is making arrangements to introduce a set of new nuclear regulations from July 8, sources close to the matter said Tuesday, in a move to overhaul safety requirements for commercial reactors following the 2011 Fukushima Daiichi complex disaster.

The Nuclear Regulation Authority is expected to officially decide on the implementation date at a regular meeting of NRA commissioners Wednesday.

The new requirements, which reactors need to clear to resume operations, will for the first time oblige utilities to put in place specific countermeasures against possible severe accidents like reactor core meltdowns, as well as against huge tsunami waves -- the direct cause of the Fukushima crisis.

The operation of the reactors will also be limited to 40 years in principle, although an exceptional extension of no more than 20 years is allowed if safety is confirmed.

The NRA has been devising the new regulations following its launch in September last year.

The legal deadline for enacting the new safety criteria is July 18, but calls have been growing from the power industry for earlier implementation so that utilities can start applying for the NRA's safety assessment as a step toward restarting their idled reactors.

Of the 50 commercial reactors in Japan, only two in western Japan are currently online. The two will also be shut down in September at the latest for mandatory routine checkups.

June 19, 2013

### **Three days...**

#### **Unfiltered fan ran for three days after radiation leak**

JJI

<http://www.japantimes.co.jp/news/2013/06/19/national/unfiltered-fan-ran-for-three-days-after-radiation-leak/#.UcCNI9hBpg4>

A ventilation fan with no filters was used for three days after a radiation leak at an atomic research laboratory in Tokai, Ibaraki Prefecture, the lab's operators said Tuesday.

This means that radioactive substances may have continued to escape from the facility after the operators reported the leak to regulators on the night of May 24.

The radiation leak occurred around 11:55 a.m. May 23 at the Japan Proton Accelerator Complex (J-PARC).

The fan started around 5:30 p.m. May 23 to reduce radiation levels inside the complex and continued running until 11 a.m. May 26, according to the operators, the Japan Atomic Energy Agency and the High Energy Accelerator Research Organization.

Yujiro Ikeda of J-PARC said that **an order to stop the fan failed to reach officials at the complex.**

The fan was also used for about 15 minutes starting at 3:15 p.m. May 23.

## New safety guidelines for nukes

### Japan's Regulator Approves New Safety Guidelines

<http://www.nucnet.org/all-the-news/2013/06/19/japan-s-regulator-approves-new-safety-guidelines>

Japan's Nuclear Regulation Authority (NRA) today approved safety guidelines for nuclear power plants that reflect the lessons learned from the March 2011 Fukushima-Daiichi accident, the Japan Atomic Industrial Forum (JAIF) has confirmed.

The regulators unanimously approved the final draft of the guidelines. The work to revise them started in October 2012.

The new guidelines cover three main areas: design basis safety standards, severe accident measures and safety standards for earthquakes and tsunamis.

Operators of nuclear plants will be obliged to take concrete steps to mitigate against the possibility of serious accidents. Until now, such action was voluntary, JAIF said.

They will also be required to draw up emergency scenarios for bigger earthquakes and tsunamis.

NRA chairman Shunichi Tanaka said the guidelines are up to international standards, but he said their "true value" will be tested when they are implemented. He also said there is a need for the NRA to establish a system of revising the guidelines further.

The new guidelines will come into effect on 8 July 2013, after which time the NRA will start accepting

applications from power companies for reactor restarts.

Finalising the guidelines has created a framework for safety checks to take place, but it could take months for the first restarts to be approved, JAIF said. Screening of each application is likely to take six months.

A draft copy of the new guidelines posted on the NRA website says various investigation reports and studies on Fukushima-Daiichi underlined “certain vulnerability and failures” in Japan’s existing nuclear safety systems, procedures and standards, including a lack of the back-fit systems that applies revised standards to existing nuclear reactors.

The draft says examples of this include an absence of effective severe accident management measures, vulnerability in countermeasures against the risk of earthquakes and tsunamis, and insufficient preparations against common cause failures.

The NRA also said Japan lagged behind internationally accepted safety principles and guidelines, a situation which needed “redress and readjustment” in crafting any new safety standards.

In March 2013, Japan’s prime minister told parliament that idled nuclear reactors will be restarted if it is proven safe to do so.

Shinzo Abe said he would work with the NRA to establish a new safety culture to strengthen the safety of the country’s nuclear plants in the wake of Fukushima-Daiichi.

Only two of Japan’s 50 commercial reactors, Ohi-3 and Ohi-4, have restarted since the Fukushima-Daiichi accident.

A draft copy of the guidelines is online:

[www.nsr.go.jp/english/data/new\\_safety\\_standards.pdf](http://www.nsr.go.jp/english/data/new_safety_standards.pdf)

## **Regulators officially decide new safety requirements for reactors**

<http://mainichi.jp/english/english/newsselect/news/20130619p2g00m0dm083000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority on Wednesday officially decided on Japan's new safety requirements for reactors aimed at preventing recurrences of disasters like the one at the Fukushima Daiichi complex in 2011.

The new regulations are expected to take effect on July 8, paving the way for nuclear power plant operators to apply for the NRA's safety assessment as a step toward resuming the operation of their idled reactors.



While calling the regulations a "culmination" of discussions that have taken place since October last year, NRA commissioners acknowledged that the rules' application is a more important job for them and vowed to make efforts to further improve them.

"I think we have created a system that can be regarded as quite proper internationally. But its real value will be questioned during the screening process," NRA Chairman Shunichi Tanaka told Wednesday's meeting to discuss the issue.

Four major utilities are likely to file for safety screening for a maximum of 12 reactors at six plants as early as July, although it is unclear how long the process will take. Senior NRA officials said earlier it may take at least six months.

Under the new requirements, utilities will for the first time be obliged to put in place specific countermeasures against possible severe accidents like reactor core meltdowns, as well as against huge tsunami -- the direct cause of the Fukushima crisis.

Before the crisis at the Fukushima Daiichi plant, triggered by a huge earthquake and tsunami on March 11, 2011, authorities had left it up to utilities whether to take steps against severe accidents, based on the assumption such disasters were extremely unlikely.

Utilities will now be required to equip reactors with filtered venting systems so that radioactive substances will be reduced when gas and steam need to be released to prevent damage to containment vessels, while preparing emergency control rooms to guard reactor operations against any act of terrorism or natural disasters.

The NRA will also require the operators to make a stricter assessment of whether geological faults running underneath nuclear power plants are active and make sure that key facilities are designed to withstand the largest tsunami estimated to hit the sites, such as by installing seawalls.

The NRA, which was launched in September last year, has been devising the new regulations to replace the current ones that proved insufficient in the wake of the world's worst nuclear crisis since the 1986 Chernobyl disaster.

The legal deadline for enacting the new safety criteria is July 18, but the power industry, which is struggling amid soaring fuel costs to boost nonnuclear thermal power generation, has been calling for earlier implementation so that utilities can start the procedure for restarting reactors as quickly as possible.

Of the 50 commercial reactors in Japan, only two in western Japan are currently online.

The four utilities seeking to swiftly apply for the NRA's safety screening are Hokkaido Electric Power Co., Kansai Electric Power Co., Shikoku Electric Power Co. and Kyushu Electric Power Co.

"We hope the NRA will promptly conduct safety screenings in an efficient way to address power shortages," an official of Kansai Electric Power, servicing an area centering on Osaka, said.

See also :

### **NRA makes new reactor safety regimen official**

<http://www.japantimes.co.jp/news/2013/06/19/national/nra-makes-new-reactor-safety-regimen-official/#.UcHEethBpg4>

Kyodo

### **Utilities obliged to boost tsunami defenses; four to seek restarts**

June 20, 2013

## **Oi safe enough...**

### **Japan's regulators to allow 2 reactors to continue**

[http://www3.nhk.or.jp/nhkworld/english/news/20130620\\_04.html](http://www3.nhk.or.jp/nhkworld/english/news/20130620_04.html)

Japan's nuclear regulators are expected to allow the only 2 reactors currently online in the country to continue operation.

The Nuclear Regulation Authority plans to submit a draft report on the 2 reactors at the Ohi power plant in Fukui Prefecture to a panel meeting on Thursday. The Authority has conducted inspections of the reactors since April based on a new set of stricter safety standards.

The new standards will take effect on July 8th. They require power companies to take concrete steps to deal with serious accidents.

The report says Authority inspectors have found no serious safety problems at the Ohi reactors.

With that positive assessment, the Authority is expected to give the go-ahead for the reactors to stay in operation until September, when they are scheduled to shut down for regular inspections.

All of Japan's nuclear power plants suspended operations after the nuclear accident in Fukushima 2 years ago.

## Oi reactors to stay online

### Ohi reactors likely to remain online beyond July

[http://www3.nhk.or.jp/nhkworld/english/news/20130620\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20130620_28.html)

Japan's Nuclear Regulation Authority will allow the country's only 2 running reactors to stay online after new nuclear safety guidelines take effect in July.

The guidelines for the first time oblige utilities to beef up measures against serious accidents like the one that occurred in Fukushima 2 years ago.

The authority submitted a draft report on its safety assessment of the No. 3 and No. 4 reactors at the Ohi plant in Fukui Prefecture to a panel meeting on Thursday.

The report says the reactors will not be seriously affected even by a maximum-intensity earthquake. But it added the reservation that geological strata underneath the site are not fully known.

It also urges the utility to improve some emergency measures including the on-site emergency response facility.

But the report ultimately concludes that the 2 reactors operated by Kansai Electric Power Company are unlikely to immediately cause a serious safety problem.

The NRA plans to compile a final report after talking to Kansai Electric at a meeting scheduled for next Monday.

**With that judgment, the Ohi reactors are expected to remain working until September, when they go offline for mandatory checks.**

But the nuclear regulator criticized the utility for being stingy with information on the safety measures. The authority said that such an attitude could hamper it from carrying out its screening effectively.

### NRA eyes allowing Japan's two operating reactors to remain online through September

Kyodo

<http://www.japantimes.co.jp/news/2013/06/20/national/nra-eyes-allowing-japans-two-operating-reactors-to-remain-online-through-september/#.UcQ6VNhSb9k>

The two nuclear reactors currently in operation in Japan have no serious safety problems in light of new regulations taking effect in July, regulators said in a draft assessment report released Thursday.

The assessment, if finalized by the Nuclear Regulation Authority, will enable reactors 3 and 4 at Kansai Electric Power Co.'s Oi plant in Fukui Prefecture to remain online through September, when they will be taken offline for mandatory routine checks.

"As of the end of June, we think . . . the situation will not create serious safety problems immediately," the NRA said in the report, which evaluated the current status of the reactors.

But the NRA noted that some requirements have not been fully satisfied and criticized Kepco for its attitude in exchanges with the regulators during the latest assessment process.

"There were some areas in which Kansai Electric proposed countermeasures bit by bit as if to find the minimum possible standard. Such an approach is likely to be an obstacle in efficiently proceeding with (reactor safety) assessments once the new regulations are implemented," the report said.

Reactors that are currently offline will have to be checked by the NRA to determine whether they meet the new safety regulations and can be restarted. The NRA is expected to start accepting applications for the safety screening from July 8.

But the NRA decided to conduct a special assessment on the safety of the Oi plant's reactors 3 and 4 before the regulations take effect, given that they are the only operating reactors in Japan out of a total of 50.

The new regulations, which reflect the lessons learned from the 2011 Fukushima No. 1 nuclear power plant disaster, require utilities to take specific measures to protect their atomic plants from tsunami and to prevent and minimize the consequences of severe crises, such as meltdowns.

As for emergency command centers that the utilities must establish to handle severe crises, Kepco decided to use a meeting room next to a central control room for reactors 1 and 2 at the Oi plant.

The NRA acknowledged in the draft report that the room is big enough to house supervisors who would be expected to stay there, but also urged the utility to quickly finish construction of a seismically isolated building to further improve safety.

## **Editorial: Regulator must thoroughly examine nuclear reactors amid new safety standards**

<http://mainichi.jp/english/english/perspectives/news/20130620p2a00m0na001000c.html>

The government's Nuclear Regulation Authority (NRA) has adopted new safety standards for nuclear power stations, mandating electric power companies to strengthen measures to prevent serious accidents such as that which befell the tsunami-hit Fukushima No. 1 Nuclear Power Plant.

The NRA standards, which require that nuclear power complexes be protected from earthquakes and tsunami, also apply to existing nuclear reactors. The standards will take effect on July 8, following

endorsement at a Cabinet meeting. Electric power companies that are eager to reactivate their idled nuclear plants are expected to file inspection applications with the NRA immediately after this time in order to see if their reactors meet the new standards.

"We have established a solid system that meets international standards," commented NRA Chairman Shunichi Tanaka. However, the new system can only function properly if the NRA undertakes strict inspections of the nuclear reactors. The NRA's ability to ensure the safety of nuclear power will be put to the test.

Tanaka explained that the NRA will strictly examine the safety of nuclear power stations, regardless of how much it will cost their operations to implement safety measures. Such a statement is only natural.

In order to secure transparency, the process of inspections for each reactor must be fully disclosed. In addition, power companies should keep in mind that they must make voluntary efforts to enhance safety at nuclear plants, since **the new standards represent only the minimum requirements that they must meet.**

In enforcing the new standards, the NRA and its secretariat have decided to set up three safety inspection teams staffed by about 80 examiners. The secretariat estimates that it will take at least half a year to examine each nuclear plant.

Nevertheless, Minister of Economy, Trade and Industry Toshimitsu Motegi has recently said that idled nuclear reactors will likely be reactivated as early as this coming autumn. The growth strategy adopted by the Cabinet of Prime Minister Shinzo Abe clearly states that the government will resume operations at nuclear power stations whose safety has been confirmed in light of the new standards. Electric power companies have expressed hope that safety inspections on nuclear reactors will be conducted efficiently -- with both the government and power suppliers appearing to desire reactivation of the nuclear plants as soon as possible.

Chairman Tanaka has said that the NRA will consider ways to streamline the operations of the inspection teams. **If inspectors place too much emphasis on efficiency and overlook problems with reactors, however, the authority will have completely reversed the priorities at hand.**

The NRA has fundamentally reviewed existing safety standards in developing the new regulations. Presently, the authority is examining the No. 3 and 4 reactors at the Oi Nuclear Power Plant in Fukui Prefecture -- the sole reactors now operating in Japan -- to see if they meet the new standards prior to their enforcement.

It should be remembered, however, that it took several years to examine the safety of newly installed nuclear plants under the existing standards -- and the new regulations have more inspection items than the existing standards, even with respect to reactors that are already in operation. Clearly, the NRA should place priority on ensuring safety over efficiency.

It also goes without saying that preconditions for reactivating idled nuclear power stations must include the acquisition of consent from local communities hosting nuclear plants, as well as the drawing up of regional disaster-prevention plans by local government bodies.

The enforcement of the new safety standards marks the beginning of an era when nuclear plants that do not meet these strict safety standards must be immediately shut down. Such being the case, the Abe administration is required to work out a framework for decommissioning nuclear reactors both efficiently and rapidly.

June 21, 2013

## **Brand new Emergency Response Center in Tokyo (NRA)**

URL of video :

[http://www.youtube.com/watch?v=ZITQMKZh6Oo&feature=player\\_embedded&list=UUo\\_QfGG3FIWVh3Z0AoxuwBA](http://www.youtube.com/watch?v=ZITQMKZh6Oo&feature=player_embedded&list=UUo_QfGG3FIWVh3Z0AoxuwBA)

## **NRA shows off its new crisis center**

<http://www.japantimes.co.jp/news/2013/06/21/national/nra-shows-off-its-new-crisis-center/#.UcQ6s9hSb9k>

by Kazuaki Nagata  
Staff Writer

The Nuclear Regulation Authority on Thursday showed the media its new Emergency Response Center, where data will be gathered and decisions made if another Fukushima-like disaster strikes.

The ERC, situated in the NRA building in Tokyo's Roppongi district, is nearly three times larger than the one used when the disaster hit and has two teleconferencing systems instead of one.

The previous ERC, which was run by the now-defunct Nuclear and Industrial Safety Agency in Kasumigaseki, only had one system, which limited its ability to get on top of the crisis. According to official findings from the Fukushima disaster, regulators were unable to determine what was happening at the plant in part because the ERC and Tokyo Electric Power Co.'s headquarters weren't able to teleconference.

The new ERC has two teleconferencing systems — one dedicated to the power plants and one to handling outside issues, such as evacuations.

The ERC can use the system to connect with nuclear power plants across the country, the municipal and prefectural governments hosting them, the utilities running them, and the prime minister's office.

The old ERC had only 250 sq. meters of floor space, but the new one has 700 sq. meters — enough to let 200 people work together instead of just over 50. During the Fukushima crisis, more than 100 people jammed the facility.

The center is divided into several sections by task, with some devoted to reactor analysis and others to radiation monitoring, medical assistance or public relations.

It also has systems for checking the status of all of the reactors in the nation, as well as SPEEDI (system for prediction of environmental emergency dose information), the simulator that projects how radioactive fallout ejected into the atmosphere will spread in case of a nuclear crisis.

## Kashiwazaki-Kariwa sorted out?

### **Breakwater completed for nuclear plant in Niigata**

[http://www3.nhk.or.jp/nhkworld/english/news/20130621\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20130621_02.html)

Tokyo Electric Power Company has unveiled a breakwater erected to prevent tsunami damage to a nuclear plant on the Japan Sea.

Seawalls are one of the requirements stipulated in safety guidelines approved by the country's nuclear regulator on Wednesday.

The safety guidelines will take effect in July. They oblige power companies to implement measures to

address the possibility of serious accidents at nuclear plants.

On Thursday, TEPCO gave reporters access to the breakwater built for the Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture. The utility started constructing the barrier 2 years ago.

The breakwater stands about 15 meters above sea level. TEPCO officials say the seawall can protect the reactor buildings even if it was hit by tsunami waves as large as ones that struck the Fukushima Daiichi nuclear station in 2011.

TEPCO also let reporters watch, for the first time, its work to set up filter vents at the plant. The system can release pressure in containment vessels while limiting the emission of radioactive substances.

Power companies are required to install filter vents at boiling-water type reactors similar to those at the crippled Fukushima plant.

TEPCO is now laying concrete foundations for the vents on the ground next to the currently offline No.1 and No.7 reactor buildings.

If completed, the tank-shaped equipment will measure 8 meters high and 4 meters wide. It uses water as a filter to drastically reduce emissions of radioactive elements.

TEPCO says it hopes to win local understanding for the safety measures so it can quickly apply to restart the reactors.

## **NRA gives pass to 2 Oi nuke reactors as showdown looms on tougher standards**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201306210083](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201306210083)

By allowing the continued operation of two reactors at the Oi nuclear power plant until September, the Nuclear Regulation Authority signaled the difficulties it faces in forcing utilities to abide by what it calls the "world's most stringent" safety standards for the nuclear industry.

The nuclear watchdog concluded at a June 20 meeting that it found "no problem immediately posing serious threat to the safety" of the Oi facilities during provisional checks it has been conducting since April, and will allow them to continue operating until they are shut down in September for routine inspections.

The decision allows Kansai Electric Power Co.'s No. 3 and No. 4 Oi reactors to stay online this summer without having to pass the new tougher safety standards, although the NRA expressed frustration with the



utility's cooperation. This frustration reveals the potential tug of war the NRA faces in coming years in dealing with plant operators.

Of Japan's 50 nuclear reactors, the Nos. 3 and 4 Oi reactors are the only ones currently online. The two were reactivated last July as the nation's first to do so after the 2011 Fukushima nuclear accident.

The approval was not a surprising one, as the NRA was set from the outset to let the Oi reactors operate until September unless they were found to have serious problems, despite the nuclear watchdog's policy that requires all reactors to meet new safety guidelines before they are restarted.

The guidelines, which will go into effect in July, were drawn up to legally require operators of nuclear power plants to be prepared for a severe accident, such as the one at the Fukushima No. 1 nuclear power plant operated by Tokyo Electric Power Co.

Before the March 2011 triple meltdown following the Great East Japan Earthquake and tsunami at the Fukushima plant, the previous guidelines did not envision a disaster of such magnitude.

All reactors are expected to clear NRA examinations to assess if they meet its new safety guidelines before they are allowed to go back online.

According to experts, the NRA gave the green light to the continued operation of the Oi reactors after "less-than-strenuous" provisional checks partly because it did not have time to conduct detailed studies.

For example, the NRA put off determining if an active seismic fault runs beneath the plant site. Some members of the panel of experts with the NRA pointed out that on-site studies indicated the presence of an active fault under a key facility.

The NRA, however, decided to delay its final assessment because Kansai Electric, which disputes the panel's view, has not finished its own study and the NRA panel was not unanimous in its evaluation.

The NRA also had to accept a sketchy study of the geological structure beneath the plant site and surrounding area, which is necessary to determine the impact of an anticipated quake.

NRA investigators plan to embark on an extensive check of the geological structure when Kansai Electric applies for restarts of the Oi reactors.

The provisional checks also revealed the utility's reluctance to cooperate with the NRA.

The NRA ordered the utility to determine the size of an expected temblor on the assumption that three active faults in the plant's vicinity will shift at the same time. But it took the company about a month to agree to the simulation.

The NRA criticized Kansai Electric in a June 20 draft report that said the company "looked as if it were trying to find the lowest possible bar to clear the new safety standards by proposing safeguard measures by piecemeal."

In an apparent warning to other utilities, the NRA said such an approach would "become an impediment to efficiently conducting inspections."

Other regional utilities have been closely observing Kansai Electric's cooperation with the NRA during the provisional checks as reference for when they apply for restarts of their reactors in July and later.

The NRA will begin its checks of reactors under the new safety guidelines starting July 8.

Shunichi Tanaka, NRA chairman, said the new standards released June 19, are the "world's most stringent, as was planned."

But he also acknowledged for the guidelines to be truly effective hinges on how strenuous the NRA's examinations will be in line with the new regulations.

Tanaka has sent mixed signals to utilities eager to bring idled reactors back online due to ballooning fossil fuel costs, saying the NRA's top priority is the safety of reactors, not the bottom lines of the operators, and emphasizing speedy and efficient examinations.

Four electric power companies are expected to apply for restarts of their 12 reactors right after the new guidelines take effect on July 8.

They are the Nos. 1-3 reactors at the Tomari plant in Hokkaido, operated by Hokkaido Electric Power Co.; the Nos. 3-4 reactors at the Oi plant, and the Nos. 3-4 reactors at the Takahama plant, both in Fukui Prefecture, of Kansai Electric; the No. 3 reactor at the Ikata plant in Ehime Prefecture of Shikoku Electric Power Co.; and the Nos. 3-4 reactors at the Genkai plant in Saga Prefecture and the Nos. 1-2 reactors at the Sendai plant in Kagoshima Prefecture of Kyushu Electric Power Co.

All these reactors are the pressurized-water type, different from the Fukushima No. 1 plant.

They are expected to get easy approval from the NRA because they have a five-year moratorium on the installation of the required filtered containment vessel venting system.

Other utilities--Tohoku Electric Power Co., TEPCO, Chubu Electric Power Co., Hokuriku Electric Power Co. and Chugoku Electric Power Co.--are likely to take more time to be ready for applying.

All their reactors are of the boiling water type that are required to be fitted with a filtered containment vessel venting system at the time of application for restarts.

When the Oi reactors are shut down for an inspection in September, the nation will have no reactors online for at least several months.

Experts say that it will be late this year or early next year at the earliest when the first reactor may be reactivated after passing the new safety standards.

## **More missed safety inspections discovered at Monju**

[http://www3.nhk.or.jp/nhkworld/english/news/20130621\\_35.html](http://www3.nhk.or.jp/nhkworld/english/news/20130621_35.html)

Some 2,300 additional missed equipment safety inspections have been discovered at the Monju prototype fast-breeder reactor on the Sea of Japan coast.

Plant operator Japan Atomic Energy Agency conducted an investigation into the way its inspections were carried out.

The operator says the newly-discovered inspection lapses even involved key safety equipment used to monitor the movement of control rods.

Japan's Nuclear Regulation Authority found about 10,000 similar lapses at Monju last month and ordered the operator not to prepare to restart the reactor until its safety can be established.

Japan Atomic Energy Agency says it is extremely regrettable that the revelation of more missed safety inspections has undermined public trust.

June 22, 2013

## A "sobering" account : 100 years to decommission Chernobyl?

### Lesson for Japan: Decommissioning Chernobyl may take '100 years'

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201306220069](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201306220069)

By HISASHI HATTORI/ Senior Staff Writer

CHERNOBYL, Ukraine--Chernobyl stands as the worst nuclear disaster yet, and 27 years later there are still no signs of when work can begin to decommission the heavily damaged No. 4 reactor.

That sobering assessment offers an important lesson for the Japanese government and Tokyo Electric Power Co., which intend to decommission the crippled reactors at the Fukushima No. 1 nuclear power plant within 30 to 40 years.

An Asahi Shimbun reporter went inside the No. 4 reactor at the Chernobyl plant on June 20 for a first-hand look at the damage and to ascertain what is being done to contain the spread of radioactive materials.

The visit provided a mountain of evidence that the task in Japan will not likely proceed according to plan. Although a concrete sarcophagus was constructed to cover the No. 4 reactor building that was demolished in an explosion on April 26, 1986, the shield has become badly damaged. There are now plans to construct a new and even bigger shelter to cover that structure.

Radiation readings at the control room of the No. 4 reactor registered 7 microsieverts per hour. In 1990 when another Asahi Shimbun reporter visited the same reactor, the radiation level was 30 microsieverts per hour.

That's the good news: It means radiation levels have dropped to one-fourth of the previous level.

However, behind the thick concrete wall of the sarcophagus still lies the melted nuclear fuel that caused the meltdown and explosion in April 1986. The radiation levels within the sarcophagus are so high that anyone entering it would be certain to die.

The Chernobyl disaster resulted in the release of about six times the volume of radioactive materials spewed out from the Fukushima plant. More than 30 people perished putting out fires immediately after the Chernobyl accident.

The Chernobyl plant now faces a new crisis. A huge metal frame measuring about 80 meters in height has been installed to hold up the reactor building as it is in danger of collapse. Rust covers some exposed parts of the steel frame of the sarcophagus.

Despite monumental efforts to prevent the release of radioactive materials into the air, rain that leaks through cracks in the sarcophagus mixes with the radioactive materials inside and seeps into the soil.

In an attempt to prevent a further spread of radioactive materials, a new plan has been put together to construct a dome-shaped shelter that will eventually cover the entire No. 4 reactor. Plans call for completing the shelter in two years.

Oleksandor Novikov, deputy technical director for safety at Chernobyl, said: "Eventually, we want to break open the sarcophagus and remove the melted fuel. However, no decision has been made on what process will be used. **We have to think that it may take 100 years.**"

The roof of a nearby building offers a clear view of not only the extent of damage to the nuclear plant, but also of the massive new shelter that is being constructed.

The shelter now rises 85 meters. When it is complete, it will reach a height of **110 meters**, making it one of the world's largest arch-shaped buildings.

The shelter is being constructed in two parts. Once they are finished, the parts will be moved along rails to veil the No. 4 reactor entirely. In September, work will begin to remove exhaust vents that could become a hindrance if they snag on the roof.

The plan came under initial consideration in 1997, but it was not until 2012 that construction began in earnest. Construction expenses will reach 935 million euros (120 billion yen, or \$1.2 billion).

More than 20 nations, including Japan, have made contributions to the Chernobyl shelter fund at the European Bank for Reconstruction and Development.

The shelter was deemed to be a priority because the sarcophagus has had to undergo a number of repairs for structural weakness. There are countless cracks in the concrete wall of the sarcophagus.

Construction of the sarcophagus began two months after the nuclear accident. A seemingly endless number of military personnel was brought in for the purpose, and construction was completed in six months. Because the high radiation levels prevented workers from getting near the structure, no welding or bolts were used in the construction. That defect has led to a shifting of the foundation through land sinking.

According to a report by experts at the International Atomic Energy Agency, the holes in the sarcophagus cover a total area of 1,000 square meters. As a result, some 2,000 tons of rainwater leaks into the reactor building over the course of a year. After mixing with the radioactive materials inside, **about 1,300 tons of contaminated water is produced, which then leaks into the ground under the No. 4 reactor.**

A huge hole was also clearly visible in the turbine building on the south side of the plant. The hole was made when the roof of the machinery room in the turbine building collapsed in February. Workers had to temporarily evacuate at that time. While the initial assumption was the roof had collapsed due to the weight of snow, it is now suspected that shoddy repairs led to roof braces coming off, resulting in the roof collapse.

All these problems mean that no specific plans have yet been drawn up on how to decommission the reactor at Chernobyl.

Plans calls for installing a crane to the ceiling of the shelter now under construction. The crane would be capable of lifting 50-ton loads. Once the shelter was completed, the crane would be used to first clear away the sarcophagus. The next step would be to remove melted nuclear fuel from the reactor. However, no process or deadline has yet been set for that task.

Volodymyr Holosha, head of the State Agency of Ukraine on Exclusion Zone Management, said, "The new shelter will have a service life of 100 years, which means that is about how long it will take to decommission the reactor."

Even for the No. 1 to No. 3 reactors that were not affected by the accident, estimates are that decommissioning will take at least 50 years.

Moreover, experts have only a fuzzy picture about the melted fuel. As yet, they have no way of knowing exactly where in the damaged reactor the fuel may have spread to. The high radiation levels in the reactor prevent any attempt to approach the area for an assessment.

Sergiy Paskevych, a senior researcher at the Institute for Safety Problems of Nuclear Power Plants under the National Academy of Sciences of Ukraine, said:

"There will be a need to develop robots that can operate in high radiation areas. We will also have to develop technology that will allow for the safe grabbing of the fuel for removal."

Similar work is also progressing in Japan to confirm the state of the melted fuel at the Fukushima plant as well as the damage to the reactors. Because the work now being conducted is still only in the preliminary stage, there is no specific schedule or process for the actual decommissioning work.

With workers at the Fukushima plant still struggling to keep water decontaminated with radiation from leaking into the ground or spilling into the sea, the plans set by the government and TEPCO for decommissioning the Fukushima reactors have to be considered as only **theoretical**.

## Monju even worse than announced

### Lack of safety checks at Monju reactor more serious than initially thought

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201306220053](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201306220053)

By HIDEKI MUROYA/ Staff Writer

TSURUGA, Fukui Prefecture--The Japan Atomic Energy Agency has been forced to apologize yet again after it emerged that many more pieces of equipment at the Monju prototype fast-breeder reactor here were overlooked for inspections.

The agency disclosed June 21 that 12,000 items escaped checks, some 2,000 more than initially announced.

"We apologize for losing trust again," Takehide Deshimaru, deputy head of the Monju plant, said at a news conference.

In May, the Nuclear Regulation Authority ordered the JAEA to suspend preparations for reactivating Monju and to modify its operational safety programs, which lay out protocols for safety controls. The NRA said the JAEA had skipped inspections for 9,847 pieces of Monju equipment since 2010.

The NRA's safety inspections of Monju, which began June 3, spotted the additional 2,000 cases of defaults, the JAEA said.

The latest instances involved key safety equipment, including a circulation pump used to inject sodium to cool the reactor. The NRA is planning a new round of investigations into the matter, as the slipshod checks almost certainly represent a breach of operational safety programs stipulated under the law on the regulation of nuclear reactors.

The JAEA also revised the number of equipment pieces for which inspections had been skipped and were yet to be finished as of the end of March, from some 2,000 to roughly 4,000. It said it will take at least until September to finish all the inspections.

## **Monju operator skipped inspections of another 2,300 devices**

<http://mainichi.jp/english/english/newsselect/news/20130622p2g00m0dm004000c.html>

FUKUI, Japan (Kyodo) -- The operator of the Monju prototype fast-breeder nuclear reactor said Friday it had skipped inspections of another 2,300 pieces of equipment, in the latest sign of its lax safety management.

The Japan Atomic Energy Agency was already found to have failed to conduct inspections at appropriate intervals on nearly 10,000 devices, leading nuclear regulators to issue an order in late May effectively prohibiting the Monju reactor from restarting until steps are taken to prevent a recurrence.

The JAEA, a national research institute, reported the latest blunders during a safety inspection carried out by the Nuclear Regulation Authority between June 3 and Friday.

Japan has already spent over 1 trillion yen on the Monju project, hoping the facility would play a key role in the country's spent fuel recycling policy.

But the reactor has remained largely offline since first achieving criticality in 1994, due to a sodium coolant leak and other subsequent problems.

Even after being barred from engaging in preparatory work for restarting the reactor, the JAEA announced earlier this month that it had temporarily failed to keep heat in the sodium of the secondary heat transfer system when checking a power supply system.

June 24, 2013

## **Oi reactors allowed to continue running till September**

### **Nuclear authority to allow 2 reactors to run**

[http://www3.nhk.or.jp/nhkworld/english/news/20130624\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20130624_21.html)

Japan's Nuclear Regulation Authority is set to allow the only 2 reactors remaining online in the country to continue operation.

Experts from the authority have been inspecting the reactors at the Ohi nuclear plant, in central Japan, to see if they can satisfy severe accident guidelines that take effect in early July.

Before the 2011 earthquake and tsunami crippled the Fukushima Daiichi nuclear plant, utilities were allowed to decide for themselves whether to implement such precautionary measures. This was owing to a wide-spread belief that such an accident was unlikely in Japan.

At a meeting on Monday, the experts discussed improvements that the operator, Kansai Electric Power Company, has proposed for its draft plan for the plant.

These include enhancing video conferencing equipment at a tentative emergency command center, and improving the ability to pump in sea water to cool reactors.

The operator said it will complete the improvements by the end of this month.

Officials at the authority had presented the draft report for the plant last week. It says there is no immediate threat to the safety of the reactors. The experts approved that plan with the improvements.

The authority is expected to allow the reactors to continue operating through to September, when they will go down for regular maintenance.

The new guidelines stipulate that plant operators must set up an emergency command center that is strong enough to withstand earthquakes, tsunamis and radiation in a worst-case scenario.

They also require operators to install "filter vents" for boiling-water type reactors similar to those at the stricken Fukushima plant. The vents can ease pressure in containment vessels by releasing gases after filtering out most of radioactive substances.

Plant operators must also prepare cooling measures for situations where there is an attack by aircraft. The guidelines also call for replacing power cables with non-flammable types.

June 25, 2013

## **MOX back in Japan - What does it mean?**

### **Plutonium problem lingers as mixed-oxide fuel comes to Japan**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201306250093](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201306250093)

A shipment of mixed-oxide fuel will arrive in Japan as early as June 27, part of the nation's plutonium stockpile that is already equivalent to 5,000 Nagasaki-type atomic bombs.

The shipment, two years behind schedule due to the Great East Japan Earthquake in 2011, is expected to be used for plutonium-thermal (pluthermal) power generation, a key component of Japan's nuclear fuel recycling program.

However, the fuel recycling program has been plagued by so many problems that the nation's plutonium stockpile could increase further, heightening concerns in the international community about possible nuclear weapons proliferation.

The shipment from France is also creating headaches for Kansai Electric Power Co., which plans to use the fuel at its Takahama nuclear power plant in Fukui Prefecture, pending approval of its application to restart the No. 3 and No. 4 reactors there in early July.

Under pluthermal operations, mixed-oxide fuel, which contains plutonium extracted from spent nuclear fuel, is used in nuclear reactors.

A French company processed spent nuclear fuel from Kansai Electric into 20 mixed-oxide fuel assemblies, which contain an estimated 900 kilograms of plutonium. Kansai Electric has not disclosed how many of the fuel assemblies will be brought into the Takahama plant.

Japan currently possesses 44 tons of plutonium, according to the Atomic Energy Commission. **Nine tons, including the latest shipment, are in Japan, while the remaining tons are in Britain and France, where spent fuel from Japan has been reprocessed.**

**The plutonium stockpile has grown exceptionally large for a non-nuclear power.** Countries have been discouraged from possessing excess plutonium for fear of weapons applications.

The shipment to the Takahama plant is drawing particular attention because it will be the first mixed-oxide fuel to arrive in Japan since the earthquake and tsunami crippled the Fukushima No. 1 nuclear power plant on March 11, 2011.



Kansai Electric postponed the shipment of the mixed-oxide fuel after the disaster. But the utility has now been forced to accept it in the face of strong demands from France.

The timing of the shipment is undesirable for Kansai Electric, which is putting priority on reactor restarts, rather than resuming pluthermal operations.

“What is important is bringing nuclear reactors back online,” a senior Kansai Electric official said. “We want to avoid drawing criticism in the community now.”

Opposition to pluthermal operations from citizens and other critics is stronger in Kansai than in other regions. Kansai Electric needs a more detailed, time-consuming explanation to the local community than is required of other utilities.

Kansai Electric, which has relied heavily on nuclear power generation to supply its customers, has been desperate to restart idle reactors since incurring 243 billion yen (\$2.4 billion) in losses in the year ended March.

Japan’s 50 nuclear reactors were taken offline following the Fukushima nuclear disaster. Only two--at Kansai Electric’s Oi plant--have been brought back online.

Four utilities plan to apply for restarting 12 reactors as soon as new nuclear safety standards take effect July 8.

Three of the reactors were involved in pluthermal power generation before the nuclear disaster: the No. 3 reactor at the Takahama plant, the No. 3 reactor at Shikoku Electric Power Co.’s Ikata plant in Ehime Prefecture, and the No. 3 reactor at Kyushu Electric Power Co.’s Genkai plant in Saga Prefecture.

While Shikoku Electric and Kyushu Electric plan to resume pluthermal operations if the restarts are approved, Makoto Yagi, president of Kansai Electric, remains noncommittal.

“We will make a decision based on changes in government policy and understanding of the local community,” Yagi said.

Another problem for the utilities is that pluthermal operations do not offer an advantage to the companies’ bottom line.

The import value of mixed-oxide fuel brought into the Takahama plant in June 2010 was 1.3 billion yen per ton, according to trade statistics and other sources. The figure is nearly five times as much as conventional uranium fuel due to costs to reprocess the spent fuel and transport it to and from France.

But electric power companies do not have the option of withdrawing from the government-led pluthermal program.

“We have no other choice because Japan needs to consume plutonium,” a senior official of the Federation of Electric Power Companies of Japan said.

The government originally planned to consume plutonium extracted from spent nuclear fuel in a fast-breeder reactor, but plans have remained stalled since sodium leaked at the Monju prototype reactor in 1995.

The government has since shifted its emphasis to feeding mixed-oxide fuel to conventional light water reactors.

Electric power companies had planned pluthermal operations at 16 to 18 reactors, but the number was limited to four reactors due to accident cover-up scandals and other reasons.

One of those reactors was the No. 3 reactor at the stricken Fukushima No. 1 plant that will eventually be decommissioned.

It will also be difficult to introduce pluthermal operations at new facilities.

Idle nuclear reactors will remain offline unless they meet the new safety standards. Some are expected to be decommissioned.

Japan’s plutonium stockpile is expected to increase because the government and utilities plan to start full-scale operations of a spent nuclear fuel reprocessing plant in Aomori Prefecture.

The Aomori prefectural government is demanding the reprocessing of all spent fuel as a condition for accepting used fuel at the plant.

Storage pools for spent fuel are quickly reaching capacity at nuclear power plants across the nation. If Aomori Prefecture refuses to accept spent fuel, nuclear plants will be saddled with overflowing spent fuel pools and will be unable to continue operations.

Direct disposal, or burying spent fuel without reprocessing, was considered under the previous Democratic Party of Japan government. But discussions have gone nowhere after the Liberal Democratic Party took over government in December.

(This article was compiled from reports by Toshio Kawada, Rintaro Sakurai, Shinya Takagi and Mari Fujisaki.)

## J-PARC scolded by NRA...

### Gov't white paper points to flaws in nuclear facility safety management

<http://mainichi.jp/english/english/newsselect/news/20130625p2a00m0na010000c.html>

The operators of troubled nuclear facilities such as the Monju prototype fast-breeder nuclear reactor do not have sufficient safety awareness and safety management systems in place, according to the government's 2013 white paper on science and technology.

The white paper approved by the Cabinet on June 25 touched on a string of mishaps at nuclear facilities in the country. The operator of the Monju prototype fast-breeder nuclear reactor was recently found to have failed to conduct inspections at appropriate intervals on about 10,000 devices, while the Japan Proton Accelerator Research Complex (J-PARC) -- a Japan Atomic Energy Agency (JAEA) nuclear physics laboratory in Ibaraki Prefecture -- was found to have leaked radioactive substances into the atmosphere.

The white paper states, "(These incidents) reflect a lack of both safety awareness and a sufficient safety management system on the part of operators of facilities that deal with radioactive substances."

On nuclear fuel cycle technology such as the Monju reactor, the white paper stopped short of clarifying what the government would do with it, saying only, "A decision will be made on whether to conduct further research and development with the country's energy and nuclear policies in mind."

In response to a string of incidents involving forged, falsified and plagiarized research data, the white paper says the government has been moving to set up offices to accept complaints and stiffen penalties for such misdeeds. It then stresses the need for steps to galvanize work in research and development. The white paper also points to the need to consider introducing a system of evaluation for the content of research papers, including the social effects of research to foster economic growth by promoting science and technology.

June 26, 2013

## **NRA assails particle accelerator staff over continued experiments after radiation leak**

<http://mainichi.jp/graph/2013/06/26/20130626p2a00m0na007000c/001.html>

The Nuclear Regulation Authority (NSA) assailed Japan Proton Accelerator Research Complex (J-PARC) staff on June 26 for continuing to run experiments after a radiation leak.

The final report on a June 20 on-site investigation -- submitted on June 26 -- found that J-PARC's hadron experiment facility continued to operate for four hours after a May 23 radiation leak. Furthermore, an adjacent lab for material and biological experiments went on using the same particle accelerator until 12:45 a.m. on May 25.

The report also noted that an exhaust fan that allowed radiation to escape was kept running for around three days after the accident.

Employees at J-PARC -- operated by the Japan Atomic Energy Agency -- "were not sufficiently prepared for the accident," the NRA investigative report concluded.

Even Gov't can see flaws in nukes management

June 28, 2013

## **New safety standards are no tool for restart**

### **New nuclear safety standards**

<http://www.japantimes.co.jp/opinion/2013/06/28/editorials/new-nuclear-safety-standards-2/#.UcyQj9hSb9k>

The Nuclear Regulation Authority on June 19 approved new safety standards for reactors. It will put them into force beginning July 8. Four power companies are expected to apply for safety screening by the NRA in July to restart up to 12 reactors at six nuclear power plants.

NRA Chairman Shunichi Tanaka said that his organization will not take power companies' business conditions into consideration. The NRA should stick to this principle and carry out the screening in a transparent manner and reject any political pressure.

Although the Abe administration and the power industry are eager to restart nuclear power plants, **they should not view the new safety standards as a procedural tool for the restart.** Power companies must understand that if reactors fail to meet the requirements under the new standards, the companies must start a concrete process of decommissioning them.

The essence of the new standards is that they require power companies to take measures to cope with a severe accident as happened at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant. Such measures include construction of sea walls that will protect individual nuclear power plants from the largest tsunami that could conceivably hit them and installation of filters to remove radioactive substances if such substances are vented from reactor cores into the atmosphere during an emergency.

Before the Fukushima nuclear crisis, authorities had left the decision on whether to adopt those measures up to power companies by virtually refusing to consider the possibility that a severe accident could happen. But under the new safety standards, a grace period of five years will be allowed for the installation of filters in pressurized light-water reactors, since hydrogen explosions are unlikely in them. There is no grace period for installing filters in boiling-water reactors.

A grace period of the same length will be allowed for the installation of a second control room that is capable of independently controlling and cooling reactors in the event of a natural disaster or a terrorist attack.

Before the Fukushima nuclear fiasco, operators of nuclear power plants were required to find out whether geological faults inside a plan site were active in the past 120,000 to 130,000 years. The period to be examined will now be extended to the past 400,000 years if the operators are unable to prove that faults have not been active in the past 120,000 to 130,000 years. Important facilities of a nuclear power plant must not be built near an active fault.

The new standards are based on the idea of backfitting: making changes to existing nuclear power plants to reflect the latest knowledge and findings related to safety. The NRA should quickly incorporate such knowledge and findings into the standards.

The government, for its part, should adopt a policy to speedily reduce Japan's reliance on nuclear power and to eventually abolish it. It also should help create new industries in areas now hosting nuclear power plants.

## How tough will the new rules be?

### NHK Nuclear Watch: New Regulatory Requirements

<http://www3.nhk.or.jp/nhkworld/newsline/201306282000.html>

- breakwaters against sea water
  - back-up power systems must be upgraded
  - alternative control room
  - filter vents
- 
- Importance of the electric power network in nuclear plants (2,000 cu.meters/plant). The fireproofing is therefore essential.

Cables be either special fire-retardant cables or specially-coated cables.

However not all experts agree that both solutions are equally efficient. To prove this, NHK has asked experts to conduct experiments using different thicknesses of coating.

After 6 minutes only (the experiment was supposed to last 20 minutes) the 1mm-thick coated cables already caught fire.

Conclusion: Thinly-coated cables burn too easily! The thickness of the coating has therefore to be examined seriously.

The NRA has not specified how they will verify the nuclear plants compliance with the new safety standards. It's not just a question of checking all these cables. The challenge of these inspections is "colossal and it may even be impossible". The NRA has only 80 inspectors at its disposal. It clearly need more manpower and more expertise.

June 29, 2013

## NRA new standards not sufficient to ensure safety

### Niigata gov. raises doubts about gov't safety requirements for nuclear reactors

<http://mainichi.jp/english/english/newsselect/news/20130629p2a00m0na016000c.html>

NIIGATA -- Niigata Gov. Hirohiko Izumida has raised doubts about the government's new safety requirements for nuclear reactors -- a stance that could make reactivating the prefecture's idled Kashiwazaki-Kariwa Nuclear Power Plant at an early date difficult.

"Even if the Kashiwazaki-Kariwa nuclear plant run by Tokyo Electric Power Co. (TEPCO) meets new safety requirements set by the Nuclear Regulation Authority (NRA), it won't mean its safety is guaranteed," Izumida said in an exclusive interview with the Mainichi Shimbun.

"Setting safety standards without getting to the bottom of the Fukushima nuclear disaster provides no guarantee of safety. Unfortunately, the new safety requirements won't win public confidence," he said.

Izumida also questioned the composition of the NRA, stating, "Nobody familiar with local government administration is on the panel."

The Niigata governor also criticized the NRA for failing to listen to opinions from the prefectural government about safety measures including a plan to evacuate local residents in the event of an accident at the Kashiwazaki-Kariwa plant.

"Such an absurd stance is totally unheard of," he said.

Izumida also pointed out that even if a serious accident occurs at a nuclear plant, current legislation does not allow anybody to be dispatched to a site where levels of radiation are high to prevent the situation from worsening.

"Abandoning the site of a serious accident could result in a meltdown. Unless the government determines how to respond to such a situation, we can't say it has gotten to the bottom of the Fukushima accident," he said.

The national government intends to resume operations at nuclear plants that meet the NRA's new requirements on condition that consent is gained from local governments hosting such power stations.

Izumida hinted that he will not agree to reactivation of the Kashiwazaki-Kariwa plant, saying, "Before doing that, the government must get to the bottom of the Fukushima nuclear crisis." He added, "The NRA standards alone won't ensure the safety of prefectural residents."

TEPCO needs to resume operations at the Kashiwazaki-Kariwa plant in order to achieve its goal of moving into the black during the current business year. If reactivation of the plant is delayed, it may force the utility to once again raise its electricity rates.

July 4, 2013

## **A new rat story! Fukushima Daini this time**

### **TEPCO reports another rat problem, this time at Fukushima No. 2 plant**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201307040083>

A rat caused a battery charger to break down in an emergency gas turbine generator vehicle at the Fukushima No. 2 nuclear plant, the latest rodent-related problem to hit Tokyo Electric Power Co.

The rat is believed to have entered the vehicle through a 3- to 4-centimeter opening for cables and then shorted a switchboard, a TEPCO official said July 3.

The No. 2 plant is located just south of the company's crippled Fukushima No. 1 nuclear power plant.

The gas turbine generator vehicle was deployed for emergency use at the No. 2 plant after the Great East Japan Earthquake and tsunami on March 11, 2011, knocked out power at the No. 1 plant, leading to the meltdowns of three reactors.

The latest problem arose when a worker turned on the power for the control vehicle used to operate the gas turbine generator vehicle at 9:20 a.m. on July 2. An alarm indicated a malfunction in the battery charger, and the dead rat was found beneath the switchboard.



The official said the company took measures to block openings leading to switchboards and other equipment after a rat shorted a switchboard and halted the cooling system for spent fuel pools at the No. 1 plant in March.

The opening for the cables in the vehicle at the No. 2 plant was not filled in, the official said.

## NRA explains itself

### Nuclear watchdog explains new safety standards

[http://www3.nhk.or.jp/nhkworld/english/news/20130704\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20130704_37.html)

Officials with Japan's nuclear regulatory agency have explained new safety standards for nuclear power plants to representatives of regional governments.

The Nuclear Regulation Authority held a briefing on Thursday. About 70 officials from 22 prefectures attended.

The new standards take effect on Monday. Utilities are expected to begin submitting applications to restart nuclear plants based on the new standards next week.

The revised rules require utilities to take measures for dealing with severe accidents. Such measures have been voluntary until now.

Participants at the meeting asked for details on the procedures a utility must follow once it gains permission to restart a nuclear plant.

Some people in the audience expressed doubt that the new regulations are strict enough. They noted that they were finalized even though investigators are still looking into what caused the Fukushima Daiichi nuclear accident.

July 8, 2013

## Screening for restart: What's to be done?

## **What utilities have to do under new nuclear rules**

[http://www3.nhk.or.jp/nhkworld/english/news/20130708\\_19.html](http://www3.nhk.or.jp/nhkworld/english/news/20130708_19.html)

Japan's new nuclear safety guidelines are the first to oblige power companies to prepare for major nuclear accidents. They also demand that utilities make their assessments for possible earthquakes and tsunami stricter than in the past.

The rules require utilities to set up an emergency command center that can withstand earthquakes and radiation. They also call for the installation of filter vents for boiling water reactors -- the kinds used at the stricken Fukushima Daiichi plant. The vents are designed to release pressure in containment vessels while limiting massive emission of radioactive substances.

Utilities will also have to replace power cables with non-flammable types before resumption of operations.

Plant operators also need to have ways to cool nuclear fuel from outside the reactors in case of terrorist attacks from aircraft.

A facility housing a back-up central control room must be set up 100 meters from reactors within 5 years.

The guidelines say faults that moved in the last 120,000 to 130,000 years are judged to be active faults. But if it is impossible to make clear assessments, the guidelines say judgment should be based on whether faults moved in the last 400,000 years. Three-dimensional stratal analysis is also required.

Power firms are asked to anticipate the largest possible tsunami, and set up seawalls and take other measures to prevent water from entering buildings.

They must also assess anticipated damage from volcanic eruptions and tornados.

Nine of the pressurized water-type reactors in the country use flammable electric cables. It is believed that replacing them will cost an enormous amount of time and money. That is also true for other upgrades required of operators running aged reactors. The stricter safety standards are expected to force companies to decide which reactors to keep and which to decommission.

## **Screening plants to restart nuclear reactors**

[http://www3.nhk.or.jp/nhkworld/english/news/20130708\\_13.html](http://www3.nhk.or.jp/nhkworld/english/news/20130708_13.html)

Japan's nuclear authority will soon begin screening applications from power companies to restart some nuclear reactors.

Screening will be based on new nuclear safety guidelines that took effect on Monday.

The Nuclear Regulation Authority will assign 80 people in 3 teams to do the work.

Officials from the nuclear agency say it will take at least 6 months to process an application from each plant.

Items to be examined include operators' preparation for serious accidents, powerful earthquakes and tsunami.

The agency will also perform onsite inspections.

The central government will approve the restart of reactors at plants found safe by the nuclear authority.

But before the final go-ahead, the government and power companies must gain the consent of local municipalities.

Some of the local governments have no plans in place for evacuating residents in case of an accident.

The nuclear authority says the municipalities must submit such plans before it can give the green light to restart reactors.

It is not known how long the government will take to approve the restart.

Two reactors at the Ohi plant in Fukui Prefecture are the only ones in the country currently online. Once they are idled for regular inspection in September, no nuclear reactors will be operating in Japan.

## Extending the 40-year limit - not so easy

### Extending reactor life can be challenge

[http://www3.nhk.or.jp/nhkworld/english/news/20130708\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20130708_30.html)

Japan's utility companies with aging nuclear reactors face an uphill battle to clear requirements under newly established rules.

The new rules, implemented on Monday, limit reactor operations to 40 years. There is a 20-year extension option if certain conditions are met.

**A special inspection will be necessary if power companies want to extend reactor service.**

**The inspection calls for ultrasound tests on welds and other parts inside the reactors. Concrete samples taken from the container vessel must also undergo tests for strength and shielding ability.**

After completing the tests, utilities must file an application for extension with the Nuclear Regulation Authority.

In Japan there are 7 reactors running for more than 37 years. Those operators will have to apply by July 2015.

Meeting the extension requirements will not be easy. Installing new electric cables is one example.

The 13 reactors that came on stream before 1979 use electric cables coated with flame-retardant paint. New rules say in principle the actual cables must be non-flammable.

Power companies say replacing extensive cable systems would be labor-intensive and costly.

## These standards are only the bare safety minimum

### Editorial: New regulations should remove 'safety myth' of nuclear plants

<http://mainichi.jp/english/english/perspectives/news/20130708p2a00m0na006000c.html>

New safety regulations on nuclear reactors came into force on July 8, two years and four months after the outbreak of the nuclear crisis at the tsunami-hit Fukushima No. 1 Nuclear Power Plant. Accordingly, power suppliers applied with the Nuclear Regulation Authority (NRA) for safety inspections on their idled reactors that they intend to restart.

The enforcement of the new regulations should mark **the first step toward ending the "myth of infallible safety" of nuclear power stations.**

Nevertheless, there are worries about whether the government and the electric power industry can truly break away from their long-held belief that nuclear plants are absolutely safe. Utilities are apparently trying to reactivate their idled nuclear reactors without implementing sufficient safety measures.

For example, utilities are attempting to set up only temporary emergency response facilities at many of their nuclear plants. Such facilities are supposed to serve as bases for a response to accidents at nuclear power stations. Moreover, few nuclear plants are equipped with filtered ventilation systems to remove radioactive substances from exhaust air.

If power suppliers were to be thinking that they only need to superficially create necessary systems, it would mean their safety culture has remained unchanged since before the Fukushima nuclear accident. Japanese power companies have come under fire from officials of nuclear regulatory bodies overseas for leaving safety measures entirely to the national government. **The government's safety regulations are just the minimum standards.** The risk of nuclear plant accidents cannot be reduced unless power suppliers try to enforce stricter standards in efforts to enhance safety of their nuclear plants.

Each utility's safety culture cannot be evaluated in light of the government's safety regulations, but will largely determine whether safety can be ensured at their nuclear power stations. The NRA authorized the continuation of operations at the Oi Nuclear Power Plant owned by Kansai Electric Power Co. (KEPCO) last week. At the time, however, the NRA criticized KEPCO for implementing safety measures little by little in a bid to meet the bare minimum standards. If the utility continued such a practice, it could not gain confidence from the public.

Worries remain about the response by the government and utilities to serious accidents at nuclear power complexes. Under international standards, nuclear plants must have five layers of protection, including countermeasures against natural disasters. In sharp contrast, the Japanese government as well as domestic power companies had not implemented such thorough safety measures. **It goes without saying that the government and utilities must improve their safety measures at nuclear plants to meet international standards, but have failed to do so.**

The NRA has set new guidelines for anti-disaster countermeasures at nuclear power stations, under which priority zones for such measures have been expanded from areas within a radius of 8-10 kilometers from nuclear plants to 30 kilometers. However, the Fukui Prefectural Government, which hosts the Oi plant, is still revising a nuclear disaster plan to meet the new regulations. Even local bodies that have already revised their nuclear disaster plans have failed to clarify how to evacuate local residents and when they should advise residents to take iodine tablets to protect their thyroid glands in cases where radioactive substances leak from nuclear plants.

**The government is desperate to restart idled nuclear reactors,** but must keep in mind that the new safety regulations have an important role of screening dangerous nuclear plants. Specifically, the government regulator must strictly abide by the principle of decommissioning reactors after they are in operation for 40 years, reflect new knowledge of nuclear power in existing reactors and proactively decommission aging reactors. The same principle should apply to nuclear power stations vulnerable to earthquakes and tsunami, such as those suspected of being situated just above active faults.

Both the NRA and power companies should clearly show how far they have reduced the risks of nuclear plants in this quake-prone country in the two years and four months since the disaster.

### **World's 'toughest nuclear safety standards' take effect**

<http://www.japantimes.co.jp/news/2013/07/08/national/worlds-toughest-nuclear-safety-standards-take-effect/#.Udsxy6xSb9k>

by Miya Tanaka

Kyodo

Japan on Monday ushered in what regulators call the world's toughest safety standards for atomic power plants, determined to prevent another disaster like the March 2011 meltdowns at Tokyo Electric Power Co.'s Fukushima No. 1 complex.

But the Nuclear Regulation Authority, power utilities and the government still have much to do to reassure the public that the country is now ready to shift back into high gear and bring its idled reactors back online.

Under the new standards, reactors will be equipped with dozens of additional functions that hadn't been required in the past to deal with various situations, including reactor core meltdowns, tsunami hazards and acts of terrorism.

"We have worked to create the world's toughest regulatory standards . . . and I think we have been able to make something close to what we have aimed at," NRA Chairman Shunichi Tanaka told reporters after the new safety requirements were finalized on June 19.

But when it comes to enforcing the regulations, doubts linger as to whether the NRA, a fledgling entity launched last September, has sufficient manpower and capabilities to carry out stringent safety assessments of reactors at a time when utilities are lining up to get their facilities checked as quickly as possible.

Whereas the NRA has readied three teams consisting of around 80 people in total, including staff from its technical support organization, the reactors in line for safety examinations totaled 10 on Monday. More applications are expected.

An NRA official did not mention how many reactors the teams can concurrently handle and said the agency has no choice but to "do its best" with its current manpower.

Each assessment process could take at least around six months, and regulators are likely to be put to the test as they confront nuclear power plant operators that may be looking for chances to water down the regulations.

Tanaka said the NRA is different from the now-defunct Nuclear and Industrial Safety Agency, which was criticized as lacking teeth since it was overseen by the same ministry responsible for promoting nuclear power, stressing that the new agency's independence is legally guaranteed.

But he admitted that the staff, many of whom come from NISA, will have to strive to improve their expertise to conduct strict safety assessments, while adding that he also wants to see a change in the mindset of the plant operators toward safety.

During a recently ended process to check whether the country's only two online reactors have no serious problems under the new regulations, the NRA expressed disappointment with the behavior of Kansai Electric Power Co.

"The operator looked as if it was trying to find the minimum line for meeting the safety standards. . . . I personally don't think the company will receive a passing mark in terms of awareness of safety goals," one of the five NRA commissioners, Kayoko Nakamura, said.

According to the NRA, one of the major challenges in Japan is to nurture a safety culture — but there is apparently no quick remedy.

"It may take quite a long time, but we hope to make efforts on a daily basis because it will be difficult to secure safety in a real sense unless society, including operators, has such an awareness," Tanaka said at a separate press conference earlier in the month.

Once reactors are confirmed to be satisfying the new regulations, obtaining local consent will hold the key to actually bring the units back online.

Prime Minister Shinzo Abe's government has said it will "do its utmost" to secure the approval of local governments hosting the facilities and other stakeholders to restart reactors that are confirmed safe enough.

But how utilities will get the final go-ahead for the restart of reactors is vague, leaving room for confusion as local governments are reluctant to take all the responsibility for making a decision on the sensitive issue.

An official from Ehime Prefecture, which hosts a reactor that could pass the NRA's safety review at an early date, said, "Prospects are unpredictable because the government has not shown how it will decide on the restart of reactors that have passed the examination."

While lawmakers in the ruling Liberal Democratic Party from electoral districts hosting atomic power plants have expressed hope that reactors will be restarted quickly, Taro Kono, a rare antinuclear figure inside the LDP, warned during a meeting of lawmakers: "Restarting reactors will not be so easy. Winning the approval of local people will probably take quite a long time."

July 9, 2013

## NRA "under the gun"

### **New strict safety standards put nuclear watchdog to the test**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201307090071>

Japan's nuclear watchdog, set up after the Fukushima disaster, is under the gun now that the new safety standards it calls the toughest in the world took effect on July 8.

The Nuclear Regulation Authority will start safety screenings based on the new standards for nuclear plants, a precondition for restarting reactors that have remained offline after the accident at the Fukushima No. 1 nuclear power plant in March 2011.

Kansai Electric Power Co., Kyushu Electric Power Co., Shikoku Electric Power Co. and Hokkaido Electric Power Co. on July 8 applied to the NRA for restarting 10 reactors at five plants. Kyushu Electric plans to file an application on July 12 to reactivate two additional reactors.

Safety screenings are expected to take about six months. NRA officials have yet to decide which of the reactors they will examine in the first round of screenings.

Electric power companies, saddled with losses from the high fuel costs for thermal power generation, are eager to restart reactors as soon as possible to improve their earnings.

"We want to bring at least one reactor back online before winter arrives," said Osamu Sakai, executive vice president of Hokkaido Electric, which applied to restart three reactors at its Tomari plant on the northernmost island of Hokkaido.

The ruling Liberal Democratic Party has long been a champion of nuclear energy and a guardian of industry. The administration of Prime Minister Shinzo Abe is pushing to restart idle reactors. Currently 48 of the nation's 50 reactors are offline.

"The government will work as one to realize the reactivation of reactors as soon as possible," Abe said.

Some LDP members have called for expanding NRA staff to speed up the screening process.

The NRA, which was set up to reform the cozy ties between nuclear regulators and businesses, said it does not plan to comply because **high levels of expertise are required.**

"The true value (of the safety standards) will depend on whether we can inject life into them during the course of safety screenings," said NRA Chairman Shunichi Tanaka, who has called the standards the strictest in the world.

Tanaka also said the NRA, which was granted the same degree of independence as the Fair Trade Commission, will not take the bottom lines of electric power companies into consideration when conducting safety screenings.

But he said the screenings will be carried out "**as efficiently and speedily as possible.**"



The NRA was established under the Environment Ministry in September by integrating the Nuclear and Industrial Safety Agency (NISA), part of the industry ministry, and the Nuclear Safety Commission, under the Cabinet Office.

The NISA was criticized for acting like a “slave” to the electric power companies in a report compiled by the Diet panel that investigated the Fukushima nuclear disaster.

Eighty people, mainly officials in the NRA secretariat, will be responsible for safety screenings.

Many of the current NRA staff conducted similar screenings for the NISA. But the screenings will be substantially different because the safety standards have been overhauled.

The new standards have strengthened earthquake and tsunami protective measures based on lessons taken from the magnitude-9.0 Great East Japan Earthquake and subsequent tsunami that crippled the Fukushima No. 1 nuclear plant.

The standards have also enhanced measures to deal with catastrophic accidents. Three reactors at the Fukushima No. 1 plant experienced meltdowns after cooling capabilities were lost when the disaster knocked out its backup emergency power generators.

## Q & A about safety screening

### **News Navigator: How will nuclear reactor safety evaluations proceed?**

<http://mainichi.jp/english/english/perspectives/news/20130709p2a00m0na001000c.html>

Four power companies have applied to the Nuclear Regulation Authority (NRA) for safety evaluations necessary to restart 10 nuclear reactors. The Mainichi answers common questions readers may have about these evaluations.

Question: What was the situation like on the first day of applications?

Answer: July 8 was the first day of applications, and people from power companies arrived at the NRA's building in Roppongi, Tokyo, carrying thick binders full of application papers. The application for each reactor filled some thousands of pages detailing the unit's equipment and giving descriptions of safety

measures taken by the power companies. Three teams at the NRA comprising a total of 80 people have begun their evaluations.

Q: How will the evaluations proceed?

A: For the sake of transparency, they are to be made public over the Internet. The evaluations will be mainly document-based, but there could also be on-site visits to check for fault lines or other problems. Each evaluation team will simultaneously look at multiple applications, but it is still expected to take around half a year before the first evaluation of any power plant's reactors is complete.

Q: Which applications are the evaluators looking at first?

A: The NRA has not said which evaluations it is looking at first, but it did say it would "depend on the level of completion" of the applications.

At first people from at least one power company had expressed readiness to get in line from the night before the first day of applications in a bid to gain priority. However, the NRA made a quick change of plans before the day of submissions, saying all power companies that contacted them by the end of last week would be treated as having submitted their applications at the same time. Because of this, there were no lines of waiting power company employees.

The NRA is considering the 10 reactors that applied on July 8 as the first application "group." The No. 3 and 4 reactors of Kyushu Electric Power Co.'s Genkai Nuclear Power Plant, which plan to apply on July 12, are also expected to be added to the first group. A deadline for submissions for the first group has not been decided yet, but any reactors that are classified into the "second group" will face large delays before they can potentially be restarted. To avoid such a delay, Tokyo Electric Power Co. is in a rush to apply for the No. 6 and 7 reactors of its Kashiwazaki-Kariwa Nuclear Power Plant.

Q: Will the power companies be able to restart their reactors if they pass the safety evaluations?

A: They still need the agreement of local governments to restart the reactors. The agreement of local bodies that host a nuclear plant has been necessary since before the Fukushima disaster. However, more neighboring municipalities are demanding an equal say since zones where anti-nuclear disaster measures must be taken have been expanded from areas within a radius of 8-10 kilometers from nuclear plants to 30 kilometers. Furthermore, as of the end of last month, 15 percent of municipalities within these zones did not have nuclear disaster evacuation plans set up, so there are still policy problems that remain even if

the reactors pass their evaluations. (Answers by Takuji Nakanishi, Tokyo Science & Environment News Department)

## Fault under Ohi not forgotten

### Nuclear regulators to study fault at Ohi plant

[http://www3.nhk.or.jp/nhkworld/english/news/20130709\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20130709_02.html)

Japanese nuclear regulators say they will study a fault running beneath the Ohi nuclear plant in Fukui Prefecture late this month to determine whether it is active. Ohi is Japan's only operational nuclear plant.

The Nuclear Regulation Authority said on Monday a team of its officials and outside experts will conduct a third examination.

Experts conducted 2 inspections last year, but opinions on the status of the fault remain divided.

The fault runs beneath a device that takes in sea water to cool the reactors.

The plant's operator, Kansai Electric, also studied the fault. The company announced on July 1st that its investigators had concluded that the fault is inactive.

They reached the conclusion after digging a trench about 70 meters long and 40 meters deep near the plant's No. 3 reactor and examining the geology.

Japan's nuclear regulators last month gave permission for the utility to keep the plant online until a safety inspection scheduled for September.

But they may tell Kansai Electric to suspend operations at the No. 3 and No. 4 reactors if they determine that the fault is active.

## Safety measures not implemented yet

### Nuclear reactors awaiting restart clearance still in midst of safety measure preparation

<http://mainichi.jp/english/english/newsselect/news/20130709p2a00m0na014000c.html>

As new nuclear safety regulations touted as the world's toughest went into effect in Japan on July 8, power companies applied for safety assessments of nuclear reactors at five power plants by the country's nuclear regulatory body.

Having seen fuel costs for thermal power stations rise since their nuclear reactors were stopped following the outbreak of the nuclear disaster at Tokyo Electric Power Co.'s Fukushima No. 1 Nuclear Power Plant, the four utilities -- Hokkaido Electric Power Co., Kansai Electric Power Co., Shikoku Electric Power Co. and Kyushu Electric Power Co. -- are aiming for the earliest possible restart of their nuclear reactors, explaining they have taken "all conceivable safety measures."

Of the 10 reactors in question, the No. 3 reactor at Shikoku Electric's Ikata Nuclear Power Plant is believed to be the closest to reactivation. With no active geologic faults on the plant's grounds, safety measures can be instituted at a relatively smooth pace.

"The reactor satisfies regulatory standards," stated Shikoku Electric's Managing Director Susumu Tanikawa, who submitted the 6,000-page application to the Nuclear Regulation Authority (NRA).

However, safety measures at many of other nine reactors are still on their way to implementation. For example, with the exception of Ikata Nuclear Power Plant, none of the nuclear power plants for which applications were submitted have quake-proof emergency facilities. The seismic-isolated emergency building at the Fukushima No. 1 nuclear plant has played a major role in efforts to bring the disaster under control, and such facilities are required at nuclear power stations under the new safety regulations.

Hokkaido Electric explained that rooms at the No. 1 and No. 2 reactors would be used temporarily as emergency response rooms in case operations resume at Tomari Nuclear Power Plant's No. 3 reactor, with the expectation that neither of the former would be reactivated until construction of a new quake-proof emergency facility is completed in March 2014.

Meanwhile, Kansai Electric said conference rooms at its Takahama and Oi nuclear plants would be used as substitutes for full-fledged emergency facilities, and Kyushu Electric is aiming to build a makeshift one for its Sendai Nuclear Power Plant by September.

Also of great interest are power companies' estimates of maximum tsunami elevation near their nuclear plants. Tsunami are not expected to be a problem for Sendai Nuclear Power Plant, because the complex is located at a high enough elevation. The Fukui Prefectural Government, meanwhile, predicts that Takahama Nuclear Power Plant is at risk of facing tsunami up to 3.74 meters high, which would flood the plant. Although the plant's operator, Kansai Electric, noted in its application to the NRA that "analysis was needed," it did not change its original prediction of maximum tsunami at 2.6 meters.

Hokkaido Electric previously predicted tsunami to reach a maximum 9.8 meters at its Tomari Nuclear Power Plant, but revised the figure downward to 7.3 meters, citing the ability of boulders along the shore in front of the complex to weaken the impact of tsunami. There was also a possibility that levee design would be found problematic because of the elevation of the plant, but the utility concluded that a review of the design was unnecessary. This may lead to doubts about the company's calculations.

Active geologic faults pose the biggest challenge for reactor restarts. The new safety standards prohibit the installation of essential facilities above active faults, citing the difficulty in preventing damage. Because members of an NRA investigation team are divided on whether a fault that intersects an emergency seawater intake channel at Oi Nuclear Power Plant is active or not, the agency plans to hold off on a safety assessment at the plant until it reaches a consensus. The NRA has also pointed out that it needs to collect additional data on Takahama Nuclear Power Plant, which will undergo scrutiny in the agency's assessment.

Reactor type and the number of years a reactor has been in operation have been determining factors in the application process. All 10 reactors in question are pressurized water reactors (PWRs) and have been in operation for a relatively short time at 30 years or less. Of the 50 reactors nationwide, 24 are PWRs, which have been given a five-year grace period for the installment of vent filters that eliminate radioactive materials. Meanwhile, the other 26 reactors, including the reactors at the Fukushima No. 1 Nuclear Power Plant, are boiling water reactors, and have not been given a similar grace period. (By Ei Okada, Science and Environment News Department)

## Risks posed by cluster of reactors not taken into account

### **EDITORIAL: NRA must assess risks posed by a concentration of reactors**

<http://ajw.asahi.com/article/views/editorial/AJ201307090036>

New regulatory standards for nuclear power plants that have just taken effect are considerably tougher than the old safety criterion in terms of requirements concerning facilities and equipment.

But some important issues have not been addressed, such as the safety risks posed by a cluster of nuclear reactors at plural power plants located within a relatively narrow area.

The Nuclear Regulatory Authority needs to avoid the mistake of failing to see the wood for the trees. In addition to focusing on safety assessments of individual reactors, the NRA should **rigorously check the**

**safety of nuclear facilities from a broad perspective** so that the lessons from the Fukushima nuclear disaster will be applied.

The nuclear watchdog needs to regularly review both the standards and the way it conducts safety screenings, thereby ensuring that there is **constant improvement**.

Four electric power companies have applied for safety screenings under the new standards. This is in regard to 10 reactors at five nuclear power plants

The secretariat of the NRA, which is in charge of related administrative work, has become an independent regulatory agency and is no longer under the supervision of the Ministry of Economy, Trade and Industry. Its ability and commitment to perform its role properly will be tested.

The NRA secretariat should **keep its relationships with utilities in a state of healthy tension** and urge them to implement all necessary safety measures swiftly. To avoid being won over to the side of utilities, the nuclear safety watchdog urgently needs to enhance its 80-strong inspection staff in terms of both quality and quantity.

The new regulatory standards assume that a severe nuclear accident can occur again, causing huge amounts of radioactive materials to be released. Meeting the standards doesn't necessarily mean the total absence of risk.

In March 2011, many Japanese were extremely anxious about whether a string of reactors could go out of control one after another. The crippled Fukushima No.1 nuclear power plant has six reactors, and the Fukushima No. 2 plant, located just 10 or so kilometers away, has four.

Putting aside the chilling scenario of multiple reactor accidents, the release of a large amount of radioactive substances from one reactor would prevent operators and workers from approaching other reactors located nearby.

The NRA has never held serious and detailed discussions about the risks posed by a concentration of reactors in a relatively small area or the existence of more than one reactor within a nuclear power plant.

On July 8, Hokkaido Electric Power Co. applied for safety screenings of three reactors at its Tomari nuclear power plant. On the same day, Kyushu Electric Power Co. applied for examinations of two reactors at its Sendai plant, while Kansai Electric Power Co. did the same for two reactors each at its Takahama and Oi plants. The Takahama and Oi plants are located only about 15 kilometers from each other.

The NRA has a duty to figure out swiftly how to assess the risks involved in operating more than one power plant within a small area and explain its conclusions.

This issue has a direct bearing on evacuation plans. Local governments near nuclear power plants need to work out realistic emergency response plans. It is crucial for the NRA to provide appropriate guidance for their efforts.

After the Fukushima meltdowns, several accident investigation committees gleaned various lessons from the disaster. But **many of the questions raised have yet to be tackled, such as what should be the upper limit of exposure doses for workers responding to emergencies and how the government should support efforts to deal with nuclear crises and disclose related information.**

The Abe administration must not leave the task of sorting out these and other key issues up to the NRA alone. The accident in Fukushima occurred under circumstances created by the ruling Liberal Democratic Party's long-held policy of promoting nuclear power generation.

The administration should act quickly to develop new specific policies based on the lessons learned from the accident.

The government would rightly be accused of acting in a grossly irresponsible manner if it allows utilities to bring offline reactors back on stream without taking this step.

July 11, 2013

## No active fault under Tsuruga, says Japan Atomic Power Co.

### New findings prove no active fault lies under Tsuruga reactor: operator

<http://www.japantimes.co.jp/news/2013/07/11/national/new-findings-prove-no-active-fault-lies-under-tsuruga-reactor-operator/#.Ud76cqxB9k>

Kyodo

Japan Atomic Power Co. said Thursday that the latest findings from its additional geological investigation at the Tsuruga nuclear plant in Fukui Prefecture prove reactor 2 is not located above an active fault, contradicting a recent assessment by the Nuclear Regulation Authority.

"We strongly urge the NRA to hold discussions and sufficiently examine our new findings to reach a new conclusion," Japan Atomic Power President Yasuo Hamada told reporters in Tokyo, adding he hopes to apply for the restart of the reactor.

Japan Atomic Power also said it will file an administrative complaint over an NRA order to assess the possible impact of a loss of coolant in reactor 2's spent-fuel pool in the event that the fault directly beneath the building moves. The complaint procedure is different from taking the matter to court.

According to the company's latest findings, three faults studied by the NRA, including one called D-1 running below the reactor, have not moved in the last 120,000 to 130,000 years — a timeline designated to determine whether faults are active — because they have not displaced or deformed a geologic layer that includes volcanic ash deposited 127,000 years ago.

The company claimed it has been able to determine when the ash was deposited.

The NRA had concluded that the three faults are linked and it could not be ruled out that D-1 had moved between 120,000 and 130,000 years ago.

Hamada said the company, while awaiting the outcome of the NRA's review, will make preparations in parallel to apply for a safety assessment for the restart of reactor 2.

But he noted the company is not yet at the stage of announcing when it will file an application, because it needs to make arrangements with the utilities that it sells electricity to.

If the company fails to overturn the NRA's judgment that an active fault lies directly beneath reactor 2, it may have to scrap the unit.

The company has not secured revenue from its electricity wholesale business because all three of its reactors remain offline, part of a nationwide reactor shutdown stemming from the triple-meltdown disaster at Tokyo Electric Power Co.'s Fukushima No. 1 complex triggered by the March 2011 mega-quake and monster tsunami.

Japan Atomic Power is surviving on so-called basic fees from several regional utilities with which it has signed contracts to supply electricity.

"Our situation is significant as it will influence many utilities (holding stock in the firm)," Hamada said.

## Yamasaki fault revisited

### Panel revises chance of quakes at Yamasaki fault

[http://www3.nhk.or.jp/nhkworld/english/news/20130719\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20130719_30.html)

Seismologists say a fault zone in western Japan has what they term a "slightly high" chance of causing a magnitude-7 earthquake.

The government's Earthquake Research Committee released on Friday its latest assessment of the Yamasaki fault zone that straddles Okayama and Hyogo prefectures. They revised estimates made 10 years ago.

The committee says the main, northwestern part of the fault zone has a maximum one percent chance of



causing a magnitude 7.7 earthquake within 30 years.

Further northeast, in Okayama Prefecture, the committee says there's no more than a 0.1 percent chance of a magnitude 7.3 quake in the next 30 years.

The committee defines percentages of between 0.1 and 3 as "slightly high."

The probability of a magnitude 7.3 quake in a southeastern section of the fault zone in Hyogo Prefecture was revised from 5 percent to 0.01 percent.

The committee says the figure was slashed because members learned the area was hit by a quake more recently than previously thought.

The Yamasaki fault is one of 31 seismic zones in Japan that are subject to the committee's assessments. The panel also studies the probability of offshore quakes that could cause a tsunami.

The 2011 earthquake that hit northeastern Japan was a record magnitude 9. The 1995 quake that hit the Hyogo area was magnitude 7.3.

## Video by Akio Matsumura and Arnie Gundersen

### **VIDEO – Nuclear Risks: All It Takes Is One**

<http://akiomatsumura.com/2013/07/video-nuclear-risks-all-it-takes-is-one.html>

Akio Matsumura speaks with nuclear expert and educator Arnie Gundersen about the continued risks of Fukushima. The two come to the conclusion that Tokyo Electric must be removed from the clean-up process. Arnie also discusses his 40 years in the nuclear industry, and how the worst day of that career led him to conclude that a nuclear power plant can have "Forty Good Years and One Bad Day."

July 23, 2013

## Inspection of Tomari plant 1 & 2 delayed

### **Nuclear regulator delays safety inspections**

[http://www3.nhk.or.jp/nhkworld/english/news/20130723\\_44.html](http://www3.nhk.or.jp/nhkworld/english/news/20130723_44.html)

Japan's nuclear regulator says it will not start safety inspections of 2 reactors on the northern island of Hokkaido.

The Nuclear Regulation Authority on Tuesday held its second meeting on safety inspections of reactors that went offline after the 2011 Fukushima nuclear accident.

Operators of 5 nuclear plants this month applied for the inspections as a prerequisite for restarting their reactors under new safety guidelines.

But authority officials said safety measures against serious accidents at the number one and 2 reactors at the Tomari plant have not been assessed properly, and that they are not ready for inspections.

The authority says it will go ahead with inspections of the plant's number 3 reactor.

The officials said they will start inspecting the Takahama plant in Fukui Prefecture after its operator reevaluates possible tsunami damage using stricter estimates.

The regulator plans to inspect the Ohi plant, also in Fukui, after determining whether a fault beneath the facility is active.

The authority also requested reevaluations of faults at 2 other plants in western Japan.

July 26, 2013

## Shimazaki on active fault (Aomori)

### Nuclear regulator hints at possible active fault off Aomori peninsula

<http://mainichi.jp/english/english/newsselect/news/20130726p2a00m0na016000c.html>

Kunihiko Shimazaki, acting chairman of the Nuclear Regulation Authority (NRA), has hinted that a seabed fault off the Shimokita Peninsula in Aomori Prefecture, which is dotted with nuclear fuel cycle facilities, may be active.

In an interview with the Mainichi Shimbun on July 25, Shimazaki, an NRA commissioner who heads the authority's geological fault investigation team, said there is a possibility that the 84-kilometer fault on the edge of the continental shelf is active.

The NRA will make a final judgment on the fault's status after checking the results of an ongoing joint probe by Japan Nuclear Fuel Ltd. (JNFL), operator of the Rokkasho Reprocessing Plant, and other operators.

If the fault is determined to be active, the operations of nuclear fuel cycle facilities on the peninsula are expected to be affected. The fault lying east of the peninsula runs from north to south and could trigger a magnitude-8 level earthquake if it moves.

JNFL and other operators have ruled out the active-fault theory in past safety screenings. But multiple experts have pointed out that the fault may be active, leading JNFL and other operators including Tohoku Electric Power Co., operator of the Higashidori Nuclear Power Plant in Aomori, to jointly reinvestigate faults since last November.

"There is a special structure unseen in other faults," Shimazaki said in the interview, adding the JNFL's past data cannot rule out the possibility that the fault is active. He said officials would reach a decision after examining the results of the joint research by the operators, to be compiled as early as September.

"We need more accurate data to draw a conclusion," he said.

If the fault is deemed active, the operating schedule of the reprocessing plant and the Higashidori power station may be delayed.

Commenting on applications by four electric power companies to restart 12 reactors at six nuclear power plants, Shimazaki, a leading seismologist, said the utilities should be sincere in their efforts to protect nuclear safety.

"We want them to be dead serious about making preparations for a tsunami," he said. He pointed out that nuclear power plant operators varied in their levels of preparedness for future natural disasters.

July 27, 2013

## Oi: Third inspection

### Japan nuke plant checked again for active earthquake fault

JIIJ

<http://www.japantimes.co.jp/news/2013/07/27/national/japan-uke-plant-checked-again-for-active-earthquake-fault/#.UfP6fKxSb9k>

OI, FUKUI PREF. – Prime Minister Shinzo Abe appears at a news conference in Manila on Saturday..” | KYODOInspectors from the Nuclear Regulation Authority on Saturday started their third on-site survey o check for active faults beneath the Oi nuclear power plant in Fukui Prefecture.

The only two reactors in Japan currently online are located at this plant.

NRA experts conducted inspections at the Kansai Electric Power Co. plant in November and December.

The NRA has given permission to Kansai Electric to continue operating the two reactors — units 3 and 4 — until a mandatory inspection begins in September.

Members of the inspection team are split over whether there is an active fault underneath the plant. In the current inspection, to be carried out through Sunday, the inspectors will check a test trench that Kansai Electric newly dug south of reactor 3.

Earthquake guidelines for nuclear plants ban the construction of crucial facilities above an active fault. The experts are focusing on whether a crush zone known as F-6 is an active fault. The F-6 crush zone, a fractured area in bedrock, runs more than 650 meters beneath a seawater intake channel for emergency cooling for both reactors 3 and 4.

Because Kansai Electric does not know the exact location of F-6, the NRA directed the company to drill the additional test trench.

The NRA may order the two reactors to be shut down before the the periodic checkups if it concludes that the F-6 crush zone is an active fault, officials said.

Kansai Electric has applied for the NRA to screen the two reactors under new safety standards introduced in early July, which is a prerequisite for restarting the reactors following the regular inspection.

The NRA will not begin the screening before reaching a conclusion on the fault survey.

### **Expert team studies fault at Ohi plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20130727\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20130727_27.html)

Japan's nuclear regulator began a 2-day survey of a fault running beneath the nuclear plant in Ohi, Fukui Prefecture, on Saturday.

Scientists and a team from the Nuclear Regulation Authority examined the geology of a trench that was dug near the plant's Number 3 reactor to decide if the fault is active.

The NRA had already conducted 2 inspections since last November. Opinion remains divided on the status of the fault that runs from north to south on the plant's premises.

In the 3rd survey that began on Saturday, the team studied strata of the wall and the fault found on the bottom of a newly dug trench to the south of the Number 3 reactor.

The trench is about 70 meters long and 40 meters deep.

Nuclear Regulation Authority Commissioner Kunihiko Shimazaki said it will not make a judgment right away but will examine the findings in a meeting.

The survey will continue on Sunday.

The fault in question runs beneath pipes that carry sea water to cool the reactors.

The number 3 and 4 reactors may be shut down if the fault is determined to be active. The plant's operator, Kansai Electric, maintains that it is inactive.

The Regulation Authority conducted a safety check of the 2 reactors based on Japan's new guidelines, and gave permission for the utility to keep them online until a safety inspection scheduled for September.

Kansai Electric is applying for safety checks with the aim of continuing operations after September's inspection, but the Regulation Authority has decided not to conduct an assessment until a conclusion is reached on the status of the fault.

July 31, 2013

## What about Mt Fuji, by Akio Matsumura

### Japan's Fault: The Risks of Mt. Fuji's Eruption and Nuclear Power

<http://akiomatsumura.com/2013/07/1550.html>

*by Akio Matsumura*

**What if Mt. Fuji erupts?** The question seems random and provocative, but it is one we should be asking. The Great Tohoku Earthquake that caused the Fukushima nuclear power plants disaster in March 2011 has caused scientists to worry that Mt. Fuji could erupt in the next two years.

Scientists worry that Mt. Fuji, dormant for 300 years, is showing signs it will erupt in the near future. What does this mean for nuclear power safety?

Several indicators – increased pressure in the magma chamber, receding lake water levels nearby, cracks in the crust – signal that the volcano, dormant for 300 years, has been affected by recent seismic activity (Japan Today). A study released July 27 by the National Institute of Advanced Industrial Science and Technology in Japan concluded that Mt. Fuji has erupted 43 times in total over the past 2,000 years, the Yomiuri Shimbun reported.

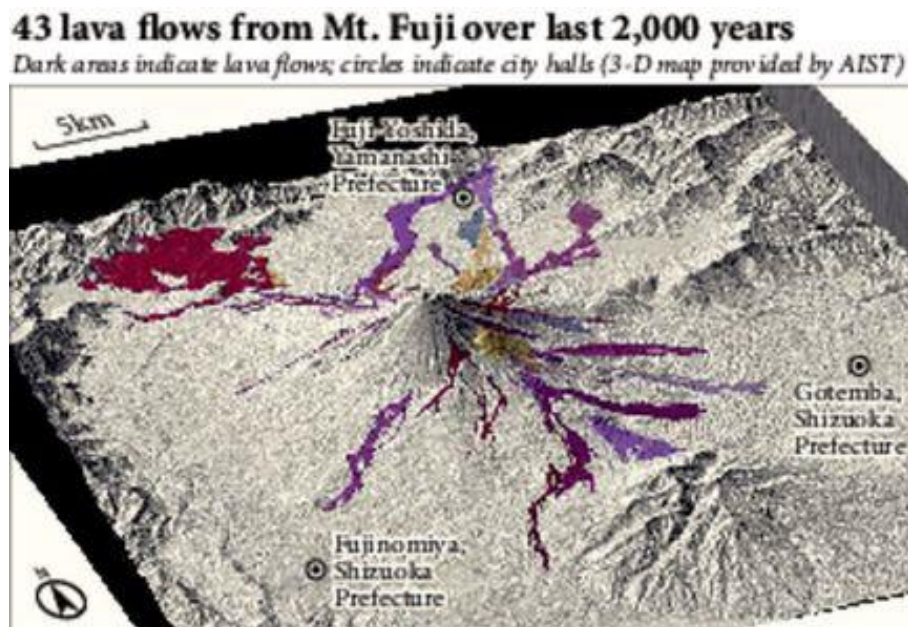
There is a strong precedent for large earthquakes ( $>M9.0$ ) causing volcanic eruptions within three years:

- December 26, 2004 at Sumatra, Indonesia. Earthquake  $M9.2$  – Talang Volcano erupted March 12, 2005. And Tangkuban Perahu at West Java, Indonesia erupted March 13, 2005.
- March 27, 1964 at Alaska, USA. Earthquake  $M9.2$  – Redoubt Volcano erupted January 24, 1966.
- May 22, 1960 at Valdivia, Chile. Earthquake  $M9.5$  – Cordón Caulle erupted May 24, 1960.

**No one can predict** with accuracy when an eruption will occur, but to ignore the possibility that an eruption might occur — whether in 1, 5, 20, or 100 years — is dangerous and irresponsible.

Some will argue that drawing attention to an unpredictable volcanic eruption near a nuclear plant – an unprecedented situation – is alarmist. I say it is responsible. Nuclear power is a reality, but so are earthquakes, eruptions, and other natural and human disasters. Governments and utility companies should be realistic about the possibility that 10- or 100-year disasters can cause major nuclear accidents. They should explain to citizens the risks they face in exchange for electricity. The nuclear debate to this point has been incomplete.

My great concern is that the government and scientists might say the eruption of Mt. Fuji is beyond prediction, just as they did regarding mega-earthquakes and tsunamis when constructing the Fukushima nuclear power plants. Especially because nuclear power plants are seated in the shadow of Japan's iconic volcano.



Geological map of Mt. Fuji c.1968. During a large-scale eruption on the eastern slope around 50 A.D., lava reached as far as about 700 meters above sea level, which is near Gotemba, Shizuoka Prefecture, where many lodging facilities are located today. The new geological map, revised for the first time in 45 years, is scheduled to be completed this fiscal year and is expected to be incorporated into municipal evacuation plans. (Yomiuri Shimbun)

I am deeply worried about the Hamaoka Nuclear Power Plant located in Omaezaki city, Shizuoka Prefecture. On May 6, 2011, Prime Minister Naoto Kan requested the plant be shut down as an earthquake

of M8.0 or higher is estimated to be 87 percent likely to hit the area within the next 30 years. As of today, the spent fuel rods should be kept in the pool for another three years or so.

One need not be a scientist to see that the explosion of steam, water, ash, and rock could cause a power loss to a nuclear power plant and disrupt the cooling system in the nuclear pressure and containment vessels. An eruption would continue to produce ash and rock for several weeks, possibly preventing emergency repairs.

I understand that the safest measure in the case of an incident is to remove the spent fuel rods in the pool, but it is a tedious and time-consuming process to remove them. And then the ultimate question: where do we put them? Has Japan considered how many nuclear power plants around Mt Fuji should be considered at risk? We should not underestimate that decommissioning a nuclear power plant takes about 50 years.

**All nuclear reactors should be phased out**, said former U.S. Nuclear Regulatory Commission Chairman Gregory Jaczko in April 2013. Dr. Gordon Edwards, a well respected nuclear expert, helped us explain: “[Jaczko] has arrived at a very basic realization: every potentially dangerous machine should have an emergency “off” switch that shuts everything down completely. And nuclear power reactors don’t have one. So, he concludes, all power reactors should be phased out. **But a nuclear power reactor cannot be turned off completely, no matter what the emergency may be.** Talk about a design flaw! Imagine a car that can’t be stopped, or a fire that cannot be put out.”

Japan has already constructed 54 nuclear power plants; we cannot beat the probability of a bad combination of a natural disaster and nuclear materials forever.

The main lesson I’ve taken from the Fukushima accident is the permanence of nuclear power. Any nuclear accident, whether through human error, natural disaster, or terrorist attack, will leave us with radiation and other health risks for a minimum of several hundred years.

Japan should be honest with its citizens about the risks they face in exchange for electricity.

August 1, 2013

## Spent fuel perfectly safe, says Japan Atomic Power

### Tsuruga plant operator says spent fuel in storage pool absolutely safe

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201308010057>

The operator of the Tsuruga nuclear power plant in Fukui Prefecture insists that spent nuclear fuel in the storage pool of the No. 2 reactor will not melt down even if the pool cooling water is lost due to an accident.

That possibility is much in the minds of nuclear experts these days because of fears the plant is situated on an active earthquake fault.

Japan Atomic Power Co. was responding to a request from the Nuclear Regulation Authority to study the safety of nuclear fuel stored in the pool in the event of an earthquake caused by the fault.

The NRA, the government's nuclear industry watchdog, contends the plant would be a ticking time bomb if it goes back online. But Japan Atomic Power, which released its report July 31, has disputed the finding. The NRA in May concluded that an active fault runs directly underneath the No. 2 reactor building. Japan Atomic Power was forced to evaluate what risks that might pose to spent fuel stored in a pool if an accident occurred.

Currently, no fuel is stored in the No. 2 reactor, which has been offline since May 2011. However, around 1,700 fuel assemblies, each comprising a number of fuel rods, have been stored in the pool in the building. According to Japan Atomic Power, even if the cooling water is lost, there is no likelihood of a fuel meltdown. It said that scenario is avoidable because air flowing between the fuel assemblies would serve as a cooling agent. However, it acknowledged that the temperature of the metal pipes that cover the fuel would rise to 420 degrees.

It reasoned that no new measures are warranted.

Japan Atomic Power did not address a scenario in which the fuel assemblies could be displaced due to shaking from an earthquake.

That leaves the door open for the NRA to order Japan Atomic Power to make an entirely new evaluation. On July 16, Japan Atomic Power took issue with the NRA on its judgment regarding the active fault and formally expressed its opposition to the finding.

The latest report was submitted to avoid being slapped with punitive steps for not following the NRA's instructions.

August 3, 2013

## Disaster-preparedness also for non-plant nuke facilities

### Nuclear watchdog to require disaster-readiness checks for non-plant nuclear facilities

<http://mainichi.jp/english/english/newsselect/news/20130803p2a00m0na008000c.html>

The Nuclear Regulation Authority (NRA) will require operators of nuclear fuel processing facilities to undergo checks for disaster-preparedness similar to those imposed on nuclear power plants, officials decided at a meeting on Aug. 2.

The NRA will require public reports from the facilities every five years. It will put the requirement into writing this fall and apply it from December.

Facilities that will be subject to the requirement include spent nuclear fuel reprocessing facilities and mixed oxide fuel (MOX) processing factories. So-called stress tests, used to check for disaster-readiness at nuclear plants, were implemented by the former Nuclear and Industrial Safety Agency after the



Fukushima No. 1 Nuclear Power Plant disaster, but this will be the first time that these tests will be required by law.

The NRA will also require that nuclear power plants calculate the probability of being hit by a major disaster as part of their safety evaluations.

At the meeting on Aug. 2, NRA committee member Toyoshi Fuketa said, "Through the public release of disaster-risk data, it will become possible to compare how much each facility has done to prepare itself against a disaster."

August 4, 2013

## Another earthquake hits Fukushima

### **M6 quake hits northeastern Japan, no tsunami warning issued**

<http://mainichi.jp/english/english/newsselect/news/20130804p2g00m0dm031000c.html>

TOKYO (Kyodo) -- A powerful earthquake with a preliminary magnitude of 6.0 hit parts of Miyagi Prefecture in northeastern Japan on Sunday, the Japan Meteorological Agency said.

No tsunami warning was issued following the 12:28 p.m. quake, which registered upper 5 on the Japanese seismic scale of 7 in the city of Ishinomaki in Miyagi. The quake is considered to be an aftershock of the 2011 quake in eastern Japan, the weather agency said.

Two men were injured in the quake in the prefectural capital of Sendai, according to the city's fire department.

**No fresh abnormalities were reported at the Fukushima Daiichi and Daini nuclear power plants in Fukushima Prefecture, adjacent to Miyagi, according to Tokyo Electric Power Co.**

No abnormalities were reported either at the Onagawa nuclear power plant in Miyagi, Tohoku Electric Power Co. said.

The plant is one of many that have been shut down across the country over safety concerns following the Fukushima catastrophe.

The focus of the quake was in waters off the coast of the prefecture at a depth of 58 kilometers.

Tohoku Shinkansen bullet trains were temporarily halted but East Japan Railway Co., known as JR East, soon resumed operating them.

Some parts of the Tohoku Expressway were closed to vehicle traffic for about an hour, Japan Road Traffic Information Center said.

August 12, 2013

## Postponing students' visit to Japan

### **Radiation fears forced me to postpone Japan visit by U.S. students**

<http://www.japantimes.co.jp/community/2013/08/12/voices/radiation-fears-forced-me-to-postpone-japan-visit-by-u-s-students/#.UgslH6xSab0>

Dear Minister of Education Hakubun Shimomura,

Let me begin by expressing my strong support in principle for the Japanese government's ongoing efforts to increase the number of foreign students in Japan from the current 140,000 to 300,000 students by 2020. This exchange cannot but enrich all participants.

I use the words "in principle" because in April of this year I was forced to make one of the most difficult decisions of my teaching career at the tertiary level: I was forced to recommend to the university authorities where I was employed that they postpone their planned Study Abroad Program in Japan scheduled for the fall of 2013.

While I deeply regretted this recommendation, I honestly felt that in good conscience I had no choice. That is to say, in March 2013 I attended a two-day Fukushima-related medical seminar at the New York Academy of Sciences where I learned, for the first time, the full scope of the ongoing dangers posed by radiation contamination from the Fukushima No. 1 nuclear plant.

This knowledge was compounded by the fact that, upon returning to my home in Yellow Springs, Ohio, I was contacted by a 2012 Study Abroad Program participant who informed me that she had suffered from

such symptoms as vomiting, nosebleeds and recurring headaches, all symptoms typically associated with radiation contamination. I was forced to take action.

True, the student in question made a personal choice to visit the Tohoku region during the individual research period that was part of the Study Abroad Program. Thus, one reasonable response would have been to forbid 2013 students from traveling anywhere north of Tokyo. As I considered this option, however, I could not but recall the warnings given by nuclear and medical experts both inside and outside of Japan concerning the danger of additional major radiation contamination coming from Fukushima No. 1.

Thus, I regretfully came to the conclusion that I could not expose students, especially female students of childbearing age, to the possible danger of radiation contamination, and informed the university accordingly.

Sadly, in the ensuing months the situation at Fukushima No. 1 has only worsened. Only recently Tepco finally admitted that 2.35 billion becquerels of cesium per liter of water, roughly the same as that measured right after the crisis began in spring 2011, has accumulated in groundwater tested around Fukushima No. 1, from where it then seeps into the ocean. Needless to say, this amount of radiation is millions of times higher than Japan's acceptable limit.

With this radiation now spewing uncontrolled into the ocean, it is no longer possible to simply avoid the danger by not traveling to the Fukushima area. That is to say, fish are swimming in an ever more heavily contaminated environment where radiation bio-accumulates in the seafood. Thus the largest fish, which eat the most, often live the longest and swim great distances, become the most contaminated, and it is simply impossible for the Japanese government, or any government, to check every fish caught to ensure its safety.

Another solution I seriously considered was for 2013 program students to become vegetarians while in Japan. However, to my dismay I recently learned, from an article published by the Fukushima Minpo newspaper on Jan. 24, that the Japanese government plans to purchase contaminated rice grown in Fukushima Prefecture (providing it contains less than 100 becquerels/kg) and later sell it nationwide.

I fully realize, Minister Shimomura, that you are not in charge of decisions related to Fukushima No. 1. But as a Cabinet minister, I appeal to you to add your voice to those demanding that effective measures be taken immediately.

One eminently reasonable proposal is for the Japanese government to take complete responsibility for the clean-up operation, given Tepco's demonstrated incompetence. Then, calling on the best expertise from throughout the world, all effective measures, regardless of cost, should be taken to completely stop additional radiation from the disaster contaminating the environment.

Needless to say, these measures should be taken first and foremost to protect the Japanese people themselves. But, additionally, this would allow educators like myself to once again recommend, in good conscience, that foreign students study in Japan.

I long for that day to come.

BRIAN VICTORIA  
Yellow Springs, Ohio

## Gov't to check safety of burying nuclear waste

### Govt. to review safety of nuclear waste disposal

[http://www3.nhk.or.jp/nhkworld/english/news/20130812\\_03.html](http://www3.nhk.or.jp/nhkworld/english/news/20130812_03.html)

Japan's industry ministry will ask a group of experts to reexamine the safety of its plan to bury highly radioactive waste from nuclear power plants.

Officials began selecting disposal sites in the year 2000. But there has been no progress amid public concerns about safety.

**The plan calls for burying nuclear waste in a stable stratum more than 300 meters underground.**

The plan's feasibility was based on a report compiled in 1999 by a government-affiliated organization.

The ministry will set up a working group of experts as early as September to reexamine the plan's safety for the first time in 14 years.

The ministry will ask academics to recommend experts with a neutral view. **The experts will check whether an underground disposal facility will be able to store nuclear waste for a long period of time, even if earthquakes and crustal movements occur.**

They will use knowledge learned from the March 2011 quake and nuclear disaster.

August 14, 2013

## Removing fuel from no.4 pool

## **Insight: After disaster, the deadliest part of Japan's nuclear clean-up**

<http://uk.reuters.com/article/2013/08/14/us-japan-fukushima-insight-idUKBRE97D00M20130814>

By Aaron Sheldrick and Antoni Slodkowski

TOKYO | Wed Aug 14, 2013 3:16am BST

(Reuters) - The operator of Japan's crippled Fukushima nuclear plant is preparing to remove 400 tons of highly irradiated spent fuel from a damaged reactor building, a dangerous operation that has never been attempted before on this scale.

Containing radiation equivalent to 14,000 times the amount released in the atomic bomb attack on Hiroshima 68 years ago, more than 1,300 used fuel rod assemblies packed tightly together need to be removed from a building that is vulnerable to collapse, should another large earthquake hit the area.

Tokyo Electric Power Co (Tepco) is already in a losing battle to stop radioactive water overflowing from another part of the facility, and experts question whether it will be able to pull off the removal of all the assemblies successfully.

"They are going to have difficulty in removing a significant number of the rods," said Arnie Gundersen, a veteran U.S. nuclear engineer and director of Fairewinds Energy Education, who used to build fuel assemblies.

The operation, beginning this November at the plant's Reactor No. 4, is fraught with danger, including the possibility of a large release of radiation if a fuel assembly breaks, gets stuck or gets too close to an adjacent bundle, said Gundersen and other nuclear experts.

That could lead to a worse disaster than the March 2011 nuclear crisis at the Fukushima plant, the world's most serious since Chernobyl in 1986.

No one knows how bad it can get, but independent consultants Mycle Schneider and Antony Froggatt said recently in their World Nuclear Industry Status Report 2013: "Full release from the Unit-4 spent fuel pool, without any containment or control, could cause by far the most serious radiological disaster to date."

Tepco has already removed two unused fuel assemblies from the pool in a test operation last year, but these rods are less dangerous than the spent bundles. Extracting spent fuel is a normal part of operations at a nuclear plant, but safely plucking them from a badly damaged reactor is unprecedented.

"To jump to the conclusion that it is going to work just fine for the rest of them is quite a leap of logic," said Gundersen.

The utility says it recognizes the operation will be difficult but believes it can carry it out safely.

Nonetheless, Tepco inspires little confidence. Sharply criticized for failing to protect the Fukushima plant against natural disasters, its handling of the crisis since then has also been lambasted.

Last week, Prime Minister Shinzo Abe ordered the government to take a more active role in controlling the overflow of radioactive water being flushed over the melted reactors in Units 1, 2 and 3 at the plant.

## GIANT FRAME

The fuel assemblies are in the cooling pool of the No. 4 reactor, and Tepco has erected a giant steel frame over the top of the building after removing debris left behind by an explosion that rocked the unit during the 2011 disaster.

The structure will house the cranes that will carry out the delicate task of extracting fuel assemblies that may be damaged by the quake, the explosion or corrosion from salt water that was poured into the pool when fresh supplies ran out during the crisis.

The process will begin in November and Tepco expects to take about a year removing the assemblies, spokesman Yoshikazu Nagai told Reuters by e-mail. It's just one installment in the decommissioning process for the plant forecast to take about 40 years and cost \$11 billion.

Each fuel rod assembly weighs about 300 kilograms (660 pounds) and is 4.5 meters (15 feet) long. There are 1,331 of the spent fuel assemblies and a further 202 unused assemblies are also stored in the pool, Nagai said.

Almost 550 assemblies had been removed from the reactor core just before the quake and tsunami set off the crisis. These are the most dangerous because they have only been cooling in the pool for two and a half years.

"The No. 4 unit was not operating at the time of the accident, so its fuel had been moved to the pool from the reactor, and if you calculate the amount of cesium 137 in the pool, the amount is equivalent to 14,000 Hiroshima atomic bombs," said Hiroaki Koide, assistant professor at Kyoto University Research Reactor Institute.

Spent fuel rods also contain plutonium, one of the most toxic substances in the universe, that gets formed during the later stages of a reactor core's operation.

#### INADVERTENT CRITICALITY

"There is a risk of an inadvertent criticality if the bundles are distorted and get too close to each other," Gundersen said.

He was referring to an atomic chain reaction that left unchecked could result in a large release of radiation and heat that the fuel pool cooling system isn't designed to absorb.

"The problem with a fuel pool criticality is that you can't stop it. There are no control rods to control it," Gundersen said. "The spent fuel pool cooling system is designed only to remove decay heat, not heat from an ongoing nuclear reaction."

The rods are also vulnerable to fire should they be exposed to air, Gundersen said.

The fuel assemblies are situated in a 10 meter by 12 meter concrete pool, the base of which is 18 meters above ground level. The fuel rods are covered by 7 meters of water, Nagai said.

The pool was exposed to the air after an explosion a few days after the quake and tsunami blew off the roof. The cranes and equipment normally used to extract used fuel from the reactor's core were also destroyed.

Tepco has shored up the building, which may have tilted and was bulging after the explosion, a source of global concern that has been raised in the U.S. Congress.

The utility says the building can withstand shaking similar to the quake in 2011 and carries out regular structural checks, but the company has a credibility problem. Last month, it admitted that contaminated water was leaking into the Pacific Ocean after months of denial.

The fuel assemblies have to be first pulled from the racks they are stored in, then inserted into a heavy steel chamber. This operation takes place under water before the chamber, which shields the radiation pulsating from the rods, can be removed from the pool and lowered to ground level.

The chamber is then transported to the plant's common storage pool in an undamaged building where the assemblies will be stored.

Tepco confirmed the Reactor No. 4 fuel pool contains debris during an investigation into the chamber earlier this month.

Removing the rods from the pool is a delicate task normally assisted by computers, according to Toshio Kimura, a former Tepco technician, who worked at Fukushima Daiichi for 11 years.

"Previously it was a computer-controlled process that memorized the exact locations of the rods down to the millimeter and now they don't have that. It has to be done manually so there is a high risk that they will drop and break one of the fuel rods," Kimura said.

Under normal circumstances, the operation to remove all the fuel would take about 100 days. Tepco initially planned to take two years before reducing the schedule to one year in recognition of the urgency. But that may be an optimistic estimate.

"I think it'll probably be longer than they think and they're probably going to run into some issues," said Murray Jennex, an associate professor at San Diego State University who is an expert on nuclear containment and worked at the San Onofre nuclear plant in California.

"I don't know if anyone has looked into the experience of Chernobyl, building a concrete sarcophagus, but they don't seem to last well with all that contamination."

Corrosion from the salt water will have also weakened the building and equipment, he said.

And if another strong earthquake strikes before the fuel is fully removed that topples the building or punctures the pool and allow the water to drain, a spent fuel fire releasing more radiation than during the initial disaster is possible, threatening about Tokyo 200 kilometers (125 miles) away.

When asked what was the worst possible scenario, Tepco is planning for, Nagai said: "We are now considering risks and countermeasures."

(Corrects spelling of Hiroshima in second paragraph.)

(Additional reporting by James Topham and Mari Saito; Writing by Aaron Sheldrick; Editing by Raju Gopalakrishnan)



August 20, 2013

## Active? Not active?

### **NRA experts agree fault found in test trench south of Oi nuclear plant is not active**

<http://mainichi.jp/english/english/newsselect/news/20130820p2a00m0na015000c.html>

Experts from the Nuclear Regulation Authority (NRA) have shared the view that the fault found in a test trench dug to the south of the Oi Nuclear Power Plant in Fukui Prefecture is not active.

The consensus was reached while the research team of NRA experts discussed on Aug. 19 whether the so-called "F-6 crush zone" that crosses an emergency water intake channel, a key facility at the nuclear complex, is an active fault.

Some of the experts expressed their cautious views that the fault is part of the F-6 fault, but it has become possible that the team of experts would conclude that the fault is not active at their meeting to be held as early as September.

Kansai Electric Power Co. applied with the NRA for safety screening of the Oi Nuclear Power Plant as a step toward reactivating the reactors there after regular inspections in September. But the NRA has put the screening on hold until after determining whether the fault is in fact active. If the NRA endorses the experts' view that the fault is not active, it will likely resume the screening process for the nuclear power station.

The emergency water intake channel is designed to send water necessary to cool down the reactors for the No. 3 and No. 4 units at the nuclear complex. It is forbidden to build a key facility right above an active fault, and therefore whether or not the F-6 fault is active has been a key factor in deciding whether to give the green light for the reactivation of the reactors.

The research team of experts conducted a survey last year of a test trench, or the "Daibahama" trench, dug near the northern fringe of the premises of the nuclear complex, as well as other facilities. But the

experts were divided over whether the trench is an "active fault" or a "landslide." Another test trench called the "mountaintop trench" was dug near the emergency water intake channel, but no layers of earth that could be used to estimate active periods of the fault were left there. Therefore, the NRA instructed Kansai Electric to dig a trench on the south side of the premises of the nuclear complex as one of a few research points where old layers of earth remain.

During the meeting held on Aug. 19, the experts shared the view that the crush zone at the south side trench was not an active fault that otherwise needs to be taken into account for seismic-resistant design based on data analysis of volcanic ash and other materials in the layers.

Kansai Electric insisted that the crush zone is part of the F-6 fault. In their response, multiple NRA experts expressed their cautious view that it could not be determined whether the crush zone is part of the F-6 fault due to a lack of data.

The research team decided to discuss the issue again at their next meeting, while urging Kansai Electric to analyze existing data again. On the fact that a final conclusion was not reached, a Kansai Electric official said, "We want them to process our application quickly. We want them to understand how we feel."

August 24, 2013

## IAEA happy with general level of nuke safety...

### Despite Fukushima, IAEA sees global progress on nuclear safety

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201308240019>

REUTERS

VIENNA--Japan may be suffering persistent problems with its wrecked Fukushima nuclear power plant, but the U.N. atomic agency says "considerable progress" has been made globally in the past year to strengthen reactor safety.

In a report prepared for its annual member state gathering, the International Atomic Energy Agency said nearly all countries with nuclear plants had carried out safety "stress tests" to assess their ability to withstand so-called extreme events.

"As a result, many member states have introduced additional safety measures including mitigation of station blackout," said the document submitted ahead of the IAEA's Sept. 16-20 General Conference for its 159 member states.

It was posted on the Vienna-based IAEA's website earlier this month, before Japan's nuclear crisis this week escalated to its worst level since a massive earthquake and tsunami crippled the plant more than two years ago.

Tokyo Electric Power Co., Fukushima's operator, this week said a tank holding highly contaminated water leaked 300 tons of radioactive fluid.

The 2011 Fukushima disaster was the worst such nuclear accident since Chernobyl, the 1986 Soviet reactor explosion which sent radioactive dust across much of Europe.

It put a question mark over the future of nuclear energy also elsewhere in the world. In Europe, Germany, Switzerland and Belgium decided to move away from nuclear to increase their reliance on renewable energy.

The IAEA has said it believes, however, that global use of nuclear energy could increase by as much as 100 percent by 2030 thanks to growth in Asia, including in China and India.

The IAEA, whose mission it is to promote "safe, secure and peaceful nuclear technologies," said on Aug. 21 it viewed the situation at Fukushima seriously and was ready to provide assistance upon request.

The U.N. agency's report, evaluating the implementation of an IAEA nuclear safety action plan adopted by the General Conference in 2011 to help prevent any repeat of the Fukushima disaster, said progress had been made worldwide in key areas.

These included emergency preparedness, assessments of safety vulnerabilities of nuclear plants, and the protection of people and the environment from radiation.

"Since September 2012 ... considerable progress has been made worldwide in strengthening nuclear safety through the implementation of the action plan and of national action plans in member states," the report said.

August 27, 2013

## Stress tests every five years obligatory

### Regulator orders mandatory nuclear safety checks

[http://www3.nhk.or.jp/nhkworld/english/news/20130827\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20130827_16.html)

Japan's nuclear regulator will make it mandatory for plant operators to **regularly test their facilities for resistance against earthquakes and tsunami.**

The move means utilities will be legally obliged to carry out so-called stress tests on plants and fuel facilities using computer analysis **every 5 years.** The Nuclear Regulation Authority agreed on the measure on Monday.

**The operators will also be required to calculate the probability of severe accidents,** like the one at Fukushima Daiichi.

After Fukushima, the government ordered idled nuclear plants to undergo stress tests before they could go back online. The latest move for the first time legalizes those tests for both operating and idled plants.

The regulator plans to introduce the new measures by December after listening to public opinion.

August 29, 2013

## Simple: just imitate nature

### Radioactive water should be diluted, released into ocean: experts

<http://mainichi.jp/english/english/newsselect/news/20130829p2a00m0na005000c.html>

A panel to the Atomic Energy Society of Japan (AESJ) has suggested **diluting and releasing radioactive water from the crippled Fukushima No. 1 nuclear power plant into the ocean rather than keeping it in aboveground tanks.**

The accident investigation board under the AESJ, which has been examining the Fukushima nuclear disaster, compiled its view on the radioactive water leaks from the Fukushima No. 1 nuclear plant, which states: **"It would be realistic to dilute the contaminated water to levels found in the natural world and release it into the ocean after removing radioactive materials other than tritium."**

The panel argues that tritium is generated in the natural world by cosmic rays and is also included in seawater in small amounts. The panel also says the substance is easily discharged from fish and other creatures and is hardly concentrated in their bodies. Therefore, the panel claims, diluting and releasing contaminated water into the ocean would reduce the risk of radiation exposure and environmental pollution through incidental leaks, rather than keeping it in aboveground tanks.

However, such an ocean release is unlikely to take place right away, because TEPCO's water decontamination system called the Multi-nuclide Removal Equipment (ALPS) -- which could remove up to 62 kinds of radioactive substances apart from tritium from up to 500 tons of water each day -- has yet to be put into full operation, while **understanding from local residents and neighboring countries would also be necessary.**

September 2, 2013

## Final verdict on Ohi fault

### Experts: Ohi nuclear plant fault 'not active'

[http://www3.nhk.or.jp/nhkworld/english/news/20130902\\_39.html](http://www3.nhk.or.jp/nhkworld/english/news/20130902_39.html)

A team of experts has agreed that a fault line beneath Japan's only operating nuclear power plant is not active.

The experts and members of the Nuclear Regulation Authority on Monday discussed the fault, known as F-6, at the Ohi plant on the Japan Sea coast in Fukui Prefecture. They have been studying the fault since November.

The plant operator, Kansai Electric Power Company, presented data and argued that F-6 and other faults near the plant moved in ancient times and are not active.

**The experts agreed that F-6 has not moved recently and that there is no possibility of it moving in the future.**

Plant operators are banned from building reactors and other key facilities above active faults.

Commissioner Kunihiro Shimazaki said the regulation authority and the experts will compile a report now that they've reached common understanding.

The authority has investigated fault lines at 4 nuclear power plants in Japan and determined that only one at the Tsuruga plant is active.

The 2 reactors in operation at Ohi will go offline this month for regular checks. All reactors in Japan have to pass stricter safety screenings introduced in July to resume operations.

Kansai Electric Power Company has applied for screening so it can restart the reactors after the checks.

## Safety overlooked as a system, says AESJ panel

### Nuke plant design dependent on power sources a mistake: experts

<http://mainichi.jp/english/english/newsselect/news/20130902p2a00m0na008000c.html>

The design of the crippled Fukushima No. 1 nuclear power plant that took power supply for granted was a "fundamental mistake" leading to the nuclear disaster, the Atomic Energy Society of Japan (AESJ) has announced.

An accident investigation panel under the AESJ, which has been investigating the Fukushima nuclear disaster since June last year, released an outline of its draft final report on the disaster during a meeting held in Tokyo for AESJ members on Sept. 2.

In the draft of its final report, the panel comprising some 50 experts called it a "fundamental fallacy" that "all functions (at the plant) presupposed the presence of power sources" in terms of equipment and other designs.

As to why the isolation condensers (IC) in the reactor building of the plant's No. 1 reactor failed to function, leading to a hydrogen explosion, the panel blamed a lack of awareness and experience among plant workers about the IC functions.

The draft report also cited a lack of preventive measures against the tsunami and severe accidents prior to the disaster as the direct cause of the nuclear catastrophe.

"The disaster could have been averted if measures against the tsunami and severe accidents had properly been implemented," the draft report said, adding, "Experts had been withdrawn in their own narrow fields of expertise and overlooked safety as a system."

With regards to on-site responses to the disaster, the report said, "Although there were some issues, there is a limit to what human beings can do in such extreme situations, and overall their responses were above regular standards."

The panel will also present the draft report at a convention to be held in Aomori Prefecture from Sept. 3, before compiling a final report based on AESJ member feedback by the end of the year.

September 3, 2013

**Too much tritium - Let's change the norms**

## Academic society recommends releasing radioactive tritium into sea

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201309030050>

By SHUNSUKE KIMURA/ Staff Writer

An academic society of nuclear engineers has come up with a proposal to dilute and release radioactive tritium into the sea as part of efforts to deal with the growing stockpile of radioactive water at the wrecked Fukushima No. 1 nuclear power plant.

The recommendation was released Sept. 2 as part of a draft final report of the Atomic Energy Society of Japan's investigation panel into the 2011 Fukushima nuclear disaster.

Tritium, a radioactive isotope of hydrogen, cannot be removed from radioactive water with treatment devices. The draft report said that diluting tritium to natural background levels and releasing it into the ocean was the only viable way of reducing the leakage risk of high-level radioactive substances.

The legal tritium concentration limit that can be released into the environment is 60,000 becquerels per liter, 1,000 times more lenient than that for radioactive cesium. Tritium does not concentrate in the bodies of living organisms because it behaves as a component of water, the investigation panel said.

The Fukushima No. 1 nuclear plant currently holds several tens of times the annual amount of tritium that can be released legally into the environment.

Satoru Tanaka, a nuclear engineering professor at the University of Tokyo who heads the AESJ investigation panel, said **consideration should be given to reviewing the annual release limit.**

"(The Fukushima No. 1 plant) is not a nuclear plant in normal conditions," Tanaka said. "The overall risk should be reduced."

The draft report also criticized Tokyo Electric Power Co., the plant operator, and Japan's nuclear regulatory authorities, saying their insufficient preparedness for a tsunami and other catastrophic situations was the direct cause of the reactor meltdowns at the Fukushima plant.

The draft report was scheduled to be presented to an AESJ fall meeting that opened in Aomori Prefecture on Sept. 3. It is expected to be finalized by year-end.

See previous article :

<http://mainichi.jp/english/english/newsselect/news/20130829p2a00m0na005000c.html>

## Checking

### **Faults examined under nuclear plant in Aomori**

[http://www3.nhk.or.jp/nhkworld/english/news/20130903\\_24.html](http://www3.nhk.or.jp/nhkworld/english/news/20130903_24.html)

Japan's nuclear regulator has begun the 2nd round of an on-site survey at the Higashidori nuclear power plant in northern Japan. The purpose is to determine whether earthquake faults under the compound are still active.

The Nuclear Regulation Authority bans the operation of nuclear plants located on active faults. The Higashidori plant in Aomori Prefecture is one of 4 nuclear facilities where the geology is currently under review.

NRA official Kunihiro Shimazaki and other experts began their 2-day assessment on Tuesday.

The team had concluded in February that 2 faults located under the facility may still be active.

However, plant operator Tohoku Electric Power Company argued that the faults are not active and requested further debate based on new data they collected.

The regulators will examine distortions in the strata at a depth of 10 meters near faults that run north to south under the Higashidori plant compound.

The regulator said in May that a reactor at the Tsuruga plant in Fukui Prefecture, central Japan, sits on an active fault.

As for the Ohi plant in the same prefecture, experts agreed on Monday that a fault under the facility site is not active. Ohi is the only nuclear power plant in the country currently operating.

## Final verdict on Ohi fault (2)



## **No active fault under Oi plant, NRA team says**

Jiji

<http://www.japantimes.co.jp/news/2013/09/03/national/no-active-fault-under-oi-plant-nra-team-says/#.UiWsaH9Sb9k>

A team from the Nuclear Regulation Authority said Monday that no active geological faults exist under the key facilities of the Oi nuclear power station in Fukui Prefecture.

The five-member team reached its conclusion after inspecting the Kansai Electric Power Co. facility from November to July and determining that the "F-6 crush zone" fault under one of the facilities is not active.

NRA Commissioner Kunihiro Shimazaki, who personally led the team, said an effective consensus had been formed and that further discussions will be held before it drafts its report to the NRA. The future talks will involve outside experts, he said.

The No. 3 and No. 4 units at Oi are Japan's only active commercial nuclear reactors. No. 3 was set to be taken offline Monday for a routine checkup and will be followed by No. 4 on Sept. 15, marking only the second time Japan has without atomic power.

To ensure the reactors can be restarted as soon as possible after the checkups, Kansai Electric applied in July for an NRA inspection of the Oi complex under new nuclear safety standards drafted after the Fukushima crisis, which began in March 2011 at Tokyo Electric Power Co.'s Fukushima No. 1 power station in Fukushima Prefecture.

But the new nuclear watchdog hasn't yet started the inspection because it was busy conducting research on faults and crush zones under the Oi plant. It is now known how long the inspection of the Oi plant will take.

## **NRA experts agree 'crush zone' at Oi nuclear plant is not active fault**

<http://mainichi.jp/english/english/newsselect/news/20130903p2a00m0na016000c.html>

Experts from a Nuclear Regulation Authority (NRA) investigative team have agreed that the so-called "F-6 crush zone" that crosses an emergency water intake channel, a key facility at the Oi Nuclear Power Plant in Fukui Prefecture, is not an active fault.

The consensus was reached at a meeting on Aug. 2 of NRA experts. Kansai Electric Power Co., the operator of the nuclear power station, had filed applications with the nuclear watchdog for reactivation, after routine inspections in September, of the plant's No. 3 and No. 4 reactors, the only reactors in the

country online. The NRA, however, put the screening on hold until after it determined whether the fault is in fact active. In line with the consensus among the NRA experts, the nuclear regulators are likely to resume the screening.

The NRA has been conducting research at six nuclear facilities to see whether they stand above active faults, but this is the first time regulators have deemed a suspected active fault inactive.

The emergency water intake channel is designed to send water necessary to cool down the reactors for the No. 3 and No. 4 units at the Oi nuclear complex, and it cuts across the F-6 crush zone that stretches roughly north to south through the premises of the nuclear plant. Under the NRA's new safety regulations, building a key facility directly above an active fault is forbidden, and therefore whether or not the F-6 fault is active has been a key factor in deciding whether to give the green light for the reactivation of the reactors.

At their previous meeting held on Aug. 19, the NRA experts agreed based on age-dating analysis of volcanic ash contained in the geological strata that the fault found in a test trench dug in the southern part of the Oi nuclear station is not active. At the Sept. 2 meeting, the NRA experts concluded that the crush zone in the southern trench and the F-6 fault observed in another test trench called the "mountaintop trench" -- which cuts through the emergency water intake channel -- were active at roughly the same time partly because of similarities in how the strata had slid. Thus, the NRA experts rejected the possibility that the F-6 fault that cuts across the emergency water intake channel is active.

NRA commissioner Kunihiro Shimazaki said, "We have reached a consensus. We now have a certain course of action to take." Nevertheless, because some experts have raised questions about Kansai Electric's assumptions regarding potential dangers to the plant, the NRA experts will continue to discuss the applications for the Oi reactors' reactivation. In addition, the NRA plans to consult with other experts before endorsing the investigative team's view that the F-6 crush zone is not an active fault.

September 4, 2013

## **Fault at Higashidori seems to be active according to NRA**

### **NRA team still seems leaning toward ruling fault under Aomori nuke plant is active**

Jiji, Kyodo

<http://www.japantimes.co.jp/news/2013/09/04/national/nra-team-still-seems-leaning-toward-ruling-fault-under-aomori-nuke-plant-is-active/#.UigvmX9Sb9k>

HIGASHIDORI, AOMORI PREF. – A team of experts from the Nuclear Regulation Authority finished its second study Wednesday of underground crush zones at Tohoku Electric Power Co.'s Higashidori nuclear power plant to determine if they are active faults.

The nuclear watchdog has so far kept unchanged its earlier assessment that the faults under the plant in Aomori Prefecture are active, but NRA Commissioner Kunihiro Shimazaki told reporters the NRA may conduct yet another study before announcing a conclusion.

Shimazaki lead the two-day study of suspected active faults beneath the plant.

Following the first study in December, the team said in May the crush zones under the plant are active faults.

Tohoku Electric claims they are inactive and has performed its own study of the underground crush zones, including boring into them. The two-day study by the NRA viewed the utility's findings.

If they are judged to be active, Tohoku Electric would be forced to decommission the plant's reactor 1.

Even if there are no active faults under key facilities, Tohoku Electric may need to conduct seismic reinforcement work if the NRA concludes there are active faults beneath the premises of the plant.

## **2nd survey at Higashidori nuclear plant ends**

[http://www3.nhk.or.jp/nhkworld/english/news/20130904\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20130904_33.html)

A member of Japan's nuclear power regulator says the result of its second survey at the Higashidori nuclear plant in northeastern Japan will not change its conclusion that faults under the facility appear to be active.

Nuclear Regulation Authority Commissioner Kunihiro Shimazaki was speaking to reporters on Wednesday after the 2-day survey by a panel of experts at the plant in Aomori Prefecture.

In February, the authority compiled a draft report based on its first survey last December in which it said the faults appeared to be active.

On Wednesday the panel investigated a cross section of a trench dug by the plant's operator, Tohoku Electric Power Company, along a fault called F-3.

Tohoku Electric claimed that the faults were not active. The utility has been conducting its own additional survey.

Shimazaki indicated that the authority will examine Tohoku Electric's extra research before compiling a final report.

September 5, 2013

## Ohi steam - Mistakenly opened valve?

### Steam leaks at idling Ohi nuclear power plant

[http://www3.nhk.or.jp/nhkworld/english/news/20130905\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20130905_32.html)

The operator of the Ohi nuclear power plant in Fukui Prefecture says steam leaks occurred in a turbine building of the facility on Thursday. But it says the steam contained no radioactive substances and resulted in no injuries or damage.

Kansai Electric Power Company says **steam leaked at 6 locations from piping near a turbine at the plant's Number 3 reactor.**

The steam rose as high as 3 meters. The utility told 20 workers in the building to evacuate.

The reactor had been shut down for regular safety inspections on Tuesday after running as one of only 2 online reactors in Japan.

The utility says that immediately before an alarm went off, **a worker in a control room mistakenly opened a valve for a pipe carrying steam.** It says the valve was immediately closed and the leak stopped.

September 8, 2013

## Safe Olympics guaranteed...

### Amid radiation worries, Abe says Japan to deliver safe Olympics

<http://mainichi.jp/english/english/newsselect/news/20130908p2g00m0dm019000c.html>

BUENOS AIRES (Kyodo) -- Prime Minister Shinzo Abe said Saturday Japan will deliver on its promise to make the 2020 Summer Olympics a success in a safe environment after the International Olympic Committee picked Tokyo as the host city.

"My heart was pumping (before the announcement) and I am so happy," Abe told reporters. "We will respond to the expectations and support by holding a successful Olympics. I think we conveyed the message that we can hold a safe Olympics."

Having also staged the 1964 Olympics, Tokyo will become the first Asian city to host the Games twice, overcoming concerns about the leakage of radioactive water at the crippled Fukushima Daiichi nuclear power plant that cast a shadow over its bid in the run-up to Saturday's vote.

To ease such radiation worries among wary IOC members, Abe said in Tokyo's final presentation before the vote that "the situation is under control."

Abe said the impact of the leak has been "completely blocked" within an area of 0.3 square kilometers in the sea from the plant, and that radiation levels, even at the maximum, stand at 0.2 percent of the World Health Organization's safety standards for drinking water.

He also said Japan's safety rules for food and water are among the world's most stringent and that the amount of radiation people across the country receive is 1 percent of the domestic standards. "I can assure you that there have never been, and will never be health problems."

The nuclear crisis has shown no signs of abating more than two years after the March 2011 earthquake and tsunami, with the latest revelation of the radioactive leak prompting South Korea to ban fisheries imports from the crisis-hit and surrounding areas.

The Japanese government has decided to step in to help the operator of the plant deal with the leakage, pledging to spend around 47 billion yen.

Tokyo Gov. Naoki Inose also expressed joy, saying he hopes that the Olympics will inject momentum into Japan's recovery from the natural disasters.

"It is what teamwork can do," Inose said. "We won the bid to host the games because we all joined forces." Tokyo lost out in its previous bid in the 2016 race to Rio de Janeiro.

The Olympics could also bring economic benefits to Japan, with Abe expressing hope that the games would be an opportunity for Japan to show the country has recovered and a "trigger" for boosting the deflation-mired economy amid signs of recovery.

"It goes without saying that we will secure enough funds in our budget," Abe said at a press conference with the IOC.

Foreign Minister Fumio Kishida said in a statement that the Japanese government will make utmost efforts to deliver an Olympics that will help promote peace and international friendship through sports.

September 9, 2013

## All safe

### Motegi explains Japan's food and water safe

[http://www3.nhk.or.jp/nhkworld/english/news/20130909\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20130909_27.html)

Japan's trade minister Toshimitsu Motegi says Japanese water and food are safe despite leaks of radioactive water at the disabled Fukushima Daiichi nuclear plant.

Motegi made the comment during a keynote speech in Tokyo on Monday. Attendees included governors from US Midwest states, and Japanese and US corporate executives.

He called the contaminated water leakage the government's most urgent issue. He said the government will spend 47 billion yen, or about 470 million dollars, to settle the problem. He emphasized the government will deal directly with the problem.

Motegi said the leakage is contained within 0.3 square kilometers in the bay off the nuclear plant.

He said radiation levels in water outside the area are lower than the upper limit guidelines for drinking water defined by the World Health Organization.

Motegi said Japan's water and food are safe as they follow one of the world's most stringent food safety standards following the 2011 nuclear accident.

September 14, 2013

## Military flights and nuclear plants

## **Demands grow for ban on U.S. military flights near nuclear plants**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201309140057>

With memories rekindled of a deadly U.S. helicopter crash 25 years ago, Ehime Prefecture is increasing its demands for a ban on all U.S. military flights above or near the Ikata nuclear power plant.

The screening process is under way on Shikoku Electric Power Co.'s application to restart the No. 3 reactor at the plant. But a recent sighting of a U.S. military aircraft flying near the nuclear plant has residents and politicians worried about a possible disaster from the skies.

"Flights above nuclear power plants are dangerous," Ehime Governor Tokihiro Nakamura said. "We want the U.S. forces to follow the rules."

Nakamura made the remark at a news conference on Aug. 9, four days after a U.S. military helicopter from the Kadena Air Base crashed in Camp Hansen in Okinawa Prefecture.

Although a 1999 Japan-U.S. agreement states that U.S. military aircraft should avoid areas near nuclear power-related facilities and commercial airports, critics say U.S. forces have been lax on following the rules.

Nakamura said he had requested legislation for a flight ban even before the Okinawa accident.

"It is an important issue for the safety of residents in my prefecture," he said.

Flights between the U.S. Marine Corps Air Station Futenma in Okinawa Prefecture and the Marine Corps Air Station Iwakuni in Yamaguchi Prefecture include part of the skies over the Shikoku region, where Ehime Prefecture is located.

Ehime Prefecture officials are also concerned about the U.S. military's "Orange Route" flight training course over the region.

Much has been made of the struggles of Tokyo Electric Power Co. and the government to end the crisis at the stricken Fukushima No. 1 nuclear plant.

But adding to the fears in Ehime Prefecture is the deployment in Okinawa Prefecture of the U.S. Osprey, a transport aircraft with a spotty safety record. Just last month, an Osprey crashed near a U.S. base in Nevada and burst into flames. None of the crew members were injured.

In March, Osprey started low-altitude flight training in Japan. Several sightings of the aircraft in Ehime Prefecture prompted the prefectural government to ask the central government to require U.S. forces to strictly adhere to the Japan-U.S. agreement.

But on March 30, immediately after the request, a U.S. P-3C surveillance plane was seen in the skies near the Ikata power plant.

For local residents, it was an unpleasant reminder of what took place on June 25, 1988.

On that day, a large U.S. military helicopter crashed into a mountain about 1 kilometer from the Ikata nuclear plant, killing all seven crew members.

"If a U.S. military plane crashed into the nuclear plant and radioactive materials leaked from the facility, I will not be able to live in my house anymore," said a 61-year-old woman whose home is located 3 kilometers from the Ikata plant. "At the very least, I hope that U.S. aircraft do not fly over the nuclear plant."

The Ikata plant is not the only nuclear facility where U.S. military aircraft have been seen.

In a meeting of the Lower House Committee on Economy, Trade and Industry in June, the government said it confirmed seven cases since fiscal 2007 in which U.S. military aircraft flew over nuclear power-related facilities.

They included the Higashidori nuclear plant in Aomori Prefecture operated by Tohoku Electric Power Co. and the Ningyo-toge Environmental Engineering Center in Okayama Prefecture run by the Japan Atomic Energy Agency.

New regulations for nuclear power plants that took effect in July require electric power companies to establish a secondary control room that can remotely control nuclear reactors in the event of a terrorist attack using aircraft.

However, utilities have a grace period of five years to implement the plan. Shikoku Electric Power estimates the occurrence rate of an aircraft accident hitting a reactor at the Ikata plant is less than once every 10 million years.

A Shikoku Electric Power official said such an accident would not seriously damage the reactors because they are protected by concrete walls more than 80 centimeters thick and by steel containment vessels with a thickness of about 40 centimeters.

Nobuo Komoda, head of a lawyers' group calling for the suspension of operations at the Ikata nuclear plant, disagrees with Shikoku Electric Power's assessment.

"That view is problematic because studies have not progressed in Japan on possible aircraft crashes on nuclear power plants," he said. "The new regulations require electric power companies to establish a secondary control room. But I cannot believe that cooling the reactors from a remote-control room alone can prevent leakage of radioactive materials in the event of an aircraft crash."

Komoda said the secondary control room requirement is insufficient.

In the Kyushu region, screening has also started on applications to restart four reactors at the Genkai nuclear power plant in Saga Prefecture and the Sendai nuclear power plant in Kagoshima Prefecture.

Kyushu Electric Power Co., the operator of those plants, also said the occurrence rate of an accidental aircraft crash on a reactor is less than once every 10 million years.

"We have already confirmed that our measures (to prepare for possible crashes) meet the conditions set by the new regulation standards," said a Kyushu Electric Power public relations officer.

As for the establishment of the secondary control room, "We are now seriously considering it," the official added.

The U.S. military's "Yellow Route" flight training course takes aircraft over Kyushu, although the route does not extend over the two nuclear plants. U.S. forces had previously planned to use the Yellow Route for low-altitude training of the Osprey aircraft.

(This article was compiled from the reports by Teru Okumura, Satoshi Otani and Yo Noguchi.)

September 15, 2013

## Science minister at the IAEA

### Japan's science minister to brief IAEA

[http://www3.nhk.or.jp/nhkworld/english/news/20130915\\_10.html](http://www3.nhk.or.jp/nhkworld/english/news/20130915_10.html)



Japan's Science and Technology Policy Minister Ichita Yamamoto will brief the IAEA on the current situation of contaminated water accumulating at the damaged Fukushima Daiichi nuclear power plant.

Yamamoto will attend the annual session of the International Atomic Energy Agency General Conference scheduled to open on Monday in Vienna.

**The minister plans to explain that the government views the radioactive water problem as the most urgent challenge to be solved at the nuclear facility.**

Plant operator TEPCO estimates that 400 tons of groundwater flows into the basements of the buildings at the plant every day. There it mixes with cooling water and becomes contaminated. It is then pumped out and stored.

The operator says another 200 tons of water filters through a contaminated area and becomes laced with radioactive substances. Then it seeps into the sea.

Yamamoto will explain that the tainted water is affecting 0.3 square kilometers of seawater inside the plant's port. He will say no significant levels of radiation are being detected in waters outside the port.

The minister will note that plant workers have been facing unprecedented challenges in their efforts to deal with contaminated water and decommission the reactors.

**He will call on the IAEA and the world to contribute technology and wisdom to address the nuclear crisis.**

September 19, 2013

## **NRA – One year on**

### **Japan nuke watchdog marks first anniversary, vows safety at Fukushima**

Kyodo

<http://www.japantimes.co.jp/news/2013/09/19/national/japan-nuke-watchdog-marks-first-anniversary-vows-safety-at-fukushima/#.UjqhsX9Sb9k>

Nuclear Regulation Authority Chairman Shunichi Tanaka vowed Thursday to ensure that the Fukushima No. 1 nuclear plant is made safe as the regulatory body marked the first anniversary of its launch.

"The situation at the Fukushima No. 1 plant remains unstable. Every time a radioactive water leakage, a blackout or other trouble occurs, I think of the people, living inconvenient lives in areas where they have been evacuated, getting worried about their hometowns," Tanaka, a native of the city of Fukushima, said in a statement.

“We will do our utmost, with a strong belief that we can and must overcome this issue,” he said.

Some 150,000 people from Fukushima Prefecture still live as evacuees more than two years since the start of the world’s worst nuclear crisis since the 1986 Chernobyl disaster.

The NRA was established on Sept. 19 last year with the government hoping to restore shattered public confidence in nuclear regulation following the Fukushima crisis.

One of the agency’s key features is the greater independence it has been given. Its predecessor lacked teeth as it was a part of the Ministry of Economy, Trade and Industry, which is tasked with promoting nuclear power.

Tanaka described the past year as “groping in the dark” but said he is seeing progress toward the goal of creating a culture of nuclear safety.

“We have made efforts to be transparent, neutral and to make judgments from scientific and technical perspectives. As a result, changes are definitely occurring, although gradually,” he said.

In addition to overseeing the situation at Fukushima No. 1 and measures taken by Tokyo Electric Power Co., the NRA has to assess the safety of other reactors that have been left idle.

The only reactors in Japan that were operating in the past year were switched off for inspection and maintenance earlier this month.

The country will remain with no nuclear power until the reactors satisfy new safety requirements introduced in July.

### **NHK Newsline Features aired on Sept.19, 2013**

<http://www3.nhk.or.jp/nhkworld/newsline/201309192009.html>

...criticised for its unclear response to the water leaks

"it looks like a dual administration by the NRA and the Ministry of Economy, Trade and Industry"

lack of expertise

September 21, 2013

## Genkai nuclear plant shows weaknesses in emergency response

### **Weakness detected in emergency response system at Genkai Nuclear Power Plant**

<http://mainichi.jp/english/english/newsselect/news/20130921p2a00m0na007000c.html>

The Nuclear Regulation Authority (NRA) on Sept. 19 singled out insufficiencies in the emergency response system of the No. 3 and No. 4 reactors at Kyushu Electric Power Co.'s Genkai Nuclear Power Plant in Saga Prefecture.

The insufficiencies, which were specified during a safety review meeting held to discuss the restart of idled nuclear reactors, centered on power supply equipment for a key quake-resistant building.

The NRA pointed out that the problem could compromise efforts to bring the reactors under control in the event of an accident -- and called for measures to be taken accordingly.

The reactors' emergency electrical generators and power switchboards are located in the same position as those at the Fukushima No. 1 Nuclear Power Plant, which was inundated with seawater from the March 2011 tsunami, resulting in a total loss of power and core meltdowns.

The government and the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission have pointed out inadequacies in measures to deal with the potential loss of power. Consequently, new regulatory standards have been implemented for key facilities and equipment, wherein it is specified that several electricity routes must be secured.

Kyushu Electric Power Co. has announced that it will construct alternate facilities to be utilized until the main quake-resistant building is completed in fiscal 2015. On the day that the safety review was held, however, it was noted that only one electricity route existed to connect the alternate facility with

emergency generators -- and that the emergency response equipment could fail if the electricity route were cut off.

"No matter how many emergency generators you supplied, it would be meaningless," an NRA representative commented.

The power company said that it would be looking into rectifying the matter.

September 25, 2013

### **Niigata governor to study TEPCO safety plan**

[http://www3.nhk.or.jp/nhkworld/english/news/20130925\\_39.html](http://www3.nhk.or.jp/nhkworld/english/news/20130925_39.html)

The governor of Niigata Prefecture says he will closely examine a request by Tokyo Electric Power Company, or TEPCO, to approve installation of more safety devices at the Kashiwazaki Kariwa nuclear plant. The installation is a prerequisite for the plant's restart.

TEPCO President Naomi Hirose visited Niigata on Wednesday. He handed Governor Hirohiko Izumida a document seeking advance approval of a plan to install more filter vent systems at the Number 6 and 7 reactors of the plant in Niigata Prefecture on the Sea of Japan.

Such systems are designed to release pressure in containment vessels while limiting massive emissions of radioactive substances from boiling water reactors in emergencies.

Izumida asked Hirose how his utility will notify local residents when using the systems, and how it will minimize people's exposure to radioactive substances.

Hirose said the utility has the necessary safety measures in place. He also pledged efforts to deepen communication with local residents.

TEPCO hopes to restart the two reactors. The plant has seven and is the world's largest nuclear power plant in terms of power output. But the reactors must first be screened under the government's new tough guidelines.

The move to seek prior approval of local communities is based on a safety agreement between the utility and prefectures and municipalities that host nuclear plants.

At their previous meeting in July, Izumida refused to take the document, to protest TEPCO's plan to file for safety screening before obtaining local approval.

September 26, 2013

## Anti-terrorism at nuclear plants

### Police to tighten security at nuclear facilities

[http://www3.nhk.or.jp/nhkworld/english/news/20130926\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20130926_27.html)

Japan's National Police Agency chief has instructed police headquarters nationwide to tighten anti-terror security at nuclear power plants.

Tsuyoshi Yoneda gave the instruction on Thursday at a meeting of about 200 senior officers in charge of anti-terrorism measures.

He said the 2011 nuclear accident at the Fukushima Daiichi plant has disclosed the vulnerability of nuclear-related facilities, raising concerns over terrorist attacks.

The NPA chief stressed the need to hold drills to prepare for such attacks. He said improving the capabilities of anti-terror firearms units is essential in ensuring the safety of the facilities.

After the September 11th terror attacks in the United States, Japanese police deployed security units at 22 nuclear-related facilities across the country to stand guard around the clock.

Since the Fukushima nuclear crisis, police have beefed up security at the facilities. The measures include the addition of machine guns and introducing radiation protection vehicles for police.

## Volcanoes can be important too

### Volcanoes may hamper nuclear plant restart

[http://www3.nhk.or.jp/nhkworld/english/news/20130926\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20130926_05.html)

Japan's nuclear regulator has urged an operator of a nuclear plant on the northern main island of Hokkaido to look further into possible effects of volcanoes.

Officials at the Nuclear Regulation Authority have been examining the safety of 6 nuclear power plants around the country. Utilities are hoping to get them operational again.

On Wednesday, officials from the NRA discussed the possible volcanic effects on these plants based on stricter rules implemented after the 2011 nuclear disaster in Fukushima.

The operator of the Tomari nuclear plant explained that it surveyed 39 volcanoes in a 160 kilometer radius around the plant.

It said even a large eruption would not affect the plant.

But the regulators pointed out that the utility's data is not sufficient and said it should conduct its own survey instead of relying on published research.

They urged Hokkaido Electric officials to study ground movement that accompanies volcanic activity as well as the spread of volcanic ash from past eruptions.

Two of the three reactors at the Tomari plant had already been excluded from the NRA's deliberation due to lack of data. The safety check of the plant could take much longer than the operator expected.

September 28, 2013

## **Adding 4 meters to Hamaoka plant**

### **Utility heightening tsunami breakwater at most vulnerable nuclear plant**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201309280046](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201309280046)

OMAEZAKI, Shizuoka Prefecture--Chubu Electric Power Co. has started work to heighten the breakwater at its Hamaoka nuclear plant by 4 meters to clear a hurdle in its application to restart its reactors.

The 1.6-kilometer-long structure currently stands at 18 meters and is designed to protect the nuclear plant--and its five reactors--from tsunami damage. The Hamaoka plant is widely seen as the nuclear plant at most risk in the event of a powerful earthquake.

The decision to heighten the breakwater came after a Cabinet Office panel released a new estimate in August 2012 that said the maximum height of tsunami could be 19 meters if a major quake strikes the region.

The additional work, which started on Sept. 27, involves welding steel tubes to the top of the breakwater along a 170-meter section on the western edge of the structure. The tubes will later be covered with reinforced concrete.

For the rest of the breakwater, 4-meter-tall steel plates will be installed at the top of the wall.

Chubu Electric intends to strengthen the foundation of the breakwater near the No. 4 and 5 reactors as an additional safeguard.

The utility puts the construction costs of the entire breakwater at 150 billion yen (\$1.52 billion). Completion is expected by September 2015.

Chubu Electric shut down the plant after Prime Minister Naoto Kan made the request in May 2011, two months after the Fukushima nuclear disaster unfolded. Kan cited the high probability of a devastating earthquake hitting the region.

Such a quake along the Nankai Trough, a subterranean trench stretching from Suruga Bay off Shizuoka Prefecture along the Pacific coastline, could strike the region within decades, according to the Cabinet Office's report.

September 30, 2013

## Safety checks on 14,000 items in Monju

### 12,000 plus 2,000 new items checked in Monju

[http://www3.nhk.or.jp/nhkworld/english/news/20130930\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20130930_37.html)

The operator of a trouble-hit prototype reactor has completed safety checks on about 14,000 pieces of equipment that should have been inspected earlier.

The checks included about 2,000 items the operator recently discovered hadn't been inspected.

The Japan Atomic Energy Agency presented its report on the Monju fast-breeder reactor to the Nuclear Regulation Authority on Monday.

Monju, located on the Sea of Japan coast, had been cited for more than 12,000 safety lapses, including some involving equipment that is crucial to safe operation of the reactor. In May, the nuclear regulator ordered the operator to halt preparations for resuming test-runs until it has dealt with the safety issues. The operator subsequently found additional equipment that had not been checked.

The Monju reactor in Fukui Prefecture uses plutonium extracted from spent nuclear fuel to generate power. The reactor has been mostly offline since a coolant leak accident in 1995 and the fall of a fuel exchange device into the reactor in 2010.

Last week, the science ministry drew up a plan to run Monju for 6 years before it will [decide] whether to continue research there.

But a restart of Monju is not likely anytime soon.

This is due to the regulator's order that test-runs cannot be resumed until new maintenance and management systems are in place. Experts are also investigating whether active fault lines run beneath the reactor.

October 2, 2013

## TEPCO must first focus on Fukushima, says NRA

### NRA members critical of TEPCO

[http://www3.nhk.or.jp/nhkworld/english/news/20131002\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20131002_28.html)

Japan's nuclear regulator has decided to begin its assessment of the safety of 2 reactors at one of the plants operated by Tokyo Electric Power Company.

However, in reaching the decision at a meeting on Wednesday, members of the Nuclear Regulation Authority also criticized TEPCO for its handling of the situation at the damaged Fukushima nuclear plant.

TEPCO last week applied for the safety screening of 2 of the reactors at the Kashiwazaki-Kariwa plant in Niigata Prefecture. The screening is required before the idle reactors can be restarted.

At Wednesday's meeting, NRA Chairman Shunichi Tanaka said the regulator will proceed with the safety screening at Kashiwazaki-Kariwa but indicated that it will watch over TEPCO's handling of the Fukushima Daiichi plant.

Tanaka stressed that the issue of radioactive water leaks must be strictly dealt with.

NRA Commissioner Toyoshi Fuketa also said **TEPCO must first focus on resolving the tainted water problem and reducing risk at the Fukushima plant.** He said the Fukushima plant and the Kashiwazaki-Kariwa plant cannot be treated as 2 different matters.

Commissioner Kayoko Nakamura said she was surprised that TEPCO made the application for the safety screening.

She said she does not think TEPCO has sufficient knowledge of radioactive materials, in apparent reference to the company's handling of the situation at the Fukushima plant. Nakamura said she doubts if the authority can tell local residents that the reactors in question at the Kashiwazaki-Kariwa plant are safe.

TEPCO is one of 5 power companies which have applied for the screening of a total of 14 reactors. At present, all of Japan's 50 reactors have been taken offline, mostly for inspections.

October 2, 2013



## Reporters given a tour of new safety equipment

### Kashiwazaki-Kariwa plant shown to reporters

[http://www3.nhk.or.jp/nhkworld/english/news/20131002\\_35.html](http://www3.nhk.or.jp/nhkworld/english/news/20131002_35.html)

Tokyo Electric Power Company has invited the media to have a look at work under way on facilities at a plant in Niigata Prefecture that will allow the utility to deal with an emergency.

The construction of such facilities is required under the new, tougher safety guidelines that took effect in July.

The new facilities at the Kashiwazaki-Kariwa plant include **filtered vents**. The vents are designed to reduce pressure inside reactor containment vessels in emergencies while limiting emissions of radioactive materials.

On Wednesday, media representatives viewed work under way to build concrete walls around the vent systems.

A new reservoir capable of storing 20,000 tons of water has already been completed. The reservoir is capable of supplying water for 2 weeks, combined with existing facilities, if reactors or spent fuel storage pools need to be cooled down in an emergency.

TEPCO has applied for safety screenings for 2 of the reactors at the plant, a necessary step before restarting them under the new guidelines.

TEPCO officials say all new facilities will be completed by March. They say they hope to work with local governments to draw up evacuation plans for nearby residents.

October 3, 2013

### TEPCO implements new safety measures in bid to restart Niigata reactors

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310030043>

KASHIWAZAKI, Niigata Prefecture--Tokyo Electric Power Co. is installing new venting equipment at its Kashiwazaki-Kariwa nuclear plant here as part of efforts to win approval to restart two reactors.

The equipment is designed to lower pressure and filter radioactive substances in the event of serious accidents.

Reporters were given a tour of the facility that straddles two municipalities of the same names facing the Sea of Japan.

The filtered venting equipment, required under the Nuclear Regulation Authority's new safety regulation standards, is designed to release pressurized steam after filters lower its radiation count.

TEPCO in late September applied to the NRA for safety screenings so it can restart the No. 6 and No. 7 reactors.

The equipment is also being installed in the No. 1 and No. 5 reactors, which it hopes to restart after the first two are complete.

"We will apply for screenings (to restart the No. 1 and No. 5 reactors) depending on progress of the preparations," TEPCO President Naomi Hirose said.

Work on the No. 6 and No. 7 reactors is scheduled for completion before the fiscal year ends in **March**.

Other safety measures are also being implemented at the plant. TEPCO revised its maximum planning height to guard against a catastrophic tsunami from 3.3 meters to 8.5 meters. It has already built a new levee system. The new walls, totaling 2.5 kilometers in length, tower 15 meters above sea level, exceeding the updated tsunami planning requirements. The utility has also created a new water reservoir on elevated ground to cool the reactors in case of emergency.

TEPCO said it plans to invest a total of 120 billion yen (\$1.23 billion) in safety reinforcement work.

October 7, 2013

**NHK video on the danger of (hidden) active faults**

### **Danger of Hidden Faults**

<http://www3.nhk.or.jp/nhkworld/newsline/201310072014.html>

Some researchers have discovered that **almost all active faults are underground and cannot be seen from the surface.**

**Pr. Shinji Toda**, a seismologist (Tokohu University), has been studying all the quakes over 6.5 that have occurred in Japan over the last 90 years.

He found that in as much as 80% of all powerful quakes, the active fault was not identified beforehand. AND sometimes even after the quake, there was very little sign of disturbance on the surface.

He is using a laser-based aerial method to try and identify active faults but this won't be sufficient.

New survey methods have to be invented.

He concludes : **"We know now that we can't say places without active faults are safe."**

October 8, 2013

## Hotspots in Tokyo should at least be checked

### High radiation levels found at possible Olympic sites; Tokyo dismisses data

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310080051>

By SHOJI NOMURA/ ASAHI SHIMBUN WEEKLY AERA

A citizens group said it measured high radiation levels at candidate venues for the 2020 Tokyo Olympics, but the metropolitan government disputes the data and the International Olympic Committee has shown little interest.

The group said some of the potential venues for the Summer Games had radiation levels exceeding the Tokyo metropolitan government's standards for decontamination: 0.23 microsievert per hour 1 meter above ground or a hot spot that measures at least 1 microsievert per hour higher than the surrounding areas.

The site with the highest airborne radiation level was Yumenoshima Stadium in Tokyo's Koto Ward. Located within Yumenoshima Park, the site has a nearby canal where yachts are anchored.

For the 2020 Games, the stadium and the 12 adjacent baseball fields will be plowed over. Facilities are planned there for equestrian events, such as dressage and jumping.

Group members said a reading of 0.484 microsievert per hour was detected 5 centimeters above ground in shrubs next to an entrance on the southern side of the stadium. They said they did not know why such a high reading was found.

Soil from the site had 3,040 becquerels of radioactive cesium per kilogram.

Other sites with comparatively high radiation levels 5 cm above ground were the Tokyo Metropolitan Gymnasium in Shibuya Ward, the projected venue for table tennis, and Yoyogi Gymnasium in the same ward, where the handball competition will be held.

The Uminomori cross country course near Tokyo Bay that is being considered for the equestrian eventing competition had a reading of 0.29 microsievert per hour at a height of 1 meter, the group said.

“The central and Tokyo metropolitan governments have not informed athletes and audiences around the world about data concerning possible radiation exposure,” said Takehiko Tsukushi, 70, who formed the citizens group. “If that is the case, I felt it was our moral responsibility as citizens to conduct the measurement and inform people, regardless of whether they support or oppose having the Olympics in Tokyo.”

The group measured radiation levels at candidate venues in Tokyo, Kanagawa and Saitama prefectures, but it could not cover all 37 sites that could host Olympic events.

The group did not take measurements at the candidate venues in Hokkaido and Miyagi Prefecture because of their distance from Tokyo. And it could not measure radiation levels at the Uminomori mountain bike course because it is still under construction.

After the 2011 meltdowns at the Fukushima No. 1 nuclear plant, Tsukushi, who lives in Tokyo’s Kita Ward, became a member of a group that sought to protect the ward’s children from radiation.

In late March this year, he began seeking members for a new group to measure radiation levels at Olympic venues. Over 14 days in April and May, 92 people of various ages and occupations took radiation measurements using their personal dosimeters.

The group selected a maximum of nine spots above asphalt and grass at each site. Three measurements were taken at each spot at heights of 5 centimeters and 1 meter. The median measurement was used to reduce error.

While hot spots have been detected mainly in eastern Tokyo, the group found readings close to 0.15 microsieverts per hour in a number of other locations, including Chofu in northwestern Tokyo and the Saitama Prefecture cities of Asaka and Kawagoe.

“We believe the data shows that radioactive materials have spread throughout the Kanto region, and that there are some hot spots within that wider area,” Tsukushi said.

The Tokyo metropolitan government’s standard for decontamination 1 meter above ground is based on the recommendation of the International Commission on Radiological Protection (ICRP), which set maximum annual radiation exposure levels for citizens at 1 millisievert (1,000 microsieverts), excluding background radiation and radiation from medical treatment.

Tsukushi’s group translated its findings into English and French and sent a report to then IOC President Jacques Rogge and about 200 national Olympic committees in June.

The group has not heard back from any of those organizations.

The head of the planning section under the environment improvement department at the Tokyo metropolitan government indicated the capital would not seek decontamination work based on the group’s data.

“It is difficult for us to make a judgment with the data collected, even if someone said there was a problem,” the official said.

The Tokyo metropolitan government measured airborne radiation levels at 100 locations in June 2011. It also conducted aircraft monitoring in September 2011.

However, it did not find any areas or hot spots that exceeded the standards set for decontamination work. Any location with a **possible annual radiation level exceeding 1 millisievert** is designated by the central government for extensive study on radiation contamination.

No location in Tokyo has ever received such a designation.

The metropolitan government has continued measuring airborne radiation at eight monitoring posts throughout Tokyo, but the readings remain low.

Radiation measurements have been conducted at the Tokyo Metropolitan Institute of Public Health in Shinjuku Ward since before the 2011 nuclear accident.

The highest reading recorded there was about 0.15 microsievert per hour in late March 2011, soon after the Great East Japan Earthquake and tsunami. Subsequent readings have fallen. Between January and September this year, the maximum daily reading has hovered between 0.0373 and 0.0666 microsievert per hour.

The seven other monitoring posts have not shown any worrisome radiation levels.

Before the Fukushima nuclear accident, radiation readings at the Shinjuku institute were between 0.028 and 0.079 microsievert per hour, or levels similar to current measurements.

Although the Tokyo metropolitan government disagrees with the group's findings of hot spots, Kunikazu Noguchi, an associate professor of radiation protection at Nihon University, has a different take.

"There is no doubt that some Olympic venues with higher than normal airborne radiation levels have been contaminated," he said.

Noguchi said he believes that radioactive materials have spread throughout the greater Tokyo metropolitan area, and that concentration levels differ within the area.

Radiation levels can increase over dirt that absorbs cesium or in grass. Other areas where cesium tends to concentrate include roadside ditches or under gutters where rainwater containing cesium may flow.

Noguchi said such conditions may exist at some Olympic venue sites.

"In both the Tohoku and Kanto regions, we are now at a stage of moving from an emergency situation to a more normal one," Noguchi said. "In order to move back to a normal situation as quickly as possible, the basic principle for radiation protection is to quickly decontaminate any area where readings exceeding 0.23 microsievert per hour are found, even if the finding is isolated."

He added that decontamination would be a very simple matter of removing the soil because the area of high radiation is quite confined.

Other local governments have taken decontamination measures.

"If we receive reports about high radiation levels, even if it is isolated, we will conduct another measurement in that area," an official with the Saitama prefectural government said. "And if decontamination standards are exceeded, the manager of the facility in question will decontaminate the area."

The Kanagawa prefectural government said it takes similar action.

However, the Tokyo metropolitan government continues to insist there is no need for decontamination for isolated cases because those areas do not fall under the guidelines established by the decontamination standards.

During news conferences to promote Tokyo's Olympic bid, Tokyo Governor Naoki Inose repeatedly said: "Radiation levels in Tokyo are no different from those in New York, London and Paris. There is no problem."

Noguchi said the Tokyo metropolitan government should measure radiation levels at the venues and release the data to back up Inose's argument.

**"Saying there is no problem without even measuring for radiation is the same response as the Democratic Party of Japan government immediately after the Fukushima nuclear accident," Noguchi said. "As host nation for the Olympics, it is imperative that radiation levels at the venues be released to the world."**

October 11, 2013

## First nuclear disaster drill

### Nuclear disaster drill aims for more realism

Kyodo

[http://www.japantimes.co.jp/news/2013/10/11/national/nuclear-disaster-drill-aims-for-more-realism/#.Ulj3PVM0\\_9k](http://www.japantimes.co.jp/news/2013/10/11/national/nuclear-disaster-drill-aims-for-more-realism/#.Ulj3PVM0_9k)

The government on Friday kicked off a two-day nuclear evacuation drill — its first since the 2011 Fukushima No. 1 power plant disaster — with the aim of making the exercise more realistic than its usual scripted rehearsals.

The drill is based on a scenario in which an earthquake causes an accident at one of the two reactors at the Sendai power plant in Kagoshima Prefecture, resulting in the release of radioactive substances and orders to evacuate.

The exercise is intended to test the effectiveness of the nation's new nuclear disaster mitigation guidelines, which expanded the evacuation radius to 30 km from a radiation source instead of 10 km.

The Nuclear Regulation Authority said around 3,300 people will take part, including local, prefectural and national officials, power utilities and residents.

The drill is expected to feel closer to reality because many of the participants will not be given advance details of when and how the scenario will unfold, an NRA official in charge of the issue said.

"In past exercises, participants knew all the scenarios and their statements were prepared — which was more like performing a role in a drama. But we found that this method will not nurture people's ability to cope with the situation," he said.

The state, local governments and nuclear power plants will also practice coordinating their responses in the joint exercise, such as by using teleconferencing systems to share information.

Residents within 5 km of the plant will be told to evacuate before radioactive release starts, while some of those farther out, up to a 30-km radius, will flee based on the assumption that radiation levels requiring evacuation have been detected.

In the Fukushima crisis, which involved three core meltdowns after the huge earthquake and tsunami of March 2011, residents within 20 km of the plant and some areas beyond eventually were told to evacuate.

The evacuation process caused great confusion because the government was unprepared and revised the evacuation zones several times while the crisis was unfolding. Many residents fled with only the barest necessities and in some cases even headed to areas with higher radiation levels because the government sat on nuclear fallout projections calculated by SPEEDI, a state-funded computer system designed just for that purpose.

In addition, the central government dragged its feet in advising the distribution and use of iodine pills to residents to help prevent thyroid cancer.

Under the new disaster mitigation guidelines, residents within 5 km of a nuclear power plant will be given a supply of iodine tablets in advance so they can promptly take them.

The tablets have not yet been distributed to people participating in the drill, but residents will be asked to act on the assumption that they have the tablets, according to the NRA.

## **First disaster drill since Fukushima crisis begins at Kagoshima nuke plant**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310110060>

SATSUMASENDAI, Kagoshima Prefecture--The Sendai nuclear plant, operated by Kyushu Electric Power Co., began carrying out a disaster management training exercise on Oct. 11, the first such drill since the 2011 Fukushima nuclear accident unfolded.

A total of about 3,300 individuals will take part in the two-day training exercise. In addition to local residents, officials from about 130 government institutions, including members of the prime minister's office, the Nuclear Regulation Authority, local governments, the police and Self-Defense Forces, will also participate.

The training exercise is to differ drastically from ones held prior to the meltdowns in three reactors at the Fukushima No. 1 nuclear power plant triggered by the Great East Japan Earthquake and tsunami on March 11, 2011. Past drills were criticized as being ineffective because participants were told beforehand what would happen in the simulated exercise, and they reacted according to a prearranged script. This was due,

in part, to belief in the safety myth that said critical accidents would never occur at Japanese nuclear plants.

After the Fukushima nuclear accident, the central government vastly reviewed the framework for disaster management at nuclear plants. A major change was expanding the range of the area where intensified disaster management measures had to be taken from a radius of between eight and 10 kilometers from a nuclear plant to a radius of 30 km.

For this year's training exercise, residents living within the 30-km radius will take part in an evacuation drill for the first time.

The exercise on Oct. 11 began at 10 a.m. under the simulated conditions of an earthquake with an intensity of upper 6 on the Japanese scale of 7 striking an area near the Sendai nuclear plant, causing the No. 2 reactor to automatically shut down.

Shortly after noon, another simulated condition was added--the loss of all electricity to the plant due to an aftershock.

At the Kagoshima prefectural nuclear disaster management center, located about 11 km east of the nuclear plant, simulated news video reporting on the earthquake was broadcast on a large monitor. Prefectural government officials working at the center were busy handling the various pieces of information that came in from Kyushu Electric Power, including the automatic shutdown of the reactor and the outbreak of a fire at the plant.

Past training exercises were criticized for not preparing officials for dealing with the real thing.

The Diet's Fukushima Nuclear Accident Independent Investigation Commission said in its report, "The training exercise cannot be said to have been effective."

In response to that criticism, the latest exercise was changed so that many participants were not informed in detail about what would unfold. Unexpected situations were created by simulating that measures prepared beforehand failed to function properly. The training was expected to help participants develop the ability to deal with an ever-changing situation.

The evacuation drill involving local residents will be held on Oct. 12.

October 12, 2013

## **Nuclear disaster drill in Kagoshima more realistic**

### **Kagoshima holds nuclear disaster drill**

[http://www3.nhk.or.jp/nhkworld/english/news/20131012\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20131012_20.html)

People in Japan's southern prefecture of Kagoshima held their first nuclear disaster drill since the accident at Fukushima Daiichi power plant in March of 2011.

About 130 organizations and some 3,300 residents took part in the 2-day exercise, which ends on Saturday.



The drill was based on a scenario that the cooling system at the No. 2 reactor at the prefecture's Sendai nuclear power plant had malfunctioned.

Residents near the plant began evacuating upon receiving the order from the government.

A new guideline for dealing with nuclear disasters states that people living within a 5-kilometer radius of a nuclear plant must immediately leave their homes after an accident to minimize radiation exposure.

Residents on Koshiki Islands who live within a 30-kilometer radius of the plant also held evacuation drills. Their scenario was hypothetical radiation levels exceeding the limit at the island's monitoring posts.

They moved to a port town more than 30 kilometers from the plant to board a Japan Coast Guard patrol ship.

October 13, 2013

## Use wind direction to avoid exposure to radiation

### Nuclear disaster drill uses wind direction data

[http://www3.nhk.or.jp/nhkworld/english/news/20131013\\_19.html](http://www3.nhk.or.jp/nhkworld/english/news/20131013_19.html)

The Japanese city of Nagaoka has held a rather unusual evacuation drill for a nuclear disaster. The participants used data on wind direction to avoid exposure to radiation.

About 6,400 residents living close to the Kashiwazaki-Kariwa power plant in Nagaoka City took part in Sunday's drill.

Officials of the city's taskforce studied forecasts that said winds would blow to the southeast. They ordered the residents to escape to one of 3 evacuation centers not located on the downwind side.

But winds were observed blowing northward at an observation point in the middle of the city for about 30 minutes while the residents were on their way to the center in a bus.

This means the residents evacuated to a place relatively close to the direction in which radioactive materials were presumed to be spreading from the plant.

A city official in charge of nuclear safety, Yoichi Kojima, says he hopes to find ways to quickly determine

escape routes while gauging the wind direction.

Tokyo Electric Power Company applied in September for safety screening of 2 of the idle reactors at the Kashiwazaki-Kariwa plant.

At present, all of Japan's 50 nuclear reactors have been taken offline, mostly for inspections.

## New system needed for export safety checks

### Loss of atomic parts-vetting regime may delay reactor deal in Vietnam

Kyodo

[http://www.japantimes.co.jp/news/2013/10/13/business/loss-of-atomic-parts-vetting-regime-may-delay-reactor-deal-in-vietnam/#.UluQFFM0\\_9k](http://www.japantimes.co.jp/news/2013/10/13/business/loss-of-atomic-parts-vetting-regime-may-delay-reactor-deal-in-vietnam/#.UluQFFM0_9k)

Last year's scrapping of an administrative system for overseeing the export and financing of nuclear technology has thrown a wrench into a deal to send two reactors to Vietnam, government officials said.

Although Prime Minister Shinzo Abe views the export of atomic technology as one of the pillars of his economic growth strategy, nuclear cooperation with Vietnam may not proceed as scheduled, they said Saturday.

Under domestic rules, Japan must confirm the importing country has nuclear safety regulations in place and complies with international rules before state-backed Japan Bank for International Cooperation doles out loans for export, they said.

The now-defunct Nuclear and Industrial Safety Agency had been in charge of checking the safety of parts and machinery for export, despite the nation not having shipped a reactor anywhere in the world, they said.

But the Nuclear Regulation Authority, launched in September last year as the new atomic watchdog, will not be involved in nuclear export safety checks, the officials said, citing what its secretariat told the Agency for Natural Resources and Energy in January.

That agency is considering having experts conduct the safety checks, but exactly when a new system will be established remains unknown, officials said.

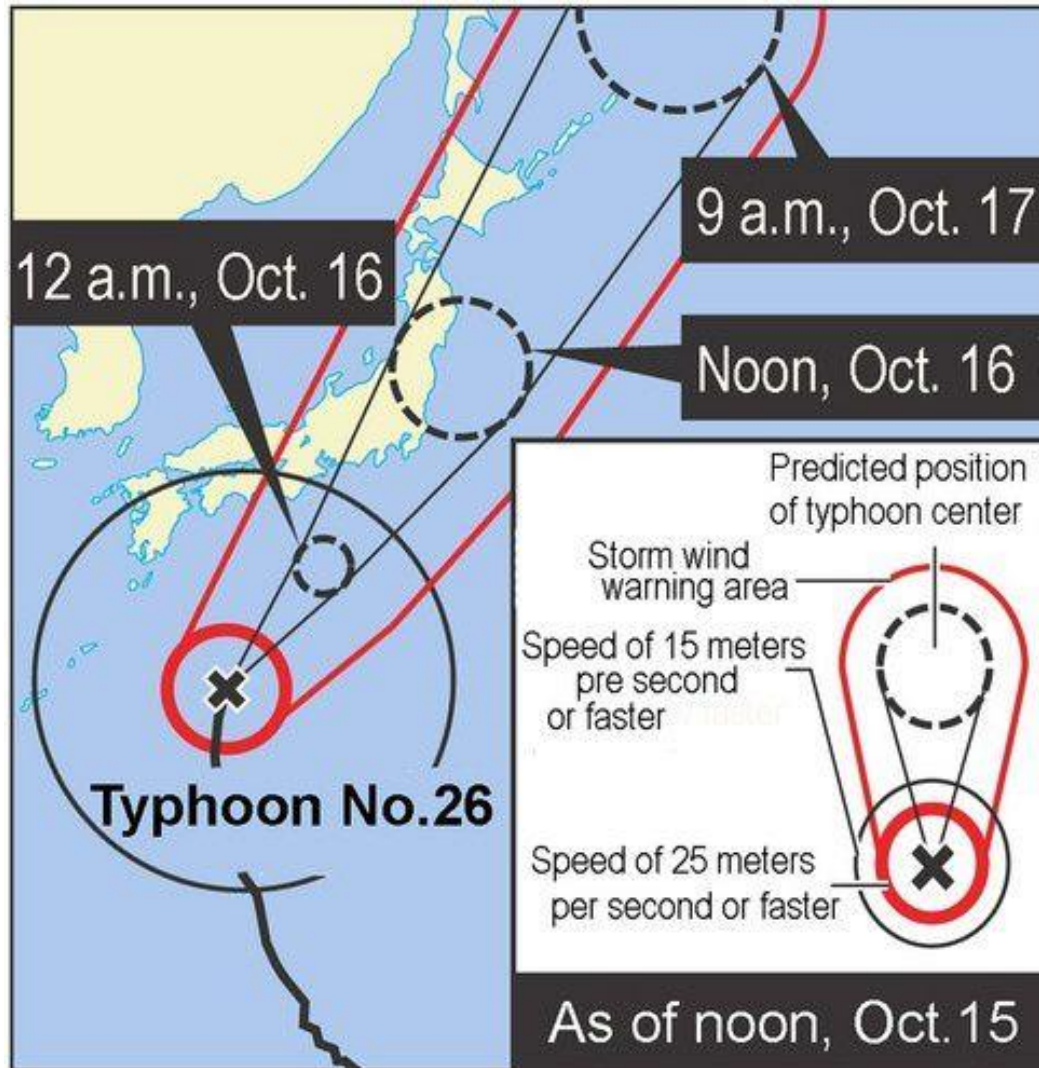
In October 2010 Vietnam signed on to a deal to import two reactors, and Tokyo has since agreed to finance the projects — each estimated to cost hundreds of billions of yen — with loans mainly from the JBIC.

October 15, 2013

## Typhoon approaching

### Strong typhoon approaching Japan

<http://mainichi.jp/english/english/newsselect/news/20131015p2g00m0dm005000c.html>



TOKYO (Kyodo) -- A strong typhoon was moving over waters east of Okinawa Prefecture's Minamidaito Island on Tuesday morning and will approach the Pacific side of eastern Japan on Wednesday, the Japan Meteorological Agency said.

The agency warned of strong winds, high waves and heavy rainfall from Tuesday to Wednesday in wide areas from western to northern Japan.

Typhoon Wipha, the 26th typhoon of the year, was traveling northward around 260 kilometers east of Minamidaito at a speed of 25 km per hour as of 6 a.m. Tuesday, according to the agency.

It had an atmospheric pressure at its center of 940 hectopascals and was packing winds of up to 216 kph.

It will bring up to 350 millimeters of rainfall in 24 hours through 6 a.m. Wednesday in the Tokai region surrounding Nagoya as well as 250 mm in the Kanto-Koshin and Kinki regions, including Tokyo and Osaka.

October 22, 2013

## Evacuation drill for meltdown at Ikata plant

### **Ehime holds evacuation drill based on Ikata plant fallout**

KYODO

[http://www.japantimes.co.jp/news/2013/10/22/national/ehime-holds-evacuation-drill-based-on-ikata-plant-fallout/#.UmZrSlM0\\_9k](http://www.japantimes.co.jp/news/2013/10/22/national/ehime-holds-evacuation-drill-based-on-ikata-plant-fallout/#.UmZrSlM0_9k)

Matsuyama, Ehime Pref. – Preparing for the worst-case scenario of a meltdown at Shikoku Electric Power Co.'s Ikata nuclear plant, Ehime Prefecture held its first emergency drill Tuesday to test the response to a massive leak of radioactive materials.

Kagawa, Kochi, Tokushima, Yamaguchi and Oita prefectures also participated in the drill.

Under the exercise, a massive plume of radioactive materials leaked from reactor 3 at the Ikata plant after it was hit by an earthquake. An evacuation order was issued for people living within 30 km of the plant as radiation readings above the government-set limit of 500 microsieverts per hour were detected.

Participating residents evacuated to civic centers and other places outside the 30-km radius, and officials on a crisis management headquarters in Matsuyama City Hall teleconferenced with Yamaguchi and other prefectural officials.

Ambulances and helicopters were mobilized to take injured plant workers to hospitals, while the prefecture screened residents for radiation exposure.

In June, Ehime Prefecture established a 30-km radius around the Ikata plant as the priority zone for nuclear disaster prevention measures. The zone covers seven towns and cities in Ehime Prefecture, including the town of Ikata, as well as part of Kaminoseki, Yamaguchi Prefecture.

## Filtered vent shown to media in Niigata

### TEPCO shows Niigata plant's filtered vent to media

[http://www3.nhk.or.jp/nhkworld/english/news/20131022\\_25.html](http://www3.nhk.or.jp/nhkworld/english/news/20131022_25.html)

Tokyo Electric Power Company has shown a safety system called a filtered vent to the media at its Kashiwazaki-Kariwa nuclear power plant in Niigata Prefecture.

The system must be installed under tightened guidelines imposed earlier this year before the utility can restart operations. The guidelines are aimed at making nuclear power plants better equipped to deal with emergencies.

In September, TEPCO applied to the government nuclear regulator for the safety screening needed to restart the plant's Number 6 and 7 reactors.

Construction for the foundation of the vent system at the Number 7 reactor was completed last week, and installation work began on Tuesday.

Filtered vents are designed to curtail emissions of radioactive substances when reactors must undergo emergency venting to reduce pressure.

The cylinder vent is 8 meters high and 4 meters in diameter. It can cut the amount of radioactive substances released into the atmosphere by up to 0.1 percent, using a combined water and chemical filtration system.

Niigata Prefecture has told TEPCO that it will not allow the vents to be used until the utility hold talks with local governments about evacuation plans and the arrangements are approved.

The plant's safety center chief, Shiro Arai, says he wants to discuss emergency evacuation procedures

with local governments, as some radioactive materials will be emitted even if the filters are used.

TEPCO plans to complete the work at the Number 7 reactor by the end of March next year. Work is under way to install the filtered vents at the plant's Numbers 1, 5 and 6 reactors.

October 23, 2013

## **NRA criticises TEPCO's safety measures**

### **NRA chairman to meet TEPCO president over Fukushima nuclear plant woes**

<http://mainichi.jp/english/english/newsselect/news/20131023p2a00m0na017000c.html>

Nuclear Regulation Authority (NRA) Chairman Shunichi Tanaka has decided to hold a meeting with Tokyo Electric Power Co. (TEPCO) President Naomi Hirose and ask him directly about the state of the company's crippled Fukushima No. 1 Nuclear Power Plant, which has been plagued by leaks of radioactively contaminated water due to operational errors.

Tanaka intends to make a decision on the start of safety screening of the idled No. 6 and 7 reactors at TEPCO's Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture pending the outcome of the meeting, which he decided on during a regular NRA session on Oct. 23. It is therefore expected that screening will be delayed for some time.

Nuclear reactor safety screenings take about half a year to complete, and if the commencement of screening is delayed, then it will be extremely unlikely for any reactors at the plant to be started this fiscal year.

TEPCO hopes to bolster its financial standing by quickly restarting the nuclear reactors, but based on the latest developments, it looks likely the utility will be forced to rethink its plans.

The NRA's secretariat earlier requested that TEPCO file a report on improvement measures and its ability to operate reactors at the Kashiwazaki-Kariwa Nuclear Power Plant, and TEPCO submitted the report on Oct. 15.

In the report, the utility expressed the view that it could handle safety management at its Kashiwazaki-Kariwa Nuclear Power Plant together with measures to handle contaminated water at the Fukushima

plant. The company said it would add about another 80 workers to its team handling contaminated water at the Fukushima plant.

However, Tanaka questioned the power company's capabilities on Oct. 23, asking, "If they can properly handle Kashiwazaki-Kariwa, then that creates major doubts over why they can't do the same at the Fukushima plant."

Another NRA commissioner, Kayoko Nakamura, pointed out, "TEPCO hasn't been able to absorb onsite problems, while fellow commissioner Kenzo Oshima commented, "The company is exhausted handling the nuclear disaster, and no one believes that a business seeing a continuing outward flow of human resources will be able to overcome future difficulties."

Tanaka added, "It's not just a case of contaminated water; there's still the problem of spent nuclear fuel, which is more difficult to handle. It's important for the company to act with an outlook for the future, incorporating a total view."

Up until now the NRA had avoided direct meetings with power company officials to maintain its independence as a regulatory authority, but the nuclear watchdog deemed there was a need to meet TEPCO's president and discuss a response to problems. Tanaka and Hirose are expected to meet about a week from now.

The Fukushima No. 1 Nuclear Power Plant has faced a stream of problems attributable to human error, including a leak of contaminated water on Oct. 2 from an overfilled tank that had been built on leaning ground.

## **NRA chief to meet TEPCO head on nuclear safety**

[http://www3.nhk.or.jp/nhkworld/english/news/20131023\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20131023_30.html)

Officials from Japan's Nuclear Regulation Authority have criticized a report submitted by Tokyo Electric Power Company on safety measures at its nuclear plants.

The NRA met on Wednesday after TEPCO submitted the report to the authority on Tuesday of last week.

The report outlines the measures TEPCO is taking to prevent radioactive water leaks and other problems at the crippled Fukushima Daiichi plant. In the report, TEPCO also says it is capable of safely managing 2 reactors at the Kashiwazaki-Kariwa plant in Niigata Prefecture. The utility has plans to restart the reactors.

At the meeting on Wednesday, a member of the NRA called the report "unconvincing" and expressed

doubts about whether TEPCO would be able to deal with problems that may arise in the future.

Another member suggested that if TEPCO says there are no problems at the Kashiwazaki-Kariwa plant, then the utility should reassign more workers from there to the Fukushima Daiichi plant.

NRA Chairman Shunichi Tanaka acknowledged the need to properly question TEPCO. He said that, based on the content of the report, it seems like the plants are being handled by 2 different companies. Tanaka plans to hold a meeting with TEPCO President Naomi Hirose to find out how the utility's management sees the situation.

The NRA has yet to decide whether to proceed with safety assessments of the 2 reactors at the Kashiwazaki-Kariwa plant. Newly formulated regulations require the assessments before the reactors can restart.

October 25, 2013

## **TEPCO cannot keep pace with rainwater - Emergency protocol simplified**

### **NRA approves simplified emergency protocol measures to handle Fukushima rainwater**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310250043>

By SHUNSUKE KIMURA/ Staff Writer

The Nuclear Regulation Authority approved a request to simplify emergency protocol procedures to deal with rainwater that accumulates behind barrier walls at the crippled Fukushima No. 1 nuclear power plant.

Only applicable in cases of emergency, the simplified protocol measures allow Tokyo Electric Power Co., which operates the plant, to test accumulating water that is threatening to overflow the barriers that surround the plant's surface storage tanks on-site for radioactive contamination before being released.

Prior to the NRA's Oct. 24 decision, the protocol demanded that TEPCO first transfer the accumulating water to temporary storage tanks to be tested before allowing it to flow into the surrounding soil if it met safety standards.



During heavy rains on Oct. 20, water levels rose so rapidly that workers had no time to follow the then standard operating procedures before water reached the brims of the barriers and started overflowing. That led TEPCO to propose simplifying the operating protocol in cases involving a similar emergency.

Under the changes approved by the NRA, it will now be sufficient to test rainwater in at least four locations directly behind a barrier wall in locations where the safety standards were met on Oct. 20. The rules stipulate rainwater in all other areas should still be collected without being released.

In a related story, TEPCO on Oct. 24 began removing rainwater from behind barriers surrounding eight surface storage tank areas and transferring it into underground tanks. The operation is intended to lower water levels inside the barriers before the arrival of Typhoon No. 27, which is expected to approach eastern Japan on Oct. 26.

TEPCO stopped using the underground water storage tanks at the plant after it was learned in April that highly radioactive water had escaped from some. The urgent situation caused by Typhoon No. 26's downpours forced the utility to reopen one of the underground tanks to transfer contaminated water in what it called at the time an "emergency operation."

The NRA has said it is up to TEPCO to decide whether to resume using the underground tanks. But local officials have called on the utility to quickly move the water elsewhere when the opportunity presents itself, sources said.

### **NRA allows simplified release of barrier water**

[http://www3.nhk.or.jp/nhkworld/english/news/20131025\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20131025_02.html)

Japan's nuclear regulator has allowed the operator of the Fukushima Daiichi nuclear plant to simplify its procedure to release water from barriers around tanks holding water contaminated by radioactivity.

A Nuclear Regulation Authority, or NRA, taskforce made the decision on Thursday.

It had previously only permitted the Tokyo Electric Power Company to discharge rainwater from the barriers after it moved the water temporarily into other tanks and confirmed the contamination levels were below the NRA-set standard.

However, since last month, TEPCO has not been able to keep pace with the increase in rainwater volume inside the barriers due to recent downpours.

This has caused water above the permitted contamination level to overflow the barriers.

The situation has prompted the NRA to approve TEPCO's proposal to drop the procedure of temporarily transferring the rainwater in the barriers to other tanks.

October 30, 2013

## Nuke safety: Japan "sharing its experience and lessons" from 3/11?

### **Abe pledges nuclear safety as Japan wins bid to build Turkish plant**

<http://mainichi.jp/english/english/newsselect/news/20131030p2g00m0bu045000c.html>

ISTANBUL (Kyodo) -- Prime Minister Shinzo Abe pledged Tuesday to boost Japan's efforts to ensure the safety of nuclear power as one of its firms jointly won an order to build a Turkish atomic power plant, the first such order for a Japanese company since the Fukushima disaster.

Earlier in the day, Abe and Turkish Prime Minister Recep Tayyip Erdogan discussed promoting bilateral economic cooperation. Tokyo aims to increase Japanese exports of large infrastructure to Turkey and other emerging economies in areas such as energy and transportation.

**"Japan is responsible for helping improve the safety of atomic power in the world by sharing its experience and lessons from the accident,"** Abe said at a joint press conference following the summit in Istanbul, referring to the meltdowns at the Fukushima Daiichi plant following the March 2011 earthquake and tsunami in northeastern Japan.

Erdogan said Turkey needs nuclear power, showing his intent to call for more foreign investment in relevant projects.

During Abe's visit, a joint venture established by Mitsubishi Heavy Industries Ltd. and Areva SA of France reached agreement with the Turkish government on a project valued at about 2 trillion yen (\$20.37 billion) to construct a nuclear power plant with four advanced reactors in the Black Sea province of Sinop.

The venture, Atmea, set up in 2007 and based in Paris, had obtained preferential negotiating rights with Ankara. It plans to start the operation of the new plant in 2023, company officials said.

The Mitsubishi-Areva alliance is also vying with Russia's Atomstroyexport for a similar contract in Jordan.

Abe, when last visiting Turkey in May, agreed with Erdogan to provide the country with Japan's civil nuclear technology -- an accord necessary for Japanese manufacturers to be involved in such overseas projects.

Although the nuclear plant project in Turkey is a boost for Japan's economic growth strategy, Abe is still struggling to dispel widespread concerns about nuclear safety in Japan.

The Fukushima crisis has increasingly led people to rally for eliminating atomic power, including former Prime Minister Junichiro Koizumi, whom Abe had served as one of the closest aides.

All 50 commercial reactors in Japan are now offline and required to clear a set of safety requirements introduced in July to resume operation. The new safety standard could force utilities to shut down some reactors permanently.

On Tuesday, Abe said he and Erdogan "discussed measures to promote economic cooperation such as large infrastructure development."

They had been expected to agree to launch preliminary talks for a bilateral free trade accord during their meeting. But they did not have enough time to discuss the issue, according to Japanese officials.

They signaled the importance of strengthening security ties and increasing leader-level bilateral dialogue, with the latest summit also focusing on the civil war in Syria and the nuclear development program in Iran, both neighbors of Turkey.

Abe invited Erdogan to visit Japan and the Turkish premier expressed his intention to make a trip as early as January, the officials said.

Tokyo won its bid to host the 2020 Olympics by beating Istanbul and Madrid. Abe asked Turkey for cooperation to make the sports event a success.

## **Abe pledges nuclear safety as Japan wins bid to build Turkish plant**

Kyodo

<http://www.japantimes.co.jp/news/2013/10/30/national/abe-pledges-nuclear-safety-as-japan-wins-bid-to-build-turkish-plant/#.UnDHWFOwT9k>

ISTANBUL – Prime Minister Shinzo Abe pledged Tuesday to boost Japan’s efforts to ensure the safety of nuclear power as one of its firms jointly won an order to build an atomic power plant in Turkey, the first such order for a Japanese company since the Fukushima crisis [....]

## How safe is assemblies removal from pool at reactor 4?

### Japan OKs fuel removal from pool at nuclear plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201310300091>

THE ASSOCIATED PRESS

Japanese regulators on Oct. 30 gave final approval for the removal of fuel rods from an uncontained cooling pool at a damaged reactor building considered the highest risk at a crippled nuclear plant.

Removing the fuel rods from the Unit 4 cooling pool is the first major step in a decommissioning process that is expected to last decades at Fukushima No. 1 nuclear power plant, where three reactors melted down after the March 2011 earthquake and tsunami.

The Nuclear Regulation Authority said at its weekly meeting that the proposal by the plant's operator, Tokyo Electric Power Co., is appropriate and that the removal can start in November as planned.

“It’s a major step toward decommissioning,” said Toyoshi Fuketa, one of the authority’s five commissioners. “Moving the fuel rods out of Unit 4 can significantly reduce the risk at the plant.”

The Unit 4 reactor was offline when the plant was hit by the disasters, but the building was damaged by hydrogen explosions and fire. Fuel rods in the pool, however, have since been properly cooled and are safe enough to remove, officials said.

TEPCO has reinforced the structure around the pool and says the Unit 4 building can survive a major earthquake, but the unenclosed pool on the unit’s top floor, which contains 1,533 fuel rods, has caused international concern. About 200 of the rods that are unused and safer are expected to be the first to be removed.

The Unit 4 cooling pool has attracted international attention in part because early in the crisis it was suspected to have dried up, when in fact there was enough water to cover the rods, keeping them from melting. TEPCO last year plucked two unused fuel rod units out of the pool and said no major corrosion or damage was found in them.

Nuclear regulatory chairman Shunichi Tanaka, however, warned that removing the fuel rods from Unit 4 would be difficult because of the risk posed by debris that fell into the pool during the explosions.

"It's a totally different operation than removing normal fuel rods from a spent fuel pool," Tanaka said at a regular news conference. "They need to be handled extremely carefully and closely monitored. You should never rush or force them out, or they may break."

He said it would be a disaster if fuel rods are pulled forcibly and are damaged or break open when dropped from the pool, located about 30 meters (100 feet) above ground, releasing highly radioactive material. "I'm much more worried about this than contaminated water," Tanaka said.

TEPCO has prepared a massive steel structure that comes with a remote-controlled crane to remove the fuel rods, which will be placed into a protective cask and transferred to a joint cooling pool inside a nearby building.

The company plans to empty the Unit 4 pool by end of 2014, and remove fuel rods from other pools at three other wrecked reactors over several years before digging into their melted cores around 2020.

The Fukushima plant has had a series of mishaps in recent months, including radioactive contaminated water leaks from storage tanks, adding to concerns about TEPCO's ability to safely close down the plant.

## **Japan OKs fuel removal from pool at nuke plant**

<http://mainichi.jp/english/english/newsselect/news/20131030p2g00m0dm080000c.html>

TOKYO (AP) -- Japanese regulators on Wednesday gave final approval for removing fuel rods from an uncontained cooling pool at a damaged reactor building considered the highest risk at a crippled nuclear plant.

Removal of fuel rods from the Unit 4 cooling pool is a first step in decommissioning the plant where three reactors melted down after the March 2011 earthquake and tsunami, a process expected to last decades.

The Nuclear Regulation Authority said at its weekly meeting the proposal by the plant operator, Tokyo Electric Power Co., is appropriate and the removal can start in November as planned.

The Unit 4 reactor was offline when the Fukushima Dai-ichi plant was hit by the disasters, but the building was damaged by hydrogen explosions and fire.

TEPCO has reinforced the structure and says the building can survive a major quake, but the unit's unenclosed pool containing 1,533 fuel rods has caused international concern.

The company has prepared a massive, steel structure that comes with a remote-controlled crane to remove fuel rods, which would be placed into a protective cask and transferred to a joint cooling pool inside a nearby building, which is much lower and considered safer.

The Fukushima plant has had a series of mishaps in recent months, including radioactive contaminated water leaks from storage tanks, adding to concerns about TEPCO's ability to safely close down the plant.

November 5, 2013

## US model risk assessment for Japanese nuclear plants

### Japan to study nuclear accident risk system in US

[http://www3.nhk.or.jp/nhkworld/english/news/20131105\\_25.html](http://www3.nhk.or.jp/nhkworld/english/news/20131105_25.html)

Japanese and US officials have agreed to explore ways to introduce a system in Japan for assessing the risk of accidents at nuclear power plants. Such a system is already in place in the United States.

Japan's Deputy Foreign Minister Shinsuke Sugiyama and US Deputy Secretary of Energy Daniel Poneman met in Washington on Monday.

They were attending the 2nd meeting of a commission to discuss nuclear power safety. The commission was formed by Japan and the US last year following the accident at the Fukushima Daiichi plant.

Japanese officials proposed that the 2 countries work together to **set up a US-model risk assessment system in Japan** that uses metrics to compute the probabilities of a nuclear plant accident.

The 2 sides will work to convene experts to study the system's requirements and its method of implementation in Japan.

**The US assessment method quantifies factors such as natural disasters, unexpected equipment malfunctions and human error to determine which areas of a nuclear power plant are at high risk.**

The technique is said to identify individual weaknesses at each Japanese plant that is analyzed.

Officials of the 2 countries also agreed to cooperate to deal with the leakage of highly contaminated water at the Fukushima plant.

## US model risk assesment for Japanese nuclear plants

## Japan to study nuclear accident risk system in US

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## Mounting pressure to demand international task force

### Tepco feeling heat over fuel removal

<http://www.japantimes.co.jp/news/2013/11/05/national/tepco-feeling-heat-over-fuel-removal/#.UnlFxFOWT9k>

*Doubtful of utility's aptitude, experts urge help for dangerous operation*

by Eric Johnston  
Staff Writer

OSAKA – With Tepco due to begin removing more than 1,300 spent-fuel rod assemblies and nearly 200 fresh ones from the reactor 4 pool at the Fukushima No. 1 plant this month, global pressure is mounting to allow an international task force to monitor and assist the highly hazardous operation.

A former Japanese ambassador to Switzerland, anti-nuclear groups in Japan and abroad, nuclear engineers, doctors and radiologists are warning of the dangers of the operation Tokyo Electric Power Co. plans to carry out and calling for pressure on Prime Minister Shinzo Abe's administration to be more globally transparent.

"It is urgently needed to set up an international task force to assist Japan by deploying all possible means to reduce the risks of the imminent first unloading of spent fuel from unit 4," ex-Ambassador to Switzerland Mitsuhei Murata said in a recent letter to U.S. President Barack Obama.

Journalist and activist Harvey Wasserman, writing for Global Research, an independent research and media organization based in Montreal, claims Tepco does not have the scientific, engineering or financial resources to extract the fuel on its own.

The extraction "may be humankind's most dangerous moment since the Cuban missile crisis. We are petitioning the United Nations and Obama to mobilize the global scientific community to take charge of the nuclear power plant and the job of moving these fuel rods to safety," he wrote in September.

Separately, 17 internationally prominent physicians, nuclear engineers and scientists, radiation experts, and policymakers have written to U.N. Secretary-General Ban Ki-moon, asking that he appoint experts independent of both Tepco and the International Atomic Energy Agency, which has a mandate to both monitor and promote nuclear energy, to formulate a viable disaster-mitigation plan.

The operation to remove the fuel rods is also heightening fears in the U.S. over food safety, especially on the West Coast. More than 12,000 people have signed an online petition on Change.org to 10 senators, calling on them to conduct an investigation into possible environmental damage to the U.S. Pacific coast.

"This would include a detailed inspection of the (Fukushima No. 1) facility by a team of experts who are independent of the nuclear industry, as well as ongoing monitoring of West Coast and Hawaii water, air and food for radiation," the petition reads.

At a meeting of largely pro-nuclear Japanese and international scientific experts in Kyoto last month, Abe said the government is open to receiving the most advanced knowledge from abroad to contain the Fukushima woes.



He also told the International Olympic Committee in September that Japan needs international assistance. But in neither case did he specify what kind of advice from abroad he would welcome.

November 6, 2013

## Selling nukes abroad: What about business ethics?

### EDITORIAL: Abe ignoring risks in exporting nuclear reactors

<http://ajw.asahi.com/article/views/editorial/AJ201311060063>

The Japanese government is intent on exporting nuclear reactors to developing countries.

During his trip to Turkey in late October, Prime Minister Shinzo Abe secured a contract between Ankara and a Japanese consortium led by Mitsubishi Heavy Industries Ltd. to construct nuclear reactors in the northern part of the country.

But radiation-contaminated water is still leaking from the crippled Fukushima No. 1 nuclear power plant. With decontamination work running behind schedule, the situation is anything but under control.

Fukushima evacuees, who still have no idea when or if their lives will ever return to normal, are naturally upset by the export of nuclear reactors when their welfare is being sacrificed.

The Abe administration continues to remain vague about its energy policy, even though many people are vociferously calling for an end to nuclear power generation. **The administration now seems to be telling the rest of the world that dealing with the Fukushima disaster has helped improve Japan's nuclear technology.**

This is just wrong.

At a joint news conference with Turkish Prime Minister Recep Tayyip Erdogan, Abe declared, "Japan has a responsibility to share the lessons of the Fukushima nuclear disaster with the rest of the world and to promote nuclear safety."

Sharing the lessons is fine. But in reality, Japan's sloppy response to the nuclear crisis has only aroused the mistrust of the international community.

Experts have yet to accurately assess the extent of damage at the Fukushima No. 1 plant caused by the March 2011 Great East Japan Earthquake before the tsunami arrived.

How could the government confidently assure the safety of the reactors being exported to Turkey, one of the most earthquake-prone countries in the world?

Another concern is responsibility for compensation in the event of an accident involving exported nuclear facilities.

In the United States, Southern California Edison says it has lost billions of dollars from having to permanently shut down a nuclear power plant in California due to radiation leaks caused by steam generators built by the Mitsubishi Heavy Industries group.

The utility is demanding that the group pay damages exceeding the limit of liability specified in the contract.

The days are over for plant manufacturers taking no responsibility for post-delivery problems. Abe's "sales pitch" to the Turkish government may well be understood as the Japanese government's guarantee to pay damages in the event of a major accident at the Turkish plant.

Developing nations are politically unstable to varying degrees. We have to wonder if our government has seriously considered the risks of nuclear terrorism and the possibility of nuclear substances being used to build nuclear weapons.

During the joint news conference, Prime Minister Erdogan said to the effect that people cannot stop using cars or airplanes to avoid an accident.

But the Fukushima disaster has made it all too obvious that the dangers of a nuclear plant cannot possibly be compared with those for a car or a plane.

The difficulties of maintaining nuclear power generation in an earthquake-prone country have become amply clear through discussions on active faults and the process of drawing up evacuation plans for broad areas.

And there is yet no answer to the question of how to dispose of spent nuclear fuel.

The Abe administration has positioned nuclear reactor exports as a principal pillar of its economic growth strategy. But the drive to sell them abroad in disregard of all the unresolved problems flies in the face of business ethics.

## **NRA warns about Monju failings**

### **Regulators warn Monju operator over breach of nuclear security rules**

<http://mainichi.jp/english/english/newsselect/news/20131106p2g00m0dm056000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority on Wednesday admonished the operator of the Monju prototype fast-breeder reactor for failing to take appropriate measures to protect nuclear material from possible terrorist attacks and other malicious acts.

The rebuke is another black mark against the Japan Atomic Energy Agency, previously criticized by the NRA over a massive number of equipment inspection failures at Monju.

According to the NRA, some fences to restrict access to certain areas were about 30 centimeters lower than stipulated in the JAEA's rules and regular checkups of equipment to ensure nuclear security, such as cameras, were not conducted appropriately.

The operator also allowed visitors inside areas where nuclear material exists without taking copies of their identifications, which was another breach of the rules.

"We must say that people (in charge of the issue) lacked awareness of nuclear security," the NRA said in its report.

During a meeting Wednesday, NRA commissioners expressed disappointment over the JAEA's behavior, noting that Monju is a facility that requires special attention in terms of nuclear security. The fuel for Monju contains plutonium, a material used in nuclear weapons.

"It is unprecedented. Why did breaches happen at this most important Monju facility?" Toyoshi Fuketa, one of the commissioners, said.

NRA Chairman Shunichi Tanaka also said, "I hope this incident will not develop into an international issue."

"The international society is very nervous about nuclear terrorism...So it will be a trouble if Japan becomes loose about such issues," Tanaka told a press conference later in the day.

The Monju reactor is not operating because it was effectively banned from operation in May following the revelation of lax safety inspections.

But even before that, Monju remained largely offline since first achieving criticality in 1994, due to a leakage of sodium coolant and other subsequent problems.

Over 1 trillion yen has been spent on the Monju project, with Japan hoping it would play a key role in a nuclear fuel recycling policy that aimed at reprocessing spent nuclear fuel and reusing the extracted plutonium and uranium as reactor fuel.

### **NRA warns operator of Monju**

[http://www3.nhk.or.jp/nhkworld/english/news/20131106\\_25.html](http://www3.nhk.or.jp/nhkworld/english/news/20131106_25.html)

Japan's nuclear regulatory body on Wednesday warned the operator of the fast-breeder reactor Monju on the Sea of Japan coast that its anti-terrorism measures are insufficient.

Government inspectors pointed out in July that the Japan Atomic Energy Agency violated 4 anti-terrorism requirements for the protection of nuclear material.

The violations included the lack of background checks on visitors to Monju, and the lack of regular inspections over the past 3 years of a device that records vehicle and personnel entry into the compound.

On Wednesday members of the Nuclear Regulation Authority said that such neglect at a plutonium handling facility is unprecedented.

The authority said that the poor system to protect nuclear material is due to the organization of the Japan Atomic Energy Agency.

It demanded that the agency draw up measures to prevent a recurrence.

In May the nuclear regulatory body ordered the agency not to prepare for a test run of Monju until measures are in place to prevent equipment inspection errors.

About 14,000 pieces of equipment at Monju had not been inspected.

November 8, 2013

## Threats of terrorism a useful excuse

### **Nuclear plant security info should be kept secret: Mori**

<http://www.japantimes.co.jp/news/2013/11/08/national/nuclear-plant-security-info-should-be-kept-secret-mori/#.Un00JSewT9k>

JJI

Information on how nuclear power plants in Japan are guarded by police and security officers should be designated as a state secret under the proposed confidentiality bill, Masako Mori, minister in charge of the bill, said Friday.

"If we make public the security plans of police, such information could reach terrorists," Mori said in a meeting of a House of Representatives special committee on national security, where full deliberations on the government-sponsored bill kicked off.

Mori recognized that information on how nuclear plants are guarded falls under the category of terrorism prevention cited in the list attached to bill as part of areas for state secret designation.

However, Mori said that information on the Trans-Pacific Partnership free trade negotiations will not be designated as a state secret because it does not fall under any in the list.

The controversial bill calls for tougher penalties on government officials and others who leak designated state secrets but leaves designation of secrets to top officials of government agencies.

As the bill stipulates that freedom of the press and news-gathering should be given due consideration, New Komeito lawmaker Yoshinori Oguchi asked in the committee meeting whether the provision covers news-gathering by political party newspapers.

Mori said she understands their news-gathering in principle is press coverage because they inform an indefinitely large number of people about the facts.

New Komeito, the junior coalition partner of the ruling Liberal Democratic Party, issues a party paper called Komei Shimbun.

The government wants the state secret protection bill to be enacted during the ongoing session of the Diet that ends on Dec. 6, insisting it is inextricably linked to a bill to establish a national security council of the government. That bill cleared the Lower House on Thursday.

Meanwhile, opposition parties are taking a firm stand against the bill, citing concerns about arbitrary designation of state secrets and infringement of the public's right to know.

November 15, 2013

**Ohi fault not active**

## **Panel: Ohi nuclear plant fault "not active"**

[http://www3.nhk.or.jp/nhkworld/english/news/20131115\\_48.html](http://www3.nhk.or.jp/nhkworld/english/news/20131115_48.html)

A group of experts has broadly approved a draft report that says a fault line beneath a nuclear power plant in the central prefecture of Fukui is not active.

The Nuclear Regulation Authority held a meeting of experts on Friday to discuss the draft document about the fault, known as F-6. It runs below the plant in the town of Ohi in Fukui Prefecture on the Japan Sea coast.

When the experts conducted on-site inspections in September, they agreed that it is not active.

The draft report presented by the nuclear body's secretariat says the fault has not moved in the last 120,000 to 130,000 years, and there is no possibility it will move again.

None of the experts objected to the draft report, and NRA Commissioner Kunihiko Shimazaki declared that they broadly approved it.

The participants at the meeting agreed to further examine other fault lines at the plant. They will study them during safety checks that are required before idle reactors can be restarted.

They are expected to submit a final report to the Nuclear Regulation Authority after hearing opinions from 4 other experts who took part in the on-site inspections.

The NRA has been conducting surveys on faults that could potentially affect 6 nuclear power plants, including the facility in Ohi. This is the first time that it has reached a broad agreement that a fault is not active. In May, it judged that a fault below a reactor at the Tsuruga plant in

November 18, 2013

## **Accident in Fukui Pref. would impact millions in neighbouring pref.**

### **Nuclear accident could contaminate Lake Biwa**

[http://www3.nhk.or.jp/nhkworld/english/news/20131118\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20131118_37.html)

Shiga Prefecture in western Japan warns that a nuclear accident at a power plant in the neighboring prefecture could taint drinking water drawn from Lake Biwa.

Shiga prefectural officials on Monday compiled a report on the impact of a major nuclear disaster at one of Kansai Electric Power Company's nuclear plants, in Mihama or Ohi, in neighboring Fukui Prefecture. The disaster is simulated as being on the scale of the 2011 Fukushima accident.

The prefecture based its assumptions on weather factors such as rain and wind. It says a nuclear accident would release radioactive iodine and cesium, and contaminate Japan's largest lake.

Iodine levels would exceed the nationally acceptable 300 becquerels per liter at depths of up to 5 meters. Tap water is taken at that depth.

The estimated contaminated area accounts for 21.7 percent of the lake's total surface area of some 670 square kilometers.

The levels of Cesium 137 would also exceed the state limit of 200 becquerels per liter at up to 18 percent of the lake's total area.

The state levels are temporary and only applied in times of emergency. The simulated contamination would remain above permissible levels for about 10 days in some parts of the lake.

Shiga prefecture plans to assess the mid- to long-term impact of nuclear accidents, and to find ways to remove the nuclear materials at water purification plants.

The findings will be reflected in the prefecture's disaster preparedness plan.

Shiga Governor Yukiko Kada stressed the need to share information with some 14.5 million residents in western Japan who use water from Lake Biwa.

Professor Haruo Hayashi of Kyoto University's Disaster Prevention Research Institute says the findings effectively pinpoint the need for an evacuation plan for wider areas than initially projected. Hayashi heads Shiga Prefecture's disaster preparedness efforts.

Kansai Electric Power Company has 11 reactors at three nuclear power stations in Fukui Prefecture. All of them are currently idle. The plants are located about 30 to 60 kilometers from Lake Biwa.

November 21, 2013

**TEPCO should not assume anything**

## Removing No. 4's nuclear fuel

<http://www.japantimes.co.jp/opinion/2013/11/21/editorials/removing-no-4s-nuclear-fuel/#.Uo5c5yewT9k>

Tokyo Electric Power Co. on Nov. 18 started removing some 1,500 nuclear fuel assemblies from a pool atop the No. 4 reactor at its Fukushima No. 1 nuclear power plant. The work, scheduled to continue through December 2014, is the first step in decommissioning of the whole plant, expected to take 30 to 40 years. Because the removal of nuclear fuel is extremely dangerous, Tepco must do it with utmost care. It also should keep local governments and residents near the plant fully informed about the progress of the fuel removal so that they can quickly take necessary action if an accident occurs.

On March 15, 2011, in the early stages of the triple meltdown of the Nos. 1, 2 and 3 reactors at the plant triggered by the 3/11 megaquake and tsunami, the building housing the No. 4 reactor suffered a hydrogen explosion that blew its roof off. At the time, the core of the No. 4 reactor did not contain any nuclear fuel because it was undergoing a regular inspection. But in a water pool on the fifth floor of the building were stored 1,535 nuclear fuel assemblies, each 4.5 meters long — 1,331 of them containing spent nuclear fuel, which is highly radioactive. In the first part of the removal work, assemblies of fresh nuclear fuel will be removed.

Tepco should not assume that the fuel removal will go smoothly in accordance with its work schedule since it has no experience in removing nuclear fuel assemblies from a building destroyed by an explosion. It should have the wisdom and courage to slow down or temporarily stop the work if necessary. The possibility cannot be ruled out that some fuel assemblies were damaged by falling debris or may be damaged during the removal work.

The removal is extremely delicate work. A transport cask is lowered from an overhead crane into the water pool on the fifth floor and another crane is used to put fuel assemblies into the cask one by one. The cask is then lifted. After a decontamination process, the cask is loaded on to a trailer on the first floor and moved to an undamaged building about 100 meters away. There fuel assemblies will be kept in a common pool, which in the future will also store fuel assemblies from the other reactors. It takes about a week to move one cask from the pool above the reactor to the common pool. If fuel assemblies fall while being moved by the overhead crane to the ground, a serious situation could develop with radioactive substances spreading into the atmosphere.

Tepco has worked out individual scenarios to deal with stoppages of pool cooling, water leaks from the pools, a massive earthquake, a fire and an accident involving the trailer, but not for dealing with a situation in which two or more incidents occur simultaneously. Therefore it must proceed in an extremely carefully manner. Because of the nature of the work, Tepco also should not neglect efforts to reduce workers' exposure to radiation.



## Safety screening at Kashiwazaki-Kariwa

### NRA weighs safety of idled Niigata reactors

<http://www.japantimes.co.jp/news/2013/11/21/national/nra-weighs-safety-of-idled-niigata-reactors/#.Uo5cTyewT9k>

Kyodo

Nuclear regulators on Thursday began assessing the safety of two reactors at Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant, nearly two months after the utility filed an application to restart them.

The move is a sign of progress for Tepco, which is eager to restart the seven-reactor plant in Niigata Prefecture to improve the tough business conditions it faces due to the crisis at its Fukushima No. 1 complex. Earlier, the Nuclear Regulation Authority suggested the process may not go smoothly.

Open safety screening meetings, which the NRA has convened dozens of times for other reactors, had not been held until Thursday for the Kashiwazaki-Kariwa plant. Tepco's poor handling of the Fukushima No. 1 crisis has made regulators wary.

Ultimately though, NRA Chairman Shunichi Tanaka said, the agency could not continue to put off the screening process for reactors 6 and 7 now that documents submitted by the utility have been completely checked.

He also said that he viewed positively a recent announcement by Tepco that it had taken steps to improve the working conditions at the Fukushima plant, which could help the company to address mishaps caused by human error.

But Tanaka has warned that regulators may temporarily suspend the assessment process if serious problems occur at Fukushima No. 1. The screening period could also be prolonged because the two Kashiwazaki-Kariwa units are the first boiling water reactors to undergo safety assessments since Japan revamped its nuclear regulations in July.

Under the new safety requirements that reflect the lessons learned from the Fukushima crisis, BWRs must be equipped with filtered venting systems so that radioactive substances will be reduced when gas and steam need to be released to prevent damage to containment vessels.

The venting facilities are not an immediate requirement for pressurized water reactors, which are housed in containers larger than those of BWRs, giving more time until pressure rises inside the containers.

The activity of small geological faults beneath the two Kashiwazaki-Kariwa reactors could also become a contentious point, although Tepco has denied that the faults are active.

In quake-prone Japan, nuclear plant operators are not permitted to build reactors directly above faults that could move.

For Tepco, bringing its idled reactors back online would help it cut the huge cost of importing fuel for thermal power generation to meet electricity demand in Tokyo and surrounding areas.

The utility and a state-backed bailout fund have approached main creditor banks to seek about ¥2 trillion in fresh loans, sources close to Tepco said Thursday.

Tepco wants to secure the funds for capital investment, such as to renew its aging thermal power generation facilities, but financial institutions are expected to view the request skeptically, having already provided over ¥4 trillion in loans to the ailing company.

## **Fuel rods transferred**

Tokyo Electric Power Co. on Thursday transferred the first batch of fuel rod assemblies pulled from the reactor 4 fuel pool at the crippled Fukushima No. 1 nuclear plant to another building with more stable storage conditions.

The move came three days after Tepco started a yearlong mission to eventually remove over 1,000 fuel assemblies from the spent fuel pool of the damaged reactor 4 building.

After filling a container with 22 unused fuel assemblies by Tuesday, workers on Thursday used a crane to lower the container from the fifth floor of the building housing the spent fuel pool to the ground about 32 meters below.

The container was then placed on a trailer and taken to a building about 100 meters away. There is a pool inside the building.

## **Safety assessment process for TEPCO's Kashiwazaki-Kariwa plant begins**

<http://mainichi.jp/english/english/newsselect/news/20131121p2g00m0dm074000c.html>

TOKYO (Kyodo) -- Nuclear regulators on Thursday began a safety assessment process to decide whether two reactors at Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant are qualified to restart, nearly two months after the utility filed an application.

The move is a sign of progress for TEPCO, which is eager to restart the seven-reactor plant in Niigata Prefecture to improve the tough business conditions it faces due to the crisis at its Fukushima Daiichi complex, but the Nuclear Regulation Authority suggested earlier that the process may not go smoothly.

At the outset of the first safety review session for the Nos. 6 and 7 reactors, TEPCO Managing Executive Officer Takafumi Anegawa said, "We are deeply aware that we are facing doubts over our safety awareness, organization, technical abilities and management. We are expecting strict screening."

Questions from regulators during the 90-minute session focused on a filtered venting system TEPCO plans to install so that radioactive substances will be reduced when gas and steam need to be released to prevent damage to reactor containment vessels.

The installation of the equipment has become a requirement for boiling water reactors for the first time in Japan, after the 2011 Fukushima nuclear crisis led to the release of a massive amount of radioactive material amid the meltdown of three reactors.

Regulators said they want to check the system's filtering ability as well as its operation procedures, given that TEPCO stated in its application document that it will start using the equipment after securing local approval.

TEPCO has included the statement as a result of exchanges with Niigata Gov. Hirohiko Izumida, who has been critical of TEPCO's behavior.

The activity of small geological faults beneath the two reactors could also become a contentious point in the following review process, although TEPCO has denied that the faults are active.

Open safety screening meetings, which the NRA has convened dozens of times for other reactors, had not been held until Thursday for the Kashiwazaki-Kariwa plant as regulators have been wary following TEPCO's poor handling of the Fukushima Daiichi crisis cleanup activities.

As for why the NRA decided to go ahead with the screening process, Chairman Shunichi Tanaka has said the NRA could not continue putting off a screening meeting as format checks of documents submitted by the utility have finished.

He also said that he took positively a recent announcement by TEPCO on a set of measures to improve the working conditions at the Fukushima plant, which could help the company to address mishaps caused by human error.

But Tanaka has warned that regulators may temporarily suspend the assessment process if serious problems occur at Fukushima Daiichi.

For TEPCO, bringing its idled reactors back online would help it cut the huge cost of importing fuel for thermal power generation to meet electricity demand in Tokyo and surrounding areas.

The Nos. 6 and 7 reactors are advanced boiling water reactors and the newest among the seven units at the Kashiwazaki-Kariwa plant, the world's largest nuclear power plant with a combined output capacity of 8.2 million kilowatts.

Sources close to TEPCO said Thursday that the utility and a state-backed bailout fund have approached main creditor banks to seek around 2 trillion yen of fresh loans.

TEPCO wants to secure the funds for capital investment, such as to renew its aging thermal power generation facilities, but financial institutions are expected to cautiously consider whether to respond to the request as they have already provided over 4 trillion yen in loans to the ailing company.

## **Safety screening begins for TEPCO plant in Niigata**

[http://www3.nhk.or.jp/nhkworld/english/news/20131121\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20131121_34.html)

Japan's nuclear regulator has begun safety checks on a huge nuclear plant in Niigata Prefecture on the Japan Sea Coast. The checks are the first step toward starting two of the plant's seven reactors.

Nuclear Regulation Authority officials on Thursday held the first open meeting to assess safety measures at the Kashiwazaki-Kariwa plant. The plant is operated by Tokyo Electric Power Company and has the same type of boiling water reactors as Fukushima.

TEPCO applied for the screening in September to restart reactors 6 and 7 at the plant. But the regulator shelved the process because the utility was struggling with tainted water leaks and other problems at Fukushima.

TEPCO executive Takafumi Anegawa told the meeting the utility has learned lessons from Fukushima and incorporated them in new safety measures. He described plans to deal with serious accidents and natural disasters.

The discussion focused on an emergency filtered vent system that lowers air pressure in a containment vessel while curbing radioactive emissions. The system is required for boiling water reactors under tighter guidelines that took effect earlier this year.

NRA officials wanted to know the details of this filtering system and about how the utility plans to get local approval before starting the venting process.

The utility says restarting the plant is the key to its reconstruction but accepts difficulties are expected in the screening process. NRA officials are set to weigh how the company has been dealing with the Fukushima aftermath.

Niigata Governor Hirohiko Izumida criticized the NRA for starting the screening now when the utility has failed to stop contaminated water leaks in Fukushima. He said he will closely follow the discussion.

Local residents who watched the meeting online said the regulator should examine evacuation plans, not just whether the plant clears safety guidelines.

November 27, 2013

## **NRA new standards for nuke facilities other than nuclear plants**

### **NRA sets new safety regimen for fuel reprocessors**

Kyodo

<http://www.japantimes.co.jp/news/2013/11/27/national/nra-sets-new-safety-regimen-for-fuel-reprocessors/#.UpX-qyfj9k>

The Nuclear Regulation Authority unveiled new safety standards Wednesday for spent fuel reprocessing facilities and fabrication plants, obliging operators to take measures against severe crises, including hydrogen explosions and criticality incidents.

The standards, to take effect Dec. 18, are basically in line with those imposed on commercial reactors in light of the Fukushima No. 1 nuclear plant disaster.

Facilities the NRA will check before they reopen include a fuel reprocessing plant in Rokkasho, Aomori Prefecture, which had been expected to play a key role in Japan's fuel recycling policy.

Operator Japan Nuclear Fuel Ltd. started a trial operation of the reprocessing plant in March 2006, but a series of problems have prevented its completion.

Japan Nuclear Fuel President Yoshihiko Kawai said Wednesday the company seeks to apply for the NRA safety checks swiftly after they take effect.

“We are thinking about filing an application by the end of the year, or early next year,” he said.

Regardless, the NRA will let the plant keep accepting spent fuel from domestic nuclear plants for up to five years, as doing so is unlikely to impact the site’s risk level.

A high-level radioactive waste storage facility, also in Rokkasho, can also keep taking vitrified waste produced abroad through the reprocessing of Japan’s spent fuel.

### **NRA unveils safety rules for nuclear facilities**

[http://www3.nhk.or.jp/nhkworld/english/news/20131127\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20131127_29.html)

Japan's nuclear regulators have approved a new set of safety guidelines for nuclear facilities other than power plants.

The Nuclear Regulation Authority endorsed the guidelines at its meeting on Wednesday. The rules were compiled following the crisis at the Fukushima Daiichi nuclear power plant in 2011. They will take effect on December 18th.

The guidelines cover 247 facilities nationwide, including nuclear reprocessing plants and research reactors.

The rules require facility operators to assume stricter earthquake and tsunami standards in line with new safety guidelines for nuclear reactors implemented earlier this year.

Operators are also required to improve safety measures to prevent hydrogen explosions and uncontrolled nuclear chain reactions during emergencies.

The NRA is currently assessing the safety of 7 idle nuclear power plants that have applied to resume operation.

However, the authority says it will assess the safety of other facilities based on the new guidelines.

Japan Nuclear Fuel, the operator of a nuclear reprocessing plant in Aomori Prefecture that has yet to begin operations, hopes to apply for a safety assessment soon after the new requirements take effect.

But it is unclear how long the assessment will take, making it uncertain when the facility will be able to begin operations.

November 28, 2013

## Geologic faults investigation at Kashiwazaki-Kariwa

### Regulators plan field survey on geologic faults at Kashiwazaki plant

<http://www.japantimes.co.jp/news/2013/11/28/national/regulators-plan-field-survey-on-geologic-faults-at-kashiwazaki-plant/#.UpeSLifj9m>

Kyodo

The Nuclear Regulation Authority said Thursday it will investigate geologic faults existing at Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant as part of the safety assessment process for two reactors there.

The investigation will be conducted because the data submitted by Tepco is "insufficient," an official of the NRA secretariat told reporters after regulators held a second safety screening session on the plant's reactors 6 and 7.

Clearing doubts over possible movements of faults at the plant site is essential for Tepco to bring the two idled units back online.

All seven reactors at the plant in Niigata Prefecture are known to be sitting above small faults.

Tepco claims those faults are not active, but the official of the NRA secretariat stressed the need for a field survey, given that "a number of active faults exist in areas outside the plant site and that fracture zones run beneath the reactors (1 to 7)."

In quake-prone Japan, nuclear power plant operators are not permitted to build reactors and other facilities with important safety functions directly above faults that could move.

The NRA plans to send its staff to the Kashiwazaki-Kariwa plant early next year and order Tepco to make preparations for the on-site probe, including digging survey trenches, before the NRA starts its investigation.

During the safety screening process that started earlier this month, the NRA is also seeking further information about a key safety system that Tepco plans to install to satisfy new regulations introduced in light of the triple-meltdown catastrophe at its Fukushima No. 1 nuclear complex.

The safety equipment is a filtered venting system that can reduce radioactive substances if gas and steam need to be released to prevent damage to reactor containment vessels. But there is concern over the system's radiation exposure risk to residents living in surrounding areas.

Tepco, facing strong public distrust, has said the equipment's operational procedures will be decided based on talks with local governments. But regulators have shown wariness over assessing such procedures that could change in the future depending on talks with local governments.

## **NRA to survey nuke plant in Niigata**

[http://www3.nhk.or.jp/nhkworld/english/news/20131128\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20131128_27.html)

Japan's nuclear regulator says it will survey a power plant in Niigata Prefecture early next year to check for active seismic faults running underneath.

The Nuclear Regulation Authority made the decision on Thursday at its second meeting to assess the safety of two idled reactors at the Kashiwazaki-Kariwa facility. The plant is operated by Tokyo Electric Power Company.

TEPCO insists none of the 23 faults running under the reactor buildings are active. But the NRA says the geological data provided so far is not convincing.

It is asking TEPCO to provide a more detailed explanation by digging a large-scale trench, after the NRA survey.

The NRA says until the plan for an additional survey is in place, it will not start assessing TEPCO's new safety measures against tsunami and other natural disasters.

TEPCO Managing Director Takafumi Anegawa told reporters the company will first present the available data on those seismic faults. He said if the agency determines the data is not convincing, an additional survey will be necessary.

December 3, 2013

## **Loss of cooling could bring Tokai plutonium to boil**

### **Unprocessed radioactive waste in Tokai could explode if safeties fail**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201312030046](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201312030046)

Stockpiles of unprocessed plutonium solutions and liquid waste at a nuclear reprocessing facility in Tokai, Ibaraki Prefecture, could boil and spew radioactive substances or cause hydrogen explosions if safety devices were to fail, the Nuclear Regulation Authority says.

The assessment of the Tokai Reprocessing Plant of the Japan Atomic Energy Agency, where 3.5 cubic meters of solutions containing plutonium and the 430 cubic meters of high-level radioactive liquid waste are stored, was part of a Dec. 2 report issued by the NRA.

The reprocessing plant extracts plutonium from spent nuclear fuel for use in plutonium-uranium mixed-oxide fuel for consumption in the Monju prototype fast breeder reactor and other facilities.

The plutonium solutions are supposed to be processed into mixed-oxide powder before going into storage, whereas the high-level radioactive liquid waste is supposed to be vitrified before going into storage. But the processing equipment for those operations has remained offline since 2007, partly because of anti-seismic retrofitting and partly due to equipment glitches.

NRA investigations showed that a loss of cooling functions could allow the liquid waste to boil and spew radioactive substances in 55 hours, while plutonium solutions could boil in 23 hours.

A loss of hydrogen removal functions could cause an explosion of hydrogen generated by the radiolysis of water in the liquid waste in 38 hours and a similar hydrogen explosion in the plutonium solutions in 11 hours, the NRA added.

The JAEA plans to take 18 months to process the plutonium solutions into 640 kilograms of mixed-oxide powder and 20 years to process the high-level radioactive liquid waste into 630 vitrified products.

The processing equipment can be restarted only after clearing the government's new regulatory guidelines, which are expected to take effect Dec. 18.

In view of the risk involved in leaving the liquid waste unprocessed, however, the JAEA has requested a special exemption to allow the agency to operate the equipment even before it passes the safety screenings.

The NRA is expected to review the request.

## **Rokkasho needs further 200 billion yen for safety measures**



## **Aomori nuclear fuel plant needs another ¥200 billion for safety measures**

Jiji

<http://www.japantimes.co.jp/news/2013/12/03/national/aomori-nuclear-fuel-plant-needs-another-%C2%A5200-billion-for-safety-measures/#.Up787ifij9k>

Japan Nuclear Fuel Ltd. plans to spend around ¥200 billion for additional safety measures at a plant to reprocess spent nuclear fuel in the village of Rokkasho, Aomori Prefecture, sources said Tuesday.

The measures are designed to meet the new safety standards for nuclear fuel facilities that will come into force Dec. 18.

The additional costs are expected to be borne by JNFL shareholders, including power utilities operating nuclear power plants, and could help push up electricity rates.

Tokyo Electric Power Co., which has the largest stake — 28.6 percent — in JNFL, is expected to incur more than ¥60 billion of the bill.

JNFL plans to apply for a safety inspection, a prerequisite for starting operations at the plant, with the Nuclear Regulation Authority as soon as the new standards take effect.

The measures will safeguard the plant against severe accidents, such as natural disasters. JNFL hopes to start operations in autumn 2014 at the earliest.

The reprocessing plant, which is a key part of the country's nuclear fuel cycle program, removes plutonium and uranium from spent nuclear fuel for reuse. It was initially scheduled to start operations in December 1997, but a string of problems has forced the company to postpone operations as many as 20 times.

Construction costs totaling ¥2.2 trillion have been included in costs to calculate electricity rates at power utilities operating nuclear power plants.

The planned additional spending will raise total construction costs by around 10 percent.

December 5, 2013

## **NRA wants more evidence at Mihama plant**

### **Nuclear regulators request further seismic data**

[http://www3.nhk.or.jp/nhkworld/english/news/20131205\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20131205_32.html)

Officials from Japan's Nuclear Regulation Authority have asked the operator of a plant to submit more evidence that an active seismic fault will not affect other faults beneath the site.

The active fault runs about a kilometer east of the Kansai Electric Power Company's Mihama power plant in Fukui Prefecture. Scientists say that if the active fault moves, it could affect 9 confirmed faults under the plant, including one below a reactor.

At a meeting of the NRA on Thursday, officials from Kansai Electric said that their own surveys show that the faults haven't moved for the last 120-thousand years. They say that this does not meet the definition of

being active.

They added that the faults will not be influenced if the active fault moves.

Regulation officials asked the power company to clearly determine when the faults last moved and submit more detailed data about their relation with the active fault.

The officials will start spot inspections of the Mihama plant on Saturday.

They will also visit 5 other plants across Japan to survey faults under the facilities.

Operators of these nuclear power plants want to restart the facilities after passing safety checks. The plants have been shut down since the accident in 2011 at the Fukushima Daiichi plant.

### **Nuclear regulators request further seismic data**

[http://www3.nhk.or.jp/nhkworld/english/news/20131205\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20131205_32.html)

## **(US) NRC: Underground storage only reduces the uncertainty**

### **INTERVIEW/ Allison Macfarlane: Waste disposal plan key to nuclear power option, says NRC chief in U.S.**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201312050014>

WASHINGTON--Countries that are set on generating nuclear power would be well advised to think first about how they intend to dispose of the nuclear waste.

So says Allison Macfarlane, chairman of the U.S. Nuclear Regulatory Commission.

"I encourage countries that are just embarking on nuclear power to make sure that they have a plan for disposal, before they turn on the reactor," Macfarlane said, noting that Japan has been grappling with this issue for many years.

In a wide-ranging interview with The Asahi Shimbun, she discussed the NRC's continuing efforts to craft regulations to ensure the safety of the nuclear power industry in the United States.

Macfarlane also discussed changes in nuclear energy regulation since the Fukushima nuclear disaster in 2011, prospects for international cooperation on nuclear energy and the NRC's ability to remain independent while maintaining a functional relationship with the industry.

Excerpts of the interview follow:

\* \* \*

**Question:** In Japan, all nuclear reactors are offline now. And some politicians, like former Prime Minister Junichiro Koizumi, say it is irresponsible to restart the nuclear power plants without having a plan for final disposal of nuclear waste. What do you think of that argument?

**Answer:** I encourage countries that are just embarking on nuclear power to make sure that they have a plan for disposal, before they turn on the reactor.

Because, I think if you look at the history and experience of countries that didn't have that plan in place, which is most countries with nuclear power reactors, it hasn't been an easy path to a solution.

**Q:** How about in the case of Japan?

**A:** I think Japan has been wrestling with this question for a long time.

**Q:** On the issue of final disposal, the Blue Ribbon Commission on America's Nuclear Future reviewed the policies for managing the back end of the nuclear fuel cycle and recommended a new plan. It proposed that the International Atomic Energy Agency (IAEA) start a new initiative to explore the creation of one or more multinational spent fuel storage disposal facilities. As a member of the blue ribbon panel, could you comment on that?

**A:** I think the Blue Ribbon Commission did a good job. The idea of multinational repositories has been thought about for many, many years, and not succeeded. That's not to say it can't, but it's not so easy. It's not easy to get one, just in one's own country.

**Q:** But you still believe it is an option that should be further explored?

**A:** I think all options should be on the table.

**Q:** As stated in the Blue Ribbon Commission report, this kind of attempt should be explored with active U.S. participation. Is that correct?

**A:** It depends. I think what will probably work better, just my own personal view, is a regional repository, not a global one.

**Q:** Like in Asia or other regions?

**A:** Some place. I'm not sure where. Perhaps several smaller countries that share a nuclear plant might get together.

**Q:** How about Northeast Asia?

**A:** Maybe. But, it might be difficult. **I don't know.**

**Q:** With regard to plutonium, the Japanese government, as you know, maintains its policy of spent fuel reprocessing in spite of its excess plutonium stockpiles. What do you think of the continuity of this policy, from a global and regional nonproliferation perspective?

**A:** It's up to Japan what to do. I just would remind people that reprocessing is a management choice in dealing with spent fuel. It's not a solution to the waste problem because you still need a repository. France is the prime example. They are in the process, right now, of a national debate on the siting of a repository.

**Q:** How about from the view of nonproliferation?

**A:** You know, separated plutonium is certainly an issue, in terms of nonproliferation. It's a concern. It's a concern for state and non-state actors.

**Q:** Personally, I believe that Japan will never try to develop nuclear bombs. But is it still a concern?

**A:** One also always has to be concerned about non-state actors. Japan is a country that has experienced terrorist attacks by Aum Shinrikyo cult members. We aren't immune to these kinds of situations.

**Q:** With regard to final disposal issues, what is your perspective on sites for final disposal of nuclear waste? Do you think a geological repository is the safest avenue?

**A:** I think that geologic repositories are the solution to the problem of high-level waste, yes.

**Q:** Why?

**A: We don't have a lot of good alternatives.** This is an international consensus; this isn't anything surprising. The alternatives that have been discussed--shoot it out into outer space? There's a one-word response to that: "Challenger."

The Challenger Space Shuttle experienced a catastrophic explosion on the way up. We don't want that. Put it in deep seabeds, international waters? There are international treaties against dumping radioactive material in international water, so that's not going to happen.

So, what else are you going to do with it? This idea of transmutation, you still end up with radionuclides that have half-lives on the order of 30 years. That means you need hundreds of years of storage.

You can't eliminate the material, so you need to remove it from the environment near humans. And the best way to do that is with some deep-mined geologic repository.

Let me tell you my personal view on this. We have a choice. It's very simple. We either leave the stuff above ground for hundreds of years, or we put it below ground.

If we leave it above ground, we have absolutely no guarantees that somebody is going to be there and change it and take care of it for 10,000 years. So, there is a high likelihood that it will get into the environment at some point in time.

If we put it underground, we have reduced the uncertainty that that will happen. That's our choice.

**Q:** OK. But, you can't say that a geological repository is safe, can you?

**A:** You probably can't say that anything is 100 percent safe. Drinking a bottle of water is not 100 percent safe. But, you can say it's "safer" than leaving spent nuclear fuel above ground forever.

**Q:** With regard to the Fukushima No. 1 nuclear accident, do you think that the response by the Japanese government and Tokyo Electric Power Co. (TEPCO) to this crisis has been appropriate?

**A:** You know, this was a terrible accident and nobody would wish it on anybody. And I know that much of the Japanese energy has been focused on dealing with this. We meet fairly regularly with the Nuclear Regulation Authority people, and with Chairman (Shunichi) Tanaka. They're just one year old, and they've had to develop a whole new set of standards. So, we're providing assistance, when asked.

**Q:** What lessons has the NRC learned from the Fukushima disaster?

**A:** For the United States, there were a number of them. One was that you have to be prepared for more than one reactor core to melt down at once. Also, you have to be prepared for prolonged station blackout--the loss of offsite power. You have to be prepared for, and definitely update, your understanding of natural hazards.

**Q:** The NRC issued a Mitigation Strategies Order on March 12, 2012. It required all U.S. nuclear power plants to implement strategies that will allow them to cope without their permanent electrical power sources for an indefinite period. What does indefinite mean in this case?

**A:** Really "indefinite" means indefinite. Just go on a long time. They should be able to survive and be able to cool the core and bring the temperatures down, and maintain safety.

**Q:** In Japan, in terms of a battery system, it is just 24 hours per backup battery, and diesel generators just one week.

The NRC is trying to come up with a new ruling about Station Black Out (SBO) mitigation. Eventually, it will require plants to have sufficient procedures, strategies and equipment to cope with a loss of power for an indefinite period. Do you have a specific timeline for that rule?

**A:** You know, our staff is working on the rule-making and so that hasn't been finalized yet. So, we'll see what they come up with. That rule-making won't be done until 2016.

There is no universal requirement for the operating life for batteries or diesel generators. It is site-specific, based in part on the equipment on-site at a particular plant. For example, some reactors have special station blackout diesel generators which would automatically be engaged in the event of a loss of offsite power, thereby bypassing the need for batteries. The requirement for battery life is tied to the plant's ability to restore power. This is one of the reasons we are revising the SBO rule as part of our post-Fukushima efforts. The revised rule will still have some site-specific requirements, but will be more universal.

**Q:** Still, to deal with a prolonged SBO, this rule-making is very important, isn't it?

**A:** Yes. But, the orders we made are also very important: the SBO mitigating strategies order. Because that means everybody has to comply with that order. They don't get a choice. And the rule-making will codify what's in the order and make it apply to all plants in the future.

**Q:** How about multiple unit failures? What is your strategy in terms of emergency preparedness? What new measures, or strategies, do you have in place to deal with such contingencies?

**A:** For emergency preparedness? We are in the process of doing a rule-making on that, so I don't know that there's anything specific to tell you about that yet, but it's something that we are working on.

**Q:** What do you think makes a difference between a one unit accident and a multi-unit accident?

**A:** Obviously, multi-unit accidents draw your attention to multiple places. And, if you're going to have radioactive releases from a multi-unit accident, it can increase the release.

**Q:** Do you mean that a broader public health strategy is required?

**A:** We'll be considering these issues. I don't want to say much because it hasn't come up to the Commission yet.

**Q:** Is there still something you could learn from the accident, or from Japan?

**A:** I think there's a lot to learn. For instance, I think under the auspices of the Nuclear Energy Agency (NEA) based in Paris, there's going to be an international team trying to get all the information that comes out of the melted reactor cores, to try to understand how the accident progressed and how quickly it progressed, et cetera. So there is an international team that's working with the JNRA, on this, as well as with TEPCO, et cetera.

**Q:** Clearly, you regard information about that kind of accident sequence as very important?

**A:** Certainly. It's important to understand how it progresses, how quickly it progresses, what happens when. It helps us understand, and refine our models of accident progress, so that we can regulate better.

**Q:** Do you think that the decommissioning of these damaged plants could be done more efficiently through a more internationalized effort? That would allow the gathering of a higher level and wider range of knowledge and technologies, don't you agree?

**A:** My understanding is there is more of an international effort now. There's this International Research Institute for Nuclear Decommissioning (IRID) now in Japan. And I know that the IAEA is now working with TEPCO to measure radiation in the water, et cetera, off of the coast.

In general, you know, I'm a researcher, and one should try to understand all the possible solutions out there. I think the United States has a fair bit of experience dealing in cleanup, because the nuclear weapons complex made a big mess. So, the Department of Energy has a lot of experience cleaning up radioactively contaminated sites. We would be happy to provide any additional help.

**Q:** Can you use or apply knowledge and experience you have gained from the military?

**A:** Yes, from the nuclear weapons complex. Because some of these sites, the Hanford site which used to produce plutonium for atomic bombs, then the Savannah River site, the Rocky Flats ... they are also facilities to produce nuclear materials for nuclear weapons. You know, we have cleaned up some of these sites. Rocky Flats was entirely decommissioned. And, of course, there's Three Mile Island. We did remove the fuel from that reactor.

**Q:** Well, the next question is also about emergency preparedness. In the United States, before a plant is licensed to operate, it is said the NRC must have "reasonable assurance" that adequate protective measures can and will be taken in the event of a radiological emergency. And also, the NRC needs to confirm that the area response organization and licensees can effectively implement those emergency plans. This seems to be very strict in terms of protecting public health. In the case of Japan, regulations set by Japan's Nuclear Regulation Authority do not require a full-blown emergency preparedness drill before licensing.

**A:** Oh, really? I didn't know. It's not required to exercise emergency preparedness?

**Q:** They provide guidelines, and the local government decides about emergency preparedness. So no full-scale exercise is required for the operation of nuclear power plants.

**A:** We are practicing emergency preparedness, but we're also practicing what happens at the plant. What we regulate is within the plant boundaries, and then any actual emergency preparedness activity, where the population is told to evacuate or not, that is simulated without actual evacuations. The order to evacuate would be given by local authorities, although we would be consulting with them. So, I just want to be clear about that. Also, when an accident event goes outside the plant boundary, the Federal Emergency Management Agency (FEMA) assumes our government's response authority, again with our assistance.



**Q:** And, in the case of the NRC ruling, without a plan and without a successful exercise, full-size exercise, you cannot give a license to the utilities?

**A:** Yeah, I don't think so. They are required to do this. And they are evaluated and we evaluate ourselves, too. Everybody's performance is evaluated.

**Q:** How about a restart after routine checks and refueling? If they do not do the full-scale exercise, even after two years, you do not permit them to restart?

**A:** Plants are required to have an emergency exercise every two years, whether they are generating power or are offline for any reason. Whether an exercise would be required for a restart depends on the reason the facility was shut down, and whether or not the circumstances of the shutdown affected the status of onsite and offsite emergency preparedness. If both the NRC and FEMA continue to have reasonable assurance that the licensee, as well as the offsite authorities, can implement their plans and provide adequate protective actions in the event of an emergency, there would be no need to conduct a special emergency exercise.

**Q:** So, that is a big difference between Japan and the United States?

**A:** Right.

**Q:** And, the question is, don't you think that this kind of NRC model is preferable for safety, public safety?

**A:** We think we have a good model.

**Q:** Other countries should follow suit?

**A:** We think we have a good model. We know other countries do it differently. You know, nobody has to do everything exactly like we do it.

**Q:** Why is the requirement for the radiological emergency radius so strict? Is it due to public concern, or because of political reasons?

**A:** I don't know that I can answer that completely, without doing a thorough analysis. But, you know, the regulations changed, and I'm not a real scholar on this issue. But, the regulations changed after Three Mile Island, and there were significant new requirements on emergency preparedness, both for us and for the licensees, and so that experience really made a lot of changes. We made a lot of changes, maybe too many all at once.

**Q:** I am interested in how you and your organization maintain independence from the nuclear industry.

**A:** Ah, yes, that's a good, important, question.

**Q:** By the way, I had an interview with the former Chairman, Dr. Gregory Jaczko, last February, and he told me that there was tremendous pressure from the industry. For example, he mentioned discussions or questions, something like that, and he termed it as very "pervasive."

So, I'm wondering whether you feel the same kind of pressure from the industry, and how you cope with that.

**A:** I'll say, right at the outset, that I think one of the most valuable assets that the Nuclear Regulatory Commission has is its independence, its independence from everybody.

You know, we have one mission, and I am convinced that our staff here is focused on that mission, and that is to make sure that the facilities operate safely and securely and that we protect public health.

And industry has views, and the public has views, and I personally try to hear them all. In terms of how to remain independent, you need the backing of the government. The government has to give you that authority, and they have to give you the resources that you need to carry out your job, and they need to give you the support, and the respect.

**Q:** What is important for gaining public trust?

**A:** We try to do things as transparently as possible. We publish almost everything we write, and make it available to the public. We have a lot of public meetings.

Some of them have lasted four hours, five hours. Hundreds of members of the public have shown up, and we've made sure that everybody gets a chance to say what they want to say.

And we also have meetings. I meet with industry and the public. So, for instance, a couple weeks ago we were up visiting the Seabrook Nuclear Power Plant, and the Pilgrim Nuclear Power Plant. Seabrook is in New Hampshire and Pilgrim is in Massachusetts. And, at both of those facilities, I had the opportunity to walk around the site. I had the opportunity to interact with the management at the facility, hear from them.

But, I also made sure that there was time to meet with the local public interest groups afterward, and also the local elected officials and state representatives. So those meetings are very important. I try to make sure I hear from everybody.

It's important for our staff to have a working relationship with the industry. We need to hear their concerns, and we need to be able to talk with them, when we have concerns. Sometimes they'll submit an application for something or a license amendment, and we have a lot of questions. Maybe it's not complete.

We will tell them. You can pick up the phone and say, "This is not working." So, you need that kind of relationship.

We don't lose track of the fact that we are the regulator, but folks here really have an eye on the mission.

**Q:** There are resident inspectors at each plant, right?

**A:** We have at least two resident inspectors at each plant, and they're always watching. And they don't have a friendly relationship with the industry. We have a strict policy for personal relationships with licensees. They are not allowed to have lunch with the industry people or to go to their Christmas party, or to do anything like that. They have to stay separate. They also move periodically. They are not allowed to stay in one place for more than seven years. These resident inspectors are also an important resource to gain public trust.

\* \* \*

Allison Macfarlane was sworn in as chairman of the U.S. Nuclear Regulatory Commission on July 9, 2012. She is an expert on nuclear waste issues and holds a doctorate in geology from the Massachusetts Institute of Technology and a bachelor's of science degree in geology from the University of Rochester. Prior to beginning her term as the NRC's chairman, Macfarlane was an associate professor of environmental science and policy at George Mason University in Fairfax, Virginia.

(This interview was conducted by Fumihiko Yoshida, deputy director of The Asahi Shimbun's Editorial Board, and Shiro Namekata, a Washington-based correspondent of The Asahi Shimbun.)

December 7, 2013

## Survey of faults at Mihama plant

### Fault survey begins at Mihama plant

[http://www3.nhk.or.jp/nhkworld/english/news/20131207\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20131207_20.html)

Japan's Nuclear Regulation Authority has begun a 2-day survey of faults running beneath a nuclear plant in Mihama, Fukui Prefecture.

Nine seismic faults have been confirmed under the compound of the Mihama plant, including one just below a reactor.

Scientists say the faults could shift simultaneously with an active fault running about a kilometer east of the plant.

NRA official Kunihiro Shimazaki and 4 other experts observed faults dug out of the ground near the reactor buildings at the plant on Saturday morning.

Their survey is the first at the Mihama plant, which belongs to Kansai Electric Power Company. The utility has said the faults within the compound have not moved in the last 120,000 to 130,000 years. It says this means that the faults should be defined as inactive and that there is no possibility they will move again.

The Mihama plant is one of 6 plants across Japan that are subject to the Nuclear Regulation Authority's plan to survey underground faults.

The NRA has already concluded that a fault running under a reactor at the Tsuruga plant in Fukui Prefecture is active, and its Number 2 reactor is likely to be decommissioned. The NRA has given broad approval of a draft report that says a fault beneath the Ohi plant in the same prefecture is inactive.

Reactors on faults found to be active may have to be scrapped. Government guidelines prohibit construction of key nuclear plant facilities over active faults.

December 9, 2013

## Mihama plant: more data needed

### **Nuke authority seeks additional Mihama plant fault data from KEPCO**

<http://mainichi.jp/english/english/newsselect/news/20131209p2a00m0na008000c.html>

A team of experts from the Nuclear Regulation Authority (NRA) wrapped up two-day on-site investigations on fault lines under the Mihama Nuclear Power Plant in Fukui Prefecture on Dec. 8, but stopped short of determining whether the fault lines are active or not, citing lack of information.

The NRA requested plant operator Kansai Electric Power Co. (KEPCO) to submit additional data on the fault lines, citing a shortage of information for the agency to reach a conclusion. If the fault lines are determined to be active, the plant likely faces decommissioning. KEPCO has heretofore maintained in its report that the fault lines are not active.

There are nine fracture zones under the nuclear plant's premises. Six of them run directly underneath the buildings for the No. 1 to 3 reactors. There is also a 15-kilometer active fault line running from north to south, called the "Shiraki-Nyu fault line," about one kilometer to the east. Some experts have pointed out the possibility of the fracture zones under the plant moving in tandem with the fault line.

The five-member research team, including NRA acting chairman Kunihiro Shimazaki, investigated the relationship between the fracture zones and the Shiraki-Nyu fault line by observing the geological formations between them on Dec. 8.

After the survey, Shimazaki said, "It's not that our investigations are over. We need a little more data before making a conclusion (over whether the fault lines are active)."

The NRA is demanding KEPCO submit the additional data before an evaluation meeting scheduled for the beginning of next year and will ask the utility to conduct additional surveys if necessary.

The Mihama plant's suspected active fault issue emerged during a review of fault lines on the plant's premises by the now-defunct Nuclear and Industrial Safety Agency under the Ministry of Economy, Trade and Industry in the wake of the March 2011 Great East Japan Earthquake and the ensuing Fukushima No. 1 Nuclear Power Plant disaster. Regulations forbid the construction of key nuclear plant structures directly above active fault lines.

December 10, 2013

## Black boxes needed for nukes

Inconvenient truths: Kiyoshi Kurokawa, who last year led a Diet panel that investigated the Fukushima nuclear calamity, is interviewed in Tokyo.

### **Nuke 'black box' needed: investigator**

<http://www.japantimes.co.jp/news/2013/12/10/national/nuke-black-box-needed-investigator/#.Uqcdrifj9k>

BY MATTHEW WINKLER AND YURIY HUMBER  
BLOOMBERG

The global nuclear power industry needs to share cross-border information to prevent accidents, replicating the transparency of international air traffic control, said the head of the investigation into the disaster at the Fukushima No. 1 power plant.

Nuclear plant operators and regulators need an international common language and standard for investigating and preventing disasters, Kiyoshi Kurokawa, who headed the Fukushima Nuclear Accident Independent Investigation Commission, one of the panels that investigated the calamity, said in an interview last week in Tokyo.

The airline industry offers a model in the use of flight and voice data recorders, known as black boxes, as a globally accepted means of recording and investigating accidents, he said. The transparency derived from intrusive international oversight in the nuclear industry is necessary to prevent the collusion that contributed to the Fukushima disaster, Kurokawa said. That isn't happening yet with the Nuclear Regulation Authority.

"Japan's Nuclear Regulation Authority seems very isolated" not only from the domestic power industry but also from counterparts abroad, he said. "Isolation in one nation is a very dangerous thing."

Kurokawa, 77, a professor at the National Graduate Institute for Policy in Tokyo, was special adviser to the Cabinet and Japan's representative at the World Health Organization. He is a former dean of Tokai University School of Medicine, and professor at Tokyo University School of Medicine and the medical school at the University of California at Los Angeles.

He led a six-month investigation into the catastrophe at Tokyo Electric Power Co.'s Fukushima No. 1 atomic station.

He won wide-ranging subpoena powers, giving his team of 10 commissioners unprecedented authority to conduct the investigation. He also insisted on public hearings, which saw former Prime Minister Naoto Kan and then-Tepco President Masataka Shimizu offer conflicting accounts of the disaster response.

Kurokawa's report released in July 2012 was scathing in its account of events leading up to March 11 and the response that followed, calling the disaster man-made and citing "collusion" between Tepco and its previous regulator, the Nuclear and Industrial Safety Agency, to avoid implementing new safety rules.

"Across the board, the commission found ignorance and arrogance unforgivable for anyone or any organization that deals with nuclear power," the report said.

While the report won acclaim abroad, including an award for Kurokawa from the American Association for the Advancement of Science in 2012, its findings were mostly ignored at home, with bureaucrats unable or unwilling to grasp its call for more outside-the-box thinking, he said.

The government has followed through on at least one of the report's recommendations by setting up an independent nuclear watchdog. The NRA was established last year and now has more than 500 staff. It also has control over three other organizations that employ experts to research and monitor nuclear energy.

Still, the NRA needs more international experience and should send staff abroad to learn best practices, gain experience and create links to other nuclear regulators, said Kurokawa.

"The NRA has been exchanging information with foreign regulators such as the NRC and the ASN to enhance mutual understanding and competency," said Tadashi Yamada, spokesman for the NRA's policy

review and public affairs division, referring to the U.S. Nuclear Regulatory Commission and France's nuclear safety authority.

While the NRA's legal independence is a step in the right direction, it needs to be more transparent about what it's doing, Kurokawa said.

That's especially important as Prime Minister Shinzo Abe seeks to restart some of the country's 50 reactors, he said.

The prime minister is attempting to get the economy growing and dealing with national security policies, so the mess at Fukushima, where the world's largest cache of molten nuclear fuel lies trapped beneath the wreckage of reactor buildings, is "maybe not top of the agenda for Abe," Kurokawa said.

The nine regional nuclear power utilities retain strong influence in politics and are lobbying to delay by several years legislation to split the country's grid from generating plants, Kurokawa said.

The utilities dominate generation, distribution and transmission of electricity in their respective areas and that is preventing competition from new suppliers.

A global nuclear regulator's network would help on this issue as it could defend such deregulation efforts in the face of corporate and bureaucratic lobbying, he said.

Restarting nuclear power is partly an economic benefit for Abe and his administration, which needs to bring down the increased spending on fossil fuel imports to run power plants.

As Abe champions the restarts, Japan should at least compile a ranking of its nuclear plants by age, safety measures and earthquake risks to make sure the units that are switched back on are the safest ones, Kurokawa said.

Japan's response to Fukushima will be an example for nations newly embracing atomic energy such as Jordan, Nigeria and Saudi Arabia. Having a global regulator advisory network would also help ensure greater safety, Kurokawa said.

One step Japan has taken in terms of closer international cooperation is agreeing to form an information exchange network with South Korea and China despite recent tensions between the three countries.

The nations will set up special e-mail accounts to share information on nuclear accidents and invite each other to attend emergency preparedness drills, according to a copy of the agreement provided by the NRA. Dedicated video-conference capabilities between nuclear regulators in the three countries for use in emergencies are also being considered.

Japan has also taken preliminary steps toward opening up the nuclear industry to foreign advisers and companies, requesting solutions for cleaning up Fukushima, Kurokawa said.

"Once you start discussing things, additional advice may come," he said. "As the process becomes transparent, open sourced, you can see what will be the fastest, most cost-effective and scientific way to implement answers."

December 18, 2013

## New survey at Tsuruga plant

### NRA to conduct new survey at Tsuruga No.2 reactor

[http://www3.nhk.or.jp/nhkworld/english/news/20131218\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20131218_31.html)

Japan's Nuclear Regulation Authority has decided to conduct a fresh geological survey at Tsuruga nuclear power plant in Fukui Prefecture to determine whether a fault beneath the compound is active.

The authority said in May that the fault running beneath the plant's No.2 reactor has the potential to move. That finding has prevented the reactor's restart and may lead to it being scrapped.

On Wednesday, the plant's operator, Japan Atomic Power Company, presented the authority with new evidence that contradicts these findings.

It includes analysis of volcanic ash deposits in layers around the fault, and data showing that the fault under the reactor is not linked to the fault that experts say could shift.

Authority chief Kunihiro Shimazaki said the new data needs be studied, and that the body will reexamine the site with experts early next year.

Government safety standards do not allow nuclear reactors to operate directly above an active fault.

But the agency has said its judgment could be changed by new findings.

### **Panel will discuss whether Tsuruga reactor fault ruling needs rethink**

<http://mainichi.jp/english/english/newsselect/news/20131218p2g00m0dm082000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority on Wednesday decided to have a panel of experts discuss whether there is a need to rethink its earlier judgment that a geologic fault beneath the No. 2 reactor at the Tsuruga nuclear power plant is active.

The NRA feels the need to do so because plant operator Japan Atomic Power Co. compiled "a certain amount of new data" after the NRA decided in May that the fault in question has potential to move in the future, NRA commissioner Kunihiro Shimazaki said.

Japan Atomic Power has not accepted the NRA's assessment, which will leave the company with no option but to scrap the No. 2 unit. But its explanations have not changed in essence, indicating a major revision of the NRA's judgment is unlikely.

In quake-prone Japan, utilities are not allowed to build facilities important to safety directly above a fault that has shown movement in the last 120,000-130,000 years.



The NRA acknowledged in May that a zone of rock fragments called D-1, running directly beneath the No. 2 reactor, is an active fault based on the findings of a large-scale trench excavation.

The trench was created in the direction of where D-1 is expected to be running. The NRA said it cannot deny that one of the faults found in the trench, called "K," moved in the last 120,000-130,000 years and that Fault K is linked with Fault D-1.

But Japan Atomic Power has insisted D-1 is not active, citing the age of a very small amount of volcanic ash deposited in a layer and other information.

"We have to check whether the data (presented by Japan Atomic Power) will affect our judgment. We would respond carefully, but in a swift manner," Shimazaki said during Wednesday's meeting of commissioners.

Shimazaki and other members of the panel plan to visit the Tsuruga power station in Fukui Prefecture for a field survey, possibly in January. A preparatory meeting will be held ahead of the on-site investigation.

## New safety rules

### New safety rules for nuclear facilities introduced

[http://www3.nhk.or.jp/nhkworld/english/news/20131218\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20131218_05.html)

Japan has introduced a new set of safety guidelines for nuclear fuel processing plants and other facilities handling radioactive materials.

The guidelines that took effect on Wednesday cover 248 facilities across Japan, including spent fuel reprocessing plants. Nuclear power plants are subject to another set of regulations.

The Nuclear Regulation Authority, or NRA, drew up the guidelines with experts in response to the Fukushima Daiichi nuclear accident in March 2011.

Operators of fuel processing plants have to come up with measures to prevent serious accidents such as hydrogen explosions and unintended nuclear chain reactions.

They also need to make stricter estimates for earthquakes and tsunami that could hit their facilities.

The guidelines require the operators of research reactors and facilities to take steps to prevent accidents

that could cause the release of radioactive materials into the air.

Most facilities covered by the guidelines now have to employ the latest technology and knowledge.

The NRA will conduct safety checks of the facilities, but it has not decided the details yet.

### **Stricter Nuclear Safety Regulations (NHK video)**

<http://www3.nhk.or.jp/nhkworld/newslines/201312182005.html>

December 20, 2013

### **Onagawa 2 applies for safety screening**

#### **Tsunami-affected reactor to apply for safety check**

[http://www3.nhk.or.jp/nhkworld/english/news/20131220\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20131220_16.html)

Tohoku Electric Power Company plans to apply for a government safety screening of one of the reactors at its **Onagawa plant** within this year, with a view to restarting it.

Sources say the utility, based in Sendai City, northeastern Japan, is planning to file the application with the Nuclear Regulation Authority for Reactor Two at the plant, on the Pacific coast in Miyagi Prefecture.

All three of the plant's reactors shut down automatically during the 2011 earthquake and tsunami and have since remained offline. The seawater pumps for cooling the reactors were flooded in the tsunami.

The utility has since been beefing up measures to protect the plant from earthquakes and tsunami.

It has installed large-capacity power generators on higher ground and is building 29-meter sea walls.

The sources say that the documents required for a safety screening of Reactor Two are now ready.

The application would be the first for a reactor affected by the 2011 disaster.

Tohoku Electric Power hopes to restart the reactor after finishing the sea walls by March of 2016 and obtaining the consent of local governments.

Reactor Two at Onagawa is of the same boiling-water type as those at the crippled Fukushima Daiichi plant. The Onagawa plant is located about 120 kilometers north of that plant.

Tokyo Electric Power has filed restart applications for two reactors at its plant in Niigata Prefecture, while Chugoku Electric Power is planning to file for one at its Shimane plant by the year's end.

### **Utility to request safety check of nuclear reactor**

[http://www3.nhk.or.jp/nhkworld/english/news/20131220\\_10.html](http://www3.nhk.or.jp/nhkworld/english/news/20131220_10.html)

Local governments hosting a nuclear plant in western Japan will allow its operator to file for the state's safety screening of one of its reactors.

Shimane Prefecture and Matsue City government officials will convey their approval to Chugoku Electric Power Company President Tomohide Karita next Tuesday.

The local governments made the decision after soliciting views from their assemblies and residents over the request filed by the utility in November.

A safety test by the state's Nuclear Regulation Authority, or NRA, is a prerequisite for restarting the Number 2 reactor of the Shimane plant. The reactor was suspended for routine inspections in January last year and has been offline ever since.

With the local green light, the utility plans to ask the NRA for a safety check by the year-end.

It will be the second filing for safety screening of a boiling-water reactor following that for 2 reactors at the Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture. The stricken Fukushima Daiichi nuclear plant has the same type of reactors.

The governments of Shimane Prefecture and Matsue City plan to decide whether to endorse the safety assessment by the NRA after hearing from the state, the utility and neighboring municipalities.

Another utility firm, Tohoku Electric Power Company, is studying whether to file for safety screening of the Number 2 reactor at the Onagawa nuclear plant in Miyagi Prefecture within this year. The plant suffered damage from the earthquake in 2011.

**Still no nuclear evacuation plans for 60% of municipalities within 30 km of a plant**

## **60% of municipalities lack nuclear evacuation plan**

[http://www3.nhk.or.jp/nhkworld/english/news/20131220\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20131220_34.html)

Sixty percent of Japanese municipalities located within 30 kilometers of a nuclear power plant have yet to draw up evacuation plans in case of a nuclear accident.

The figure was reported on Friday at a meeting of a government panel on nuclear disaster preparedness.

Officials said 82 out of the 135 municipalities had not finished compiling evacuation plans as of December 2nd.

Many municipalities face difficulties finding evacuation centers outside their boundaries and securing the means to evacuate elderly people from hospitals and care facilities.

The government plans to help local authorities finish the planning work by using regional consultative councils. Such bodies consist of officials from government ministries and agencies related to disaster response.

The Fukushima nuclear meltdown accident in 2011 prompted the government to ask the municipalities to draw up evacuation plans.

December 23, 2013

## **US robot could be used in Fukushima**

### **Robots compete at U.S. trials to work at sites like Fukushima plant**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201312230001>



A team from SCHAFT Inc. prepares its two-legged robot entry at the Defense Advanced Research Projects Agency's (DARPA) Robotics Challenge in Homestead, Fla., on Dec. 21. The Japanese robotics firm won the two-day trials. (Shiro Namekata)

REUTERS

HOMESTEAD, Florida--As a squat, red-and-black robot nicknamed CHIMP gingerly pushed open a spring-loaded door a gust of wind swooped down onto the track at the Homestead-Miami Speedway and slammed the door shut, eliciting a collective sigh of disappointment from the audience.

The robot, developed by the Tartan Rescue team from the National Robotics Engineering Center at Carnegie Mellon University, was one of 17 competing in the U.S. military's Defense Advanced Research Projects Agency's (DARPA) Robotics Challenge.

The agency, which funded basic science research for now commonplace technologies like the Internet and global positioning satellites, hopes the competition will spur the development of robots that can work in places too dangerous for humans.

The challenge was launched in 2011 in response to the meltdown of the Fukushima No. 1 nuclear power plant after it was hit by a massive earthquake-spawned tsunami. Nearly 160,000 people were forced to flee the area.

The backup power systems needed to cool the plant's reactors failed and an emergency team from Tokyo Electric Power Co. was unable to enter the damaged reactor building due to the intense radiation.

DARPA sent robots designed to disarm improvised explosive devices in Iraq to Japan, yet by the time workers were trained to use them it was too late to prevent a nuclear meltdown.

"What we realized was ... these robots couldn't do anything other than observe," said Gill Pratt, program manager for the DARPA Robotics Challenge. "What they needed was a robot to go into that reactor building and shut off the valves."

Hydrogen continued building in the days that followed, fueling a massive explosion.

During the two-day trials at a south Florida professional race car track, the platoon of robots faced obstacles designed to mimic the challenges following a disaster. Robots had to cut through a reinforced concrete wall, navigate debris-strewn terrain and locate and turn off leaking valves. Officials from DARPA also disrupted the link between robots and their operators, further simulating a disaster.

The eight teams with the highest scores will be awarded \$1 million in funding to prepare for the final round in late 2014, where a winner will take \$2 million.

While Carnegie-Mellon's CHIMP eventually opened the door, leading the field on Dec. 21 was a two-legged robot from Japan's team SCHAFT, which finished first in the test, according to the DARPA Challenge website.

The Florida Institute for Human and Machine Cognition, based in Pensacola, Florida, took second place. Third went to Carnegie Mellon and CHIMP.

Successes in the challenges are about as common as failures. Many robots tumbled off an industrial ladder designed to test sight and balance.

"Murphy's law is very big in robotics," said Daniel Lee, a robotics professor at the University of Pennsylvania and program director for Team THOR, an agile, human-form robot, whose acronym stands for Tactical Hazardous Operations Robot. "It's very difficult to account for all of the uncertainties that you're going to face," he said.

A handful of teams, including ones from the Massachusetts Institute of Technology and Lockheed Martin, used a six-foot-two-inch, 330-pound humanoid robot named Atlas that DARPA contracted from Boston Dynamics, a company that was spun out of MIT in 1992 and recently acquired by Google.

A team from NASA's Johnson Space Center competed with a robot called Valkyrie covered in white plastic and vinyl, looking like a human wearing a robot suit.

Some robots looked highly mechanized, while others had four legs and resembled a dog.

"The goal is to make it comfortable for people to work with and to touch," said Christopher McQuin, NASA's chief engineer for hardware development.

After the final round next year Pratt said there are plans for another robotics challenge, possibly to be hosted in Japan.

For the next advance in robotics, he said, "the amount of intelligence inside the robots needs to be able to handle small tasks."

"We don't want to burden human operators with saying put your foot here, put your other foot here, put your hand there," he added.

December 31, 2013

## **M5.4 earthquake hits East and North-East Japan**

### **M5.4 quake jolts eastern Japan**

<http://mainichi.jp/english/english/newsselect/news/20131231p2g00m0dm032000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 5.4 jolted eastern and northeastern Japan on Tuesday morning, the Japan Meteorological Agency said.

No tsunami alert has been issued and there have been no reports of damage following the 10:03 a.m. quake, although part of the Joban Expressway was briefly closed for safety checks.

The focus of the quake was about 10 kilometers underground in northern Ibaraki Prefecture.

The quake measured lower 5 on the Japanese seismic intensity scale of 7 in Takahagi, Ibaraki Prefecture. The jolt was also felt in northeastern Japan, including Miyagi and Fukushima prefectures, as well as the Tokyo metropolitan area.

January 6, 2014

## Not so safe after all

### Information hacked from Monju reactor control room

[http://www3.nhk.or.jp/nhkworld/english/news/20140106\\_43.html](http://www3.nhk.or.jp/nhkworld/english/news/20140106_43.html)

The operator of the Monju fast-breeder reactor on the Sea of Japan coast says computer hackers may have stolen data on internal e-mails and training records.

The Japan Atomic Energy Agency says it found that one of the 8 computers in the central control room had been illegally accessed more than 30 times from a South Korean website after an employee updated free software on the PC last Thursday.

Agency officials say about 42,000 inter-office e-mails and staff training reports were stored in the computer.

They say part of the data may have been stolen, because they found indications of out-bound transmissions.

The officials suspect that the computer was infected during the software updating procedure.

But they say they have confirmed no illegal accesses to the other computers at the reactor complex, and that information important to the plant's safety was not leaked.



Last November, the plant operator was warned by the Nuclear Regulation Authority that its anti-terrorism measures were insufficient.

January 7, 2014

## Proper evacuation plans should be prerequisite for restart

### Editorial: Prioritize evacuation plans before restarting nuclear reactors

<http://mainichi.jp/english/english/perspectives/news/20140107p2a00m0na002000c.html>

Tohoku Electric Power Co. applied with the government's Nuclear Regulation Authority (NRA) for safety inspections of its No. 2 reactor at the Onagawa Nuclear Power Plant in Miyagi Prefecture at the end of last year, a move prerequisite for restarting the reactor.

This is the first application for safety inspections on a nuclear power station in an area hit by the March 2011 Great East Japan Earthquake and tsunami. With the move, seven power companies have so far applied with the NRA for safety inspections of 16 reactors at their nine nuclear power stations since the enforcement of the new regulatory standards for nuclear plants in July 2013.

Power suppliers are making haste to restart their nuclear reactors in a desperate effort to improve their financial situations, but **many of the local governments hosting these power stations have not yet drawn up plans detailing evacuation methods or routes for local residents.** Legally, compilation of evacuation plans is not a prerequisite for restarting nuclear reactors. Still, **reactivation without such plans would be tantamount to reviving the myth of nuclear plants' infallible safety that was destroyed by the outbreak of the nuclear crisis.**

The government should clearly declare that local municipalities hosting nuclear power stations must work out evacuation plans and ensure their effectiveness, in addition to idled nuclear reactors passing NRA safety inspections, as preconditions for reactivating them.

Recent opinion polls show that much of the public hopes that Japan will end its reliance on nuclear power.

Nevertheless, a draft of the basic plan on energy that the government worked out at the end of last year characterizes nuclear power as a base power source and states that Japan will retain a certain ratio of atomic power to Japan's total electricity consumption. Moreover, the draft says that the government will

allow power companies to restart their idled nuclear reactors if their safety is confirmed through the NRA's inspections.

The new regulatory standards are the bare minimum that all nuclear regulators must meet before being reactivated.

The government of Prime Minister Shinzo Abe has set a target of decreasing Japan's reliance on atomic power. Such being the case, the government should play a leading role in determining how many nuclear plants should be in operation in light of the risks of accidents, and gradually decommission reactors beginning with those that are oldest and most vulnerable to earthquakes.

The Onagawa plant was hit by stronger shaking and higher tsunami in the Great East Japan Earthquake than anticipated. Its operator argues that the plant's main equipment withstood the disasters, but it is understandable that some local municipalities that host the power station are opposed to the planned restart of the plant for fear of an accident.

Following the quake and tsunami, the government revised the guidelines for countermeasures against nuclear plant disasters to require 135 municipalities across the country that are situated within 30 kilometers from atomic power stations to map out their own plans to evacuate local residents in case of a nuclear accident.

Still, **a Cabinet Office survey shows that only 40 percent of these local bodies had drawn up such plans as of Dec. 2, 2013.**

None of the local bodies hosting the Onagawa plant and the Kashiwazaki-Kariwa Nuclear Power Plant in Niigata Prefecture -- whose operators have applied for safety inspections -- have worked out their evacuation plans. That is also the case with local municipalities hosting the Hamaoka Nuclear Power Plant, whose operator is set to apply for safety inspections within the current fiscal year. These local bodies face various difficulties in working out their evacuation plans, such as the large scale of damage that is feared will result from a powerful quake and the large population of their neighboring areas.

Even if local governments are to compile evacuation plans, they would be meaningless unless the municipalities repeatedly hold evacuation drills and ensure their effectiveness. **The new regulatory standards for nuclear reactors should have required local bodies hosting nuclear power stations to map out evacuation plans as a precondition for reactivating idled nuclear reactors.** In the United States, a number of nuclear plants were decommissioned because local bodies hosting them failed to work out evacuation plans for local residents.

The central government began in autumn last year to help municipalities around nuclear plants compile their evacuation plans. The government should step up these efforts and scrutinize the appropriateness of evacuation plans that local bodies produce.

January 8, 2014

## Extra safety steps (Ikata plant)

### Extra safety steps at Ikata nuclear plant shown

[http://www3.nhk.or.jp/nhkworld/english/news/20140108\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20140108_33.html)

Shikoku Electric Power Company on Wednesday presented extra steps to prevent severe accidents at the Ikata nuclear power plant in Ehime Prefecture, western Japan.

Last year, the Nuclear Regulation Authority found that tornado and fire prevention was inadequate in its review of measures to avoid severe accidents at the plant.

The review that the Nuclear Regulation Authority started this July is a step toward restarting the number 3 reactor at the plant.

A tank for heavy oil was covered with 20-centimeter thick cushioning material made of aluminum and stainless steel. The tank will now be resistant to the impact of an object traveling 360 kilometers an hour, blown by the wind.

The oil is used to power an emergency power generator.

The pump for circulating sea water to cool equipment in the reactor buildings has been surrounded with iron fences and wire nets.

As an anti-fire step, trees were cut down to prevent a fire from spreading to the surrounding forest. All trees within 35 meters of the oil tank were cut down.

The ongoing work to put two layers of filters on a building to serve as a command center in the case of a severe accident was also presented.

The filters are used to protect the building from radioactive materials in the air.

January 9, 2014

## "Dangerous weak links" in nuke security

### Study cites 'dangerous weak links' in nuclear security

<http://www.japantimes.co.jp/news/2014/01/09/world/study-cites-dangerous-weak-links-in-nuclear-security/#.Us5S-7TrV1s>

AP

WASHINGTON – The number of countries possessing the makings of a nuclear bomb has dropped by almost one-quarter over the past two years, but there remain “dangerous weak links” in nuclear materials security that could be exploited by terrorist groups with potentially catastrophic results, according to a U.S. study released Wednesday.

The study by the Nuclear Threat Initiative said Mexico, Sweden, Ukraine, Vietnam, Austria, the Czech Republic and Hungary have removed all or most of the weapons-usable nuclear materials on their territories since 2012.

That has reduced the number of countries with 1 kg or more of weapons-usable nuclear materials, such as highly enriched uranium, to 25 from 32 two years ago, the study said. The Nuclear Threat Initiative is a private, nonpartisan group that advocates reducing the risk of the spread of nuclear weapons.

“That’s a big deal,” said Page Stoutland, vice president of the group’s nuclear materials security program. “Getting rid of the materials is one less country where somebody could potentially steal weapons-usable material.”

Among the 25 countries with weapons-usable nuclear materials, the study ranked Australia as having the best nuclear security arrangements, followed by Canada, Switzerland, Germany and Norway. The U.S. was ranked No. 11. The weakest nuclear security is in Israel, Pakistan, India, Iran and North Korea, according to the study, which assessed factors such as accounting methods, physical security and transportation security.

The drop in the number of countries possessing such materials could be seen as modestly encouraging for President Barack Obama’s declared ambition to lock down all of the world’s highly enriched uranium and

plutonium — the building blocks of a nuclear weapon. There are an estimated 1,400 tons of highly enriched uranium and almost 500 tons of plutonium stored in hundreds of sites around the world.

The report said a significant portion of these materials is poorly secured and vulnerable to theft or sale on the black market. Relatively small amounts of highly enriched uranium or plutonium are required to build a nuclear bomb, which is a declared ambition of terrorist groups such as al-Qaida.

January 10, 2014

## More radiation from tanks

### Radiation rises from Fukushima water tanks

[http://www3.nhk.or.jp/nhkworld/english/news/20140110\\_17.html](http://www3.nhk.or.jp/nhkworld/english/news/20140110_17.html)

Nuclear regulators will discuss measures to prevent the increase of radiation levels around the crippled Fukushima Daiichi plant.

The level of radiation at the plant's border rose to **more than 8 millisieverts in annualized figures** in December, from less than 1 millisievert in March in the same year.

The regulators say that's due to the increasing number of storage tanks for radioactive water at the plant. There are now about 1,000 tanks at the site.

They explained that **the water basically emits beta-rays, which are too weak to penetrate the steel tanks. But they say, when beta-rays hit metals, stronger X-rays come out of the tanks, affecting the environment.**

Japan's Nuclear Regulation Authority sets the limit for radiation doses at the plant's border at less than 1 millisievert per year. The current reading is 8 times the targeted limit.

On Friday, the regulators are holding a meeting of experts to discuss measures against the increase.

The officials say they have been aware of the problem for a certain period of time, but could not deal with it as they were occupied with the issue of contaminated water.

They said they will come up with measures against the rise as it is needed to reduce the radiation dose plant workers are exposed to.

## Malware based attack hit Japanese Monju Nuclear Power Plant

**IT administrator at Monju Nuclear Power Plant discovered that a malware-based attack infected a system in the reactor control room.**

<http://securityaffairs.co/wordpress/21109/malware/malware-based-attack-hit-japanese-monju-nuclear-power-plant.html>

On January 2th one of the eight computers in the control room at Monju Nuclear Power Plant was compromised. An IT administrator has discovered that the system in the reactor control room had been accessed over 30 times in the last five days after an employee updated a free application on one of the machines in the plant.

First information available on the incident confirms that more than 42,000 e-mails and staff training reports were available on the compromised system at the nuclear power plant.

Security experts that investigate on the incident concluded that it is a malware-based attack, a possible vector of the infection could be a software update on the compromised machine, the malicious code has stolen some data sending it to a Command & Control server located in South Korea according the network logs on out-bound traffic.

In November, Japan's Nuclear Regulation Authority informed the Japan Atomic Energy Agency that anti-terrorism measures adopted at the Monju Nuclear Power Plant were not adequate. According the Regulation Authority, the Japan Atomic Energy Agency is violating security guidelines and is not adopting best practices to ensure protection of nuclear materials from terrorism and other attacks, including cyber offensives.

The recent incident to the Japan Atomic Energy Agency is not an isolated event, in November of 2012 a computer at the JAEA headquarters at Tokaimura was also infected by a malware.

The Japan Atomic Energy Agency has informed that it is still investigating on the attack, it is fundamental to discover the exact infection process and the nature and volume of the data stolen during the network intrusion.

Nuclear power plants are critical infrastructure, their security is one of the main concerns for every government, consider also that protection of critical systems is a shared responsibility. An incident to a nuclear facility could have a significant environmental impact that affects the overall ecosystem of the planet.

Security of critical infrastructure is a shared goal that could be achieved with joint effort of governments, private entities and population itself. Security awareness, adoption of security best practices, implementation of proper security solutions and sharing of information on incidents are fundamental principles to reach a good compromise between security and cost to sustain to ensure protection of infrastructures.

January 14, 2013

## Evacuation after nuclear accident: 12 hours to 6 days

### **12 hours needed for people within 30-km radius of nuclear plants to evacuate: study**

<http://mainichi.jp/english/english/newsselect/news/20140114p2a00m0na010000c.html>

At least 12 hours would be needed for everyone living within a radius of 30 kilometers from nuclear power plants in Japan to evacuate in the event of a nuclear accident, according to research results conducted by a private group.

In cases where the use of evacuation routes is limited to national highways due to complex disasters such as earthquakes, people within a radius of 30 kilometers from the Tokai No. 2 Power Station in Ibaraki Prefecture would need five days and a half to complete their evacuation. Those people living near the Hamaoka Nuclear Power Station in Shizuoka Prefecture would likely need about six days to move out of the 30-kilometer zone, the research findings show.

The research, conducted by "Kankyo Keizai Kenkyujo" (research institute on environmental economics), is apparently the first analysis covering all of the nuclear power plants in Japan. The research results highlight the fact that it is almost impossible for all of the residents near a nuclear power station to evacuate fast enough to avoid radiation exposure in the event of an accident in which radioactive substances are released into the atmosphere.

The research results are due to be announced at a seminar to be hosted on Jan. 25 by the Association for the Research of Transportation Problems and Human Rights.

The research was conducted on municipalities that lie within a radius of 30 kilometers from nuclear power plants and are required to prepare emergency evacuation plans under the government's guidelines

for responses to nuclear disasters. The research was also based on the assumption that 30 percent of registered buses and 50 percent of registered privately-owned cars in each of those municipalities would be used for evacuation.

The study was also based on the assumption that all of the residents in a given area would start moving simultaneously to evacuate, and traffic engineering techniques, which take into account such factors as traffic jams, were employed for the analysis. The research dealt with two different scenarios for calculations: cases in which only national highways can be used because of disaster-inflicted damage or emergency vehicles taking other routes; and cases in which all of the routes including national highways, expressways and other major local roads can be used.

As it turned out, in cases where only national highways are used for evacuation, at least 15 hours are estimated to be needed for all of the residents within the 30-kilometer radius of the Tomari Nuclear Power Plant in Hokkaido to complete their evacuation, while nearly six days are estimated to be needed for residents near the Hamaoka Nuclear Power Station. Even in cases where expressways and other roads can be used, eight hours are estimated to be needed for residents near the Oi Nuclear Power Plant in Fukui Prefecture to complete their evacuation -- the shortest among nuclear plants across the country -- while 63 hours are required for residents near the Hamaoka Nuclear Power Station -- the longest of all when using expressways.

In the case of the Hamaoka Nuclear Power Station, although about 740,000 people are living within a 30-kilometer radius, there are limited numbers of roads available. The situation is such that there will likely be heavy traffic jams involving private cars and even bus transportation will likely make little headway, forcing residents to take a long time to evacuate. Similar research results were found for the Tokai No. 2 Power Station which involves the prefectural capital, as well as for the Shimane Nuclear Power Plant in Shimane Prefecture.

Although the estimates were based on simplified assumptions, they show similar tendencies seen in detailed simulations released by some of the municipalities. The Hokkaido Prefectural Government estimates that it will take 12 hours and a half for residents within a 30-kilometger radius of the Tomari Nuclear Power Plant to complete their evacuation. The Ibaraki Prefectural Government estimates that residents within a 30-kilometer radius of the Tokai No. 2 Nuclear Power Station would need 17 hours to complete their evacuation, and it would take 39 hours and a half for them to evacuate if the Joban Expressway is closed. Kyoto Prefecture residents living within a 30-kilometer radius of the Takahama Nuclear Power Plant and the Oi Nuclear Power Plant, both in Fukui Prefecture, are estimated to take up to 29 hours and 20 minutes, respectively, according to an estimate made by the Kyoto Prefectural Government.

Naomi Kamioka, who heads the research institute and also serves as vice chairman of the Association for the Research of Transportation Problems and Human Rights, said, "**Although activities aimed at restarting**



nuclear reactors are shifting into high gear, road conditions around the nuclear power plants have not been drastically improved even after the Fukushima nuclear accident."

January 15, 2014

## **Safety screening for storage facility in Mutsu City (Aomori)**

### **Nuke waste storage operator applies for safety check**

[http://www3.nhk.or.jp/nhkworld/english/news/20140115\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20140115_30.html)

The operator of an intermediate nuclear waste storage facility being built in Japan has applied for safety screening ahead of its planned start of operations next year.

Recyclable-Fuel Storage Company is owned by 2 nuclear power plant operators, Tokyo Electric Power Company and Japan Atomic Power Company.

On Wednesday, Recyclable-Fuel Storage applied for safety screening with the Nuclear Regulation Authority.

The company has been building the facility in Mutsu City, in the northern prefecture of Aomori, to take in spent nuclear fuel from plants run by its 2 parent firms.

The operator plans to store a total of 3,000 tons of nuclear waste for a maximum of 50 years.

Company officials say the facility proved safe when tested under new standards simulating tremors 30 percent stronger than what was initially simulated.

The company hopes to start operating the facility in March next year.

## **IAEA allowed to check Japanese facilities**

### **Japan to accept IAEA nuclear security assessment**

[http://www3.nhk.or.jp/nhkworld/english/news/20140116\\_04.html](http://www3.nhk.or.jp/nhkworld/english/news/20140116_04.html)

Japan's nuclear watchdog says it will allow a team from the International Atomic Energy Agency to assess security at the country's nuclear facilities.

The decision came at a regular meeting of the Nuclear Regulation Authority on Wednesday. It is the first time the NRA has agreed to such a move.

NRA member Kenzo Oshima said the Authority will listen to opinions from abroad to reinforce Japan's security measures and identify points for improvement.

The decision comes amid growing global concerns about nuclear security, preparedness against terrorist attacks on nuclear facilities, and the theft of nuclear material.

Those concerns increased after the September 11th 2001 attacks in the United States and the accident at Fukushima Daiichi plant in March 2011.

The US and Britain are among several countries that have accepted IAEA assessments. The IAEA team may visit Japan from late this year or in early 2015.

Experts have pointed to weaknesses in identification checks at Japanese nuclear plants. The NRA is studying how to improve the security arrangements.

January 16, 2013

## **Japan's regulator starts screening reactors**

[http://www3.nhk.or.jp/nhkworld/english/news/20140116\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20140116_32.html)

Japan's nuclear regulator has begun safety screening of a reactor affected by the March 2011 disaster.

The Nuclear Regulation Authority is for the first time reviewing an application for such a reactor.

The NRA on Thursday held its first meeting on the screening for the reactor at the Onagawa nuclear power plant on the Pacific coast of Miyagi Prefecture. Such screening is needed to restart idle reactors in Japan.

Power switchboards and emergency generators of the plant were partially damaged by the powerful earthquake and subsequent tsunami.

Tohoku Electric Power Company, which operates the facility, said it is building seawalls based on an estimate of a possible tsunami 10 meters higher than previously projected.

NRA officials said that as the plant is located on the Pacific coast, safety measures should be based on an estimate of a quake and tsunami larger than those in 2011 hitting the facility's reactors.

The officials also said inspections should focus on whether lessons from the disaster are considered.

The regulator also began screening an application filed by Chugoku Electric Power Company for its idle reactor at the Shimane nuclear plant in western Japan.

Both reactors use the same technology as those at the disaster-hit Fukushima Daiichi plant.

January 17, 2014

## **Kashiwazaki-Kariwa & possible active faults**

### **Civic group seeks fault survey for nuclear plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140117\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20140117_30.html)

A civic group is urging Japan's nuclear regulators to conduct a detailed survey of possible active faults in and around the Kashiwazaki-Kariwa nuclear power plant on the Sea of Japan coast.

The plant is the world's largest in terms of output.

The group based in Niigata Prefecture said it had submitted a letter of request to the Nuclear Regulation Authority, ahead of a scheduled visit by its members to the plant in the prefecture.

The members will carry out a survey within the compound to see if it has faults that could move and cause earthquakes. The survey is part of the authority's safety screening. Utilities have to pass it to return their plants online.

The civic group says it conducted large-scale digging about 600 meters from the compound and found traces that a ground layer moved about 50,000 to 60,000 years ago.

An active fault is defined as one that has moved in the last 120,000 to 130,000 years.

Niigata University Professor Emeritus Masaaki Tateishi, a member of the group, says seismic faults affect the safety of a nuclear plant and they should be investigated thoroughly. He is calling on the authority to conduct a detailed survey both in and outside the plant.

## **Start of safety screenings (Rokkasho, Onawaga, Shimane)**

## Safety screening of nuclear fuel plant begins

[http://www3.nhk.or.jp/nhkworld/english/news/20140117\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20140117_29.html)



Japanese nuclear regulators have begun procedures for safety screening of a spent nuclear fuel processing plant in Rokkasho Village in Aomori, northeastern Japan.

The Nuclear Regulation Authority held its first meeting on the screening on Friday, after the plant's operator, Japan Nuclear Fuel Limited, applied for the check early this month.

Authority officials are to check whether the plant conforms to new stringent safety guidelines adopted in December.

An official from Japan Nuclear Fuel said it has raised its estimate of the scale of earthquakes that could hit the plant, and that it will install water pumps and spraying equipment to prevent fires and hydrogen blasts.

NRA Commissioner Toyoshi Fuketa said that unlike nuclear power plants, fuel processing compounds house several types of facilities, each requiring different safeguards.

Fuketa suggested that the NRA will take note of each facility's characteristics to assess how it is prepared for serious accidents.

Japan Nuclear Fuel hopes to pass the screening and complete work on the plant in October. But how long the assessment will take remains unclear.

The Rokkasho plant plays a key role in Japan's nuclear fuel recycling policy. But its completion has been postponed 21 times following a series of troubles.

## Higashidori fault not active, according to utility

### Operator: faults in Higashidori plant not active

[http://www3.nhk.or.jp/nhkworld/english/news/20140117\\_46.html](http://www3.nhk.or.jp/nhkworld/english/news/20140117_46.html)

The operator of the Higashidori nuclear power plant in northern Japan says 2 faults under the facility are not active.

Tohoku Electric Power Company released the results of a fresh survey it conducted of the plant in Aomori prefecture on Friday.

The extra survey was held through December, after a Nuclear Regulation Authority panel said that the faults appear to be active.

The utility says analysis of samples taken from 120,000 to 130,000-year-old strata around the faults found they were solid rock, showing they have not moved in at least the past 130,000 years.

It also says no traces of destruction of the strata -- often caused by active faults -- have been observed.

NRA experts cited distortion in the strata as a grounds for their stance that the faults are likely to be active.

The company says the distortion in some sections has not been confirmed and in others it may have been created after the soil absorbed water.

Tohoku Electric concludes that its survey found no traces of the faults having moved in the past and suggested they are unlikely to move in the future.

The NRA experts plan to compile a final report based on 4 rounds of field surveys and the results of the utility's additional survey.

If the faults were found to be active, Tohoku Electric would be required to review its anti-quake measures, making it likely that the Higashidori plant would be kept offline.

## Kashiwazaki-Kariwa faults should be investigated properly

### Civic group seeks fault survey for nuclear plant

[http://www3.nhk.or.jp/nhkworld/english/news/20140117\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20140117_30.html)

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January 20, 2014

## Fault at Tsuruga plant examined again

### NRA to re-examine fault situation at Tsuruga plant

Kyodo

<http://www.japantimes.co.jp/news/2014/01/20/national/nra-to-re-examine-fault-situation-at-tsuruga-plant/#.Ut1hNLTj1s>

The Nuclear Regulation Authority team began a two-day re-examination Monday of Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture to follow up on its discovery last May that reactor 2 is sitting on an active fault.

In a report the following July, however, Japan Atomic Power said reactor 2 was not on an active fault, contradicting the NRA.

The NRA visit is not expected to change the NRA's mind about ruling out a restart for the reactor, since the Japan Atomic Power report contained no persuasive information to alter its opinion.

On Monday, the team, including NRA Commissioner Kunihiro Shimazaki, was briefed by Japan Atomic officials while inspecting the site, which includes a ditch about 300 meters north of reactor 2.

Nuclear plant operators are not permitted to place reactors and other important safety installations directly above "active faults," which is currently defined as those that have moved in the past 120,000 to 130,000 years.

If the operator fails to change the NRA's mind, unit 2 will have to be scrapped.

In a "nation dotted with volcanoes", do not forget the risks of volcanoes

January 22, 2014

### **As I See It: Include risks of major volcanic eruptions in nuclear reactor safety assessment**

<http://mainichi.jp/english/english/perspectives/news/20140122p2a00m0na007000c.html>

The risks of earthquakes and tsunami causing nuclear disasters have garnered much attention among experts and the public, but I feel a grave need to raise awareness on how much greater a risk a massive volcanic eruption poses on nuclear reactors in Japan.

Volcano experts surveyed for a Mainichi Shimbun article published last December said they were most concerned with the impact of a major volcanic eruption on Kyushu Electric Power Co.'s Sendai Nuclear Power Plant, located in Kagoshima Prefecture, followed by Hokkaido Electric Power Co.'s Tomari Nuclear Power Plant in Hokkaido.

Some 10 years ago, a volcanologist told me that pyroclastic sediment was commonly found in the surrounding areas of both Sendai and Tomari nuclear power stations. I was working at the Mainichi Shimbun's Shimabara Local Bureau in Nagasaki Prefecture at the time, and had been learning about earthquakes and volcanoes through my coverage of the eruption of Mount Unzen-Fugendake that began in 1990.

Consisting of high-temperature substances such as lava and volcanic ash, pyroclastic flows spread at rapid speeds and are some of the most terrifying phenomena resulting from volcanic eruptions. In 1991, a

Mainichi Shimbun photographer and 42 others were killed by pyroclastic currents from Mount Unzen-Fugendake.

In volcanology terms, however, the Mount Unzen-Fugendake eruptions are considered minor. Pyroclastic currents from a massive eruption would be beyond comparison.

Massive eruptions, which have occurred in Japan about once every 6,000 to 10,000 years, cause pyroclastic flows that can bury an area within several dozen to over 100 kilometers of the volcano, and create calderas measuring over 10 kilometers in diameter. Volcanic ash from a massive eruption can cover the entire Japanese archipelago, or even parts of the rest of the world.

Take, for example, the major pyroclastic currents produced by Kumamoto Prefecture's Mount Aso about 90,000 years ago. Not only did they burn down the northern half of Kyushu, but they also traveled across the ocean to what are now Yamaguchi and Ehime prefectures. The major pyroclastic flows caused by Kagoshima Prefecture's Mount Aira 26,000 to 29,000 years ago completely destroyed southern Kyushu. Such massive eruptions are particularly common in Kyushu and Hokkaido.

What would happen if a major volcanic eruption were to occur in Japan today, and our nuclear reactors became engulfed in pyroclastic currents?

Nuclear power plants and their surrounding areas would be buried under volcanic ash, making it impossible to control nuclear reactors for long periods of time. Even if radioactive materials were to leak from the reactors, we would not be able to reach the facilities to do anything about it. It would put the very survival of the country at risk.

Is this an exaggerated scenario? The last massive volcanic eruption took place some 7,300 years ago in what is now Kagoshima Prefecture. Based on the average frequency of such eruptions, it wouldn't be surprising if one took place at any time now. The ongoing disaster at the Fukushima No. 1 Nuclear Power Plant was triggered by an earthquake and tsunami said to be of a magnitude seen once every 1,000 years. Then is a one-tenth to one-sixth probability that a massive volcanic eruption could occur small enough to ignore?

In the two-plus years that I have been on the Kagoshima prefectural administration beat since October 2011, the reactivation of the Sendai Nuclear Power Plant has been a major cause of the central prefectural government.



With the risks that major eruptions pose on nuclear power plants always on my mind, I was relieved when such risks were incorporated into the Nuclear Regulation Authority (NRA)'s new safety standards for nuclear reactors. That sense of relief quickly turned into disappointment once the NRA safety assessments began. As it turns out, the NRA is extremely thorough when it comes to quake-related assessment items, but it easily accepted Kyushu Electric Power Co.'s report on the Sendai plant that "an eruption at a nearby volcano would not have any impact on the nuclear power plant." Meanwhile, the power plant is surrounded by the most calderas -- in other words, traces left by massive eruptions -- among all nuclear power plants in Japan.

In some ways, it's understandable. The NRA's deputy commissioner, Kunihiro Shimazaki, who is in charge of the relevant portion of the assessments, is a seismologist, not a volcanologist. And perhaps most significantly, the temporal axis on which the earth exists and the concept of time in which humans function are so dramatically disparate. The dozens of years that a nuclear reactor is in operation is a mere blink of an eye for the planet. Our scientific knowledge and technology cannot yet tell us if a massive earthquake will occur in that time.

Last year, we surveyed volcanologists nationwide on the risks of individual nuclear power plants and provided readers with statistical results because we believed such information would inform how we think about nuclear policy. In addition to answering our questions, the experts offered a range of valuable comments, which could be classified into the following:

- 1), No massive volcanic eruptions will occur in the time frame in which nuclear reactors are online.
- 2), There is a small but worrisome possibility that a massive eruption will occur.
- 3), Some individual nuclear plants face unacceptable risk.
- 4), There is a limit to what science can tell us, and a social/political decision should be made based on a society-wide deliberation comparing the risks and merits.

I agree with comment No. 4. Seeing as volcano experts vary so widely in their views, the NRA should not rush to any conclusions.

It's not too late. The NRA should establish a subcommittee within the organization comprising volcanologists from Japan and abroad to publicly discuss the risks posed by a major volcanic eruption on individual nuclear plants. The deliberations should include the possibility of not reactivating reactors if they are at "unacceptable risk." Only then can we, as a nation dotted with volcanoes, claim to the world that our safety assessment procedures are sufficient. (By Taro Yamasaki, Kagoshima Bureau)

January 24, 2013

## New fault survey at Kashiwazaki

### TEPCO mulls new fault survey at Kashiwazaki plant

[http://www3.nhk.or.jp/nhkworld/english/news/20140124\\_41.html](http://www3.nhk.or.jp/nhkworld/english/news/20140124_41.html)

Tokyo Electric Power Company plans to conduct an additional survey at its largest nuclear power plant to confirm that fault lines in the compound won't cause earthquakes.

TEPCO officials announced the news at a meeting with the government's Nuclear Regulation Authority on Friday.

The survey is in response to an inquiry from the authority about 23 faults running under some reactor buildings of the Kashiwazaki-Kariwa plant in Niigata Prefecture.

The officials reiterated that the faults will not move in the future and said that they will dig at least 4 large holes, measuring about 4 meters across and up to 30 meters deep, in the compound to confirm this.

TEPCO also plans to conduct a drilling survey in and outside the compound.

The planned survey is a part of a safety screening, which utilities must pass to restart their nuclear power stations.

Members of the authority will visit the Kashiwazaki plant next month to decide what additional inspections should be carried out.

TEPCO has drawn up earnings projections by assuming that it can begin restarting the Kashiwazaki reactors from July. But a senior official says the new survey will take at least several months.

NRA members have said that they will not check the plant's preparedness for tsunami and other disasters until they decide on a policy for the fault survey.

**If the new survey takes a long time, TEPCO won't be able to restart the reactors as planned.**

January 26, 2014

## Evacuation a nightmare

## No plan best plan in Kansai nuclear disaster

<http://www.japantimes.co.jp/news/2014/01/26/national/no-plan-best-plan-in-kansai-nuclear-disaster/#.UuYo-7Tj1s>

### *Area leaders paralyzed by lack of answers, state guidance*

by Eric Johnston  
Staff Writer

Ten months after regional governments were required to submit nuclear disaster evacuation plans, a lack of central government guidance and local-level cooperation is generating concern that Kansai will be ill-prepared to respond if any of Fukui Prefecture's 13 commercial reactors suffers a meltdown.

Questions remain about how fleeing Fukui residents who pass through neighboring Kyoto would be stopped and screened for radiation, and how residents in the rural northern areas closest to the reactors would be gathered and evacuated in a timely manner. Evacuating the elderly, young mothers and the pregnant is also a serious concern.

There is also the question of what to do if Shiga's Lake Biwa, which supplies drinking water to about 14.5 million people, gets contaminated with radiation.

Citizens' groups have posed these and other detailed questions to prefectural officials in Kyoto and the Union of Kansai Governments, a loose federation of seven prefectures and four major cities in the region. But Kansai officials reply that, on many issues, there is little they can do because the central government hasn't drafted specific guidelines.

For example, while Tokyo will order residents within 30 km of a nuclear plant to evacuate in a crisis, winds could stretch a radioactive plume well beyond that range.

Detailed plans based on wind projections during a radiation leak continue to be discussed, but there is little in the way of concrete proposals.

It is also unclear how evacuations would be carried out if a storm, blizzard or other natural disaster on the Sea of Japan coastline of Fukui or Kyoto ends up closing access roads within 30 km of a power plant.

Local disaster response plans have yet to spell out how people in northern Kyoto, which is rural and lacks the wide thoroughfares of the capital, can be effectively evacuated.

“Kansai authorities have admitted that many towns and cities are not ready to receive evacuees. Authorities admit that the evacuation of pregnant women, young children and others who need care should be a priority, but no such plans are in place,” said anti-nuclear activist Aileen Mioko Smith of Kyoto-based Green Action, following meetings with Kyoto and Kansai officials late last year.

Under a Union of Kansai Governments agreement, Hyogo Prefecture is in charge of coordinating disaster response policy for the union’s seven prefectural members, although Fukui is not one of them. Last year, Hyogo officials carried out a simulation of what would happen just to Hyogo if a Fukushima-like event were to occur at one of the four reactor sites in Fukui.

They concluded that the town of Sasayama (population 43,832) would be exposed to a maximum of 167 milliseiverts over a seven-day period, three times an international level that triggers the use of iodine tablets.

Guidelines established by the Nuclear Regulation Authority call for iodine tablets to be distributed to those within 5 km of a nuclear plant. While there are discussions about extending the radius to 30 km, no final decision has been made.

“I don’t think that stockpiling and dispensing iodine tablets is particularly difficult compared with, say, stockpiling Tamiflu for avian flu. Plans need to be revised quickly,” Hyogo Gov. Toshizo Ido said when the results were announced.

Under the Hyogo simulation, parts of Kyoto Prefecture would be in even greater danger — a point Smith and other Kyoto citizens have made to local officials.

In Kyoto, there are now specific emergency drills based on what would happen in a nuclear disaster. The most recent exercise was conducted on Jan. 17, the 19th anniversary of the Kobe earthquake.

The small drill involved about 20 prefectural and Self-Defense Forces officials responding to reports of radiation in the air following an earthquake and tsunami. The drill assumed that critical information from the national SPEEDI network, which assesses radiation levels in real time, would be conveyed to them quickly.

There are seven SPEEDI monitoring spots within 10 km of the power plants in Fukui that collect data on Fukui and Kyoto prefectures, and another six within 30 km, including one in Shiga.

Kansai leaders recognize that more monitoring stations, particularly in northern Kyoto and Hyogo, are needed, but without guidance from the central government, as well as funding, there is little they can do.

Prime Minister Shinzo Abe's government has made restarting the nation's nuclear reactors a primary goal. The discussions have focused mostly on the technical issues related to the plants and whether the fault lines surrounding them, or in some cases under them, are active.

Given the widespread concerns, Smith says such thinking puts the cart before the horse.

**"It's a very serious problem that Japanese nuclear power regulation does not require evacuation plan approval as a prerequisite for restarting nuclear power plants,"** she said.

Kansai Perspective appears on the fourth Monday of each month, focusing on Kansai-area developments and events of national importance with a Kansai connection.

January 27, 2014

## US want their plutonium back

### Return arms-grade plutonium: U.S.

<http://www.japantimes.co.jp/news/2014/01/27/national/return-arms-grade-plutonium-u-s/#.UugNHbTjKM8>

Kyodo

Washington has been pressing Tokyo to return over 300 kg of mostly weapons-grade plutonium given to Japan for research purposes during the Cold War era, Japanese and U.S. government sources said Sunday.

President Barack Obama's administration, which is keen to ensure nuclear security, wants Japan to return the plutonium supplied for use as nuclear fuel in a fast critical assembly in Tokai, Ibaraki Prefecture, the sources said.

**The highly concentrated plutonium could be used to produce 40 to 50 nuclear weapons.**

Japan has strongly resisted returning the plutonium, which it says is needed for researching fast reactors. But it has finally given in to repeated U.S. demands, the sources said.

Since last year, Japan and the United States have been actively discussing the matter, and Washington plans to forge an accord with Tokyo on the occasion of the third nuclear security summit in March in the Netherlands.

To prevent nuclear materials from falling into the hands of terrorists, the U.S. government has called for eliminating and minimizing the use of such materials. Since the first such summit was held in 2010 in Washington at the initiative of Obama, the United States has been pressing Japan to return 331 kg of plutonium now kept at the Japan Atomic Energy Agency's fast critical assembly, the sources said.

The facility, which attained criticality in 1967, is the nation's only critical assembly designed to study the neutron characteristics of fast reactors.

Since some of the plutonium was made in Britain, the United States is also asking London's permission to transfer all of it to the United States, the sources said, adding the three nations are working out their policies on the matter, the sources said.

The Education, Culture, Sports, Science and Technology Ministry and other researchers have argued that the plutonium in question is needed for research and is vital to producing good data.

**At present, Japan has about another 44 tons of plutonium, but its quality is not on a par with the plutonium used for research purposes, a Japanese expert said.**

Since the March 2011 nuclear crisis at Fukushima No. 1 nuclear power plant, the United States has expressed its concern to Tokyo over how it will use plutonium.

January 29, 2014

## Evacuation drill (Onagawa)

### Nuclear evacuation drill held around Onagawa plant

[http://www3.nhk.or.jp/nhkworld/english/news/20140129\\_22.html](http://www3.nhk.or.jp/nhkworld/english/news/20140129_22.html)

Miyagi Prefecture and municipalities around the Onagawa nuclear power plant have held a drill to assess the procedures for responding to a major nuclear accident. It was the first such drill held since the Fukushima disaster in 2011.

About 800 people from the prefectural government, 7 municipalities, hospitals and police and fire stations took part in the drill on Wednesday. The exercise assumed that radioactive substances were released from the plant after a major earthquake knocked out all power at the facility.

At the prefectural office, officials received faxes about the status of the Onagawa plant from its operator, Tohoku Electric Power Company, and relayed the information to relevant municipalities.

The prefecture, the municipalities, and the Nuclear Regulation Authority Secretariat conducted a video conference to share information about areas where residents needed to be evacuated or ordered to stay indoors.

In the town of Misato, a drill was conducted to have all residents in areas within 30 kilometers of the plant take shelter indoors. A woman who took part prepared enough water for a long stay inside her home, and sealed off her house with adhesive tape to prevent radioactivity from entering.

After the accident at Fukushima, disaster preparedness zones for nuclear accidents were expanded from 10 to 30 kilometers around power plants. The new guidelines increased the number of people around the Onagawa plant who would need to evacuate from 18,000 to 210,000. But relevant municipalities have yet to draw up evacuation plans.

February 1, 2014

## New rules for monitoring radiation

### NRA sets up new rules on evacuation

[http://www3.nhk.or.jp/nhkworld/english/news/20140202\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20140202_02.html)

Japanese nuclear regulators have introduced new rules for monitoring radiation in the event of a nuclear accident to decide whether to evacuate people.

After the Fukushima Daiichi accident in 2011, officials at the Nuclear Regulation Authority decided to

introduce a new plan of disaster management around plants. They said they would collect monitored data on radiation levels within 30 kilometers before deciding whether to issue an evacuation order. They also said they would evacuate all residents up to 5 kilometers unconditionally.

The latest rules specify what local officials are expected to do for the plan.

The regulators are now asking local governments to choose at least one location in each community to measure radiation levels and the density of radioactive substances.

They also require municipalities to install emergency power generators at their regular monitoring places. Monitoring posts around Fukushima Daiichi did not work due to a power failure.

The government will set up an emergency monitoring center in accident areas to compile data and make decisions about evacuations.

But experts say the number of monitoring posts currently in place is insufficient. They also say it is not clear how the authority will find people to monitor radiation levels in areas without the posts.

February 4, 2014

## Hokkaido No.3 reactor does not satisfy new regulations

### Hokkaido reactor needs construction work to satisfy new regulations

<http://www.japantimes.co.jp/news/2014/02/04/national/hokkaido-reactor-needs-construction-work-to-satisfy-new-regulations/#.UvEVfbTrV1s>

Kyodo

One of the reactors owned by Hokkaido Electric Power Co. doesn't comply with the new nuclear regulations and will have to undergo construction work to come up to code, regulators said.

The work required for the No. 3 unit at the Tomari power plant "will not finish in several months," the utility said Tuesday, indicating that the Nuclear Regulation Authority's safety assessment will be protracted and the reactor's return to operations could be facing a significant delay.

The No. 3 unit is one of 16 reactors up for NRA inspections under the safety requirements introduced last July in the wake of the 2011 Fukushima disaster.



The problem with the No. 3 reactor is in the emergency system that cools the interior of the reactor's primary containment vessel by spraying water from a ring-shaped pipe.

The reactor only has one pipe, but the NRA said in a meeting in December with Hokkaido Electric Power officials that they need a backup system in case the pipe should break and can't function.

Hokkaido Electric Power has insisted that such an event is extremely unlikely, but the NRA rejects this claim, saying the new safety criteria "should be strictly applied."

It is the only pressurized water reactor undergoing the safety assessment that doesn't have double-layered spray pipes, according to the NRA.

All 48 commercial reactors in Japan have been taken offline. To resume operations, reactors have to satisfy the new regulations.

February 6, 2014

## Chubu planning to file application for screening of Hamaoka

### Safety screening to be sought for Hamaoka reactor

[http://www3.nhk.or.jp/nhkworld/english/news/20140206\\_26.html](http://www3.nhk.or.jp/nhkworld/english/news/20140206_26.html)

Chubu Electric Power Company is preparing to apply for a safety screening of a reactor at its Hamaoka nuclear power plant in central Japan. The screening is necessary for restarting operation.

NHK has learned that the utility is planning to file an application with the Nuclear Regulation Authority around February 14th.

All the reactors in Japan went offline after the accident at the Fukushima Daiichi nuclear power plant in 2011. Operators are required to clear the government's new, stricter safety guidelines before they can reactivate their reactors.

Chubu officials say they hope to restart the plant's No. 4 reactor in Shizuoka Prefecture when additional safety measures are in place against a massive earthquake and tsunami.

The steps, including the construction of a 22-meter-high breakwater, are to be completed in September 2015.

The officials also plan to apply for a safety screening of the No. 3 reactor at the plant in or after April.

The Hamaoka plant is located near the center of the likely focal zone of a mega-quake. Its reactors are the same type as those at the Fukushima Daiichi nuclear power plant.

Chubu halted operations at the Hamaoka plant under government instructions after the Fukushima nuclear accident.

The utility increased thermal power generation instead, but rising fuel costs have caused it financial difficulties.

It remains unclear when reactors at the Hamaoka plant can be restarted, since the screening may take time. The utility also needs to get approval of local governments.

February 7, 2014

## **NRA will survey faults at Kashiwazaki**

### **Regulator to survey faults under Kashiwazaki plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140207\\_12.html](http://www3.nhk.or.jp/nhkworld/english/news/20140207_12.html)

Japan's nuclear regulator will conduct a survey at the Kashiwazaki-Kariwa nuclear plant to find out whether dozens of fault lines beneath the facilities are active.

The operator, Tokyo Electric Power Company, has applied to restart 2 of the 7 reactors at the plant in Niigata Prefecture on the Sea of Japan.

The utility submitted documents requesting a safety screening to the Nuclear Regulation Authority in September last year.

The regulator has asked the firm to check if 23 fault lines running under some of the reactor buildings could cause earthquakes.

The NRA commissioner, Kunihiro Shimazaki, and other experts will conduct an initial survey over a 2-day period beginning as early as February 17th.

They will visit the site where an observation shaft is being drilled to a depth of 30 meters.

The utility's business plan assumes the reactors can be restarted in stages from July, but the survey of the faults is expected to continue for several months.

February 12, 2014

## Ohi fault officially declared inactive

### **NRA declares Ohi nuclear plant fault inactive**

[http://www3.nhk.or.jp/nhkworld/english/news/20140212\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20140212_20.html)

Japanese nuclear regulators have concluded that a geologic fault beneath the Ohi nuclear plant in central Japan is unlikely to move.

The Nuclear Regulation Authority on Wednesday approved a final report on the F-6 fault under the plant in Fukui Prefecture.

The report is based on inspections that began in November 2012. It says the F-6 is not an active fault and is not likely to move along with the active fault that is next to it.

NRA Chairman Shunichi Tanaka says regulators made the difficult judgment after careful examination.

The operator, Kansai Electric Power Company, had argued that the fault was not active. Utilities are forbidden to build reactors and other key facilities above active faults.

The Ohi plant is the first of 7 nuclear plants under NRA scrutiny to get the green-light to resume operating.

The NRA concluded last May that the fault under the No.2 reactor at the Tsuruga nuclear plant in Fukui does have the potential to move.

February 13, 2014

## Safety screenings need time

### **Top nuclear regulator: Safety screenings unlikely to finish before April**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201402130054>

The head of the Nuclear Regulation Authority said it is unlikely any of Japan's idled reactors will be reactivated this fiscal year as operators try to comply with tightened safety standards.

NRA Chairman Shunichi Tanaka said Feb. 12 that none of the safety screenings requested by operators seeking to bring their reactors back online are expected to be complete before April when the new fiscal year starts.

Japan had 54 nuclear reactors before the March 2011 triple meltdown at the Fukushima No. 1 nuclear power plant. The nation's remaining 48 nuclear reactors were soon taken offline for safety checks following the disaster.

Under the NRA's new safety screening regime, plant operators must satisfy three concurrent procedures before being granted permission to reactivate facilities. First, they must gain permission to upgrade a reactor. Next, they must obtain approval for their construction proposals, which should contain descriptions of the design plan. And finally, they need to seek approval to implement their new safety measures. Under this latter condition, operators are also required to show in detail how the facility will be operated.

Tanaka told a news conference on Feb. 12 that, in light of current progress, it appears unlikely that all three screening procedures will be concluded before the end of the business year.

Japanese utility companies have applied for safety screenings for 16 nuclear reactors at nine power plants. Screenings are currently under way for 10 reactors at six plants whose operators submitted applications last July when the new regulation standards went into effect.

Tanaka also said Feb. 12 that the NRA will hold public hearings and garner a broader range of opinions by other means on scientific and technical issues that may be incorporated into the screening process, although specifics on those hearings have yet to be decided.

### **NRA: Nuclear safety screening to take longer**

[http://www3.nhk.or.jp/nhkworld/english/news/20140213\\_04.html](http://www3.nhk.or.jp/nhkworld/english/news/20140213_04.html)

The head of Japan's nuclear regulator says more time will be needed to complete safety screening to restart some of the country's reactors.

All commercial reactors in Japan are off-line. Nine nuclear power stations have applied for safety checks by the Nuclear Regulation Authority. The checks are prerequisites for restarts.

At an NRA meeting on Wednesday, officials reported on the screenings of the first 6 power plants, applied in July last year.

One official said the authority is nearing the end of screenings for basic designs of new safety devices. Another suggested the checks are at the final stage.

But after the meeting, NRA Chairman Shunichi Tanaka said the authority needs to see not only basic designs but also detailed designs of safety devices. He said the screening will not conclude by this fiscal year's end, March 31st.

Tanaka suggested that public hearings be held, and the opinions of the general public be sought as NRA experts near the end of their screening.

He said the authority is willing to hear a variety of opinions from the standpoint of science and technology before reaching a final conclusion.

February 14, 2014

## Hamaoka reactor

### **Chubu Electric applies to restart risk-laden Hamaoka nuclear plant**

Kyodo

Chubu Electric Power Co. on Friday applied for a safety assessment for one of the three reactors at its Hamaoka nuclear plant in Shizuoka Prefecture despite the tsunami risk that forced its shutdown in 2011 at the request of Prime Minister Naoto Kan.

The move bumped up the number of safety assessment applications received by the Nuclear Regulation Authority to 17.

The NRA is expected to use the same procedure as it does on reactors elsewhere despite the unusual request by Kan, which was sparked by fears over the plant's ability to withstand tsunami.

The Hamaoka complex is located in the city of Omaezaki on the Pacific coast, in an area that is assumed ripe for a massive earthquake. Two of the five reactors at the plant were retired in 2009.

Chubu Electric has been installing huge seawalls and taking other measures to protect the plant. The measures are expected to be completed by September 2015.

Under the new nuclear watchdog, all of the nation's 48 commercial reactors must pass new safety assessments before they can be restarted.

The NRA has yet to finish any of the safety checks.

### **Safety screening sought for Hamaoka reactor**

[http://www3.nhk.or.jp/nhkworld/english/news/20140214\\_17.html](http://www3.nhk.or.jp/nhkworld/english/news/20140214_17.html)

Chubu Electric Power Company has applied for a safety screening for a nuclear reactor in central Japan. Such screenings are required for restarting reactors.

Executive Vice President Masatoshi Sakaguchi filed the application on Friday with the Nuclear Regulation Authority for the No.4 reactor at the Hamaoka plant in Shizuoka Prefecture. The plant has five reactors, two of which are shut down for decommissioning.

The Nagoya-based utility halted operations at the plant at the government's request after the March 2011 earthquake and tsunami.

The Hamaoka plant is within the projected focal region of a mega-quake that experts have long warned about.

As for safety measures, the company has raised its estimate for the maximum ground acceleration caused by an earthquake by 1.5 times, to 1,200 gals. It is also building a 22-meter-high breakwater to protect the plant from tsunami.

Later on Friday, Sakaguchi told reporters that the utility will respond sincerely to any questions from authorities on safety measures. He added that the company will explain the safety of the plant to local residents.

The procedure is required to clear the government's new, stricter safety guidelines before the reactors can be reactivated.

All of Japan's 50 reactors are currently off-line. But 17 reactors at 10 nuclear power plants have submitted applications for inspections.

## **Chubu Electric seeks to restart Hamaoka nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20140214p2g00m0dm049000c.html>

TOKYO (Kyodo) -- Chubu Electric Power Co. applied Friday for a state safety assessment of the No. 4 reactor at the Hamaoka nuclear power plant in central Japan, which was forced to shut down in 2011 after operation of the complex was deemed too risky.

The utility plans to finish installing huge seawalls and other safety measures by the end of September 2015 to satisfy the country's new nuclear regulations compiled after the 2011 Fukushima nuclear crisis, and move on to reactivate the No. 4 unit.

Located on the Pacific coast, about 190 kilometers southwest of Tokyo, the Hamaoka complex in Shizuoka Prefecture is believed to be situated at the potential epicenter for a massive earthquake. Two of the five reactors at the plant were retired in 2009.

With the latest move, the total number of reactors in Japan for which applications for safety checks have been submitted to the Nuclear Regulation Authority rose to 17 at 10 power stations.

The NRA is expected to employ the same procedure to check the Hamaoka No. 4 unit as for the other reactors, despite the government having issued an unusual request in May 2011 to suspend operation of the plant because of doubts about its tsunami preparedness.

In submitting the application, Chubu Electric Power's Executive Vice President Masatoshi Sakaguchi said, "I think we are in a different dimension" compared from the time it received the suspension request "because new criteria for screening reactors have been set."

But he stopped short of stating when the company is seeking to resume operation of the reactor, saying, "We are not yet at the stage of talking about the next step."

To enhance the safety of the No. 4 unit, Chubu Electric has raised its estimate of the maximum possible seismic ground motion the reactor building should withstand to 1,200 gals from 800 gals. Some facilities at the plant will be set at 2,000 gals.

The utility is also building seawalls that are high enough to counter tsunami waves 21 meters above sea level, and plans to prepare an additional building as an emergency response center that can satisfy the new regulations.

The company expects to spend some 300 billion yen overall for safety measures, including those already taken voluntarily after the Fukushima crisis and steps to respond to the new regulations, according to Sakaguchi.

Japan has revamped its regulatory setup by launching the NRA and also introduced new safety requirements that reflect the lessons learned from the disaster at Tokyo Electric Power Co.'s Fukushima Daiichi plant, sparked by a huge earthquake and tsunami in March 2011.

The NRA has not finished any of the reactors' safety checks so far, a process which started from July last year. All of the 48 commercial reactors in Japan are currently offline.

February 17, 2014

## **NRA surveys faults at Kashiwazaki**

### **Regulators check areas of planned fault survey at Kashiwazaki plant**

<http://mainichi.jp/english/english/newsselect/news/20140217p2g00m0dm071000c.html>

TOKYO (Kyodo) -- Nuclear regulators started a two-day inspection Monday of sites where Tokyo Electric Power Co. plans to conduct a survey of geological faults in and around the Kashiwazaki-Kariwa nuclear power plant complex as part of the safety review process.

After finishing the inspection for the day, Nuclear Regulation Authority Commissioner Kunihiro Shimazaki suggested that TEPCO will not have to significantly modify the currently planned survey, saying it is "basically appropriate."

TEPCO's Managing Executive Officer Takafumi Anegawa said he expects the survey to take between three and six months.

TEPCO has applied for the safety assessment of its Nos. 6 and 7 reactors at the Kashiwazaki-Kariwa plant in Niigata Prefecture to bring the two units back online, but the NRA has requested an additional survey of faults, saying the data submitted so far are "insufficient."



All of the plant's seven reactors, except for the No. 4 unit, are known to be sitting above small faults. TEPCO has insisted that the faults are not active.

In quake-prone Japan, nuclear power plant operators are not permitted to build reactors and other facilities with important safety functions directly above active faults that could cause displacement or other movements on ground surfaces.

Active faults are defined as those that have moved in the last 120,000 to 130,000 years.

To respond to the NRA's request, TEPCO plans to dig a trench at the plant site and also conduct surveys boring into the ground within and outside the premises.

TEPCO is seeking to reactivate the reactors at the Kashiwazaki-Kariwa plant amid tough business conditions due to the massive costs stemming from the devastating accident at its Fukushima Daiichi nuclear power plant in 2011.

### **Fault survey begins at nuclear plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140217\\_17.html](http://www3.nhk.or.jp/nhkworld/english/news/20140217_17.html)

Japan's nuclear regulators on Monday began a survey of seismic faults at a nuclear power plant owned by Tokyo Electric Power Company.

TEPCO has applied for safety screenings by the Nuclear Regulation Authority for its Kashiwazaki-Kariwa plant in Niigata prefecture. It hopes to restart the numbers 6 and 7 reactors there.

But the authority has asked the firm to conduct an additional inspection of faults in the area. More than 20 such faults are located beneath the reactor buildings and other parts of the plant complex.

On Monday, the Nuclear Regulation Authority's Kunihiro Shimazaki and 15 staff members visited 7 locations north of the plant. They inspected the geological structure by digging into the strata.

The regulators will continue their work until Tuesday to determine whether the utility's plan for its own inspection is adequate.

TEPCO says that it has so far detected no faults that could become active in the near future. But it expects the new survey to take several months to complete.

In its new business plan, TEPCO has based its projected earnings and spending on the assumption that the 2 reactors at the Kashiwazaki-Kariwa plant will be back online in or after July.

### **Regulator to survey faults at Kashiwazaki plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140217\\_04.html](http://www3.nhk.or.jp/nhkworld/english/news/20140217_04.html)

Japan's nuclear regulator is starting a survey of faults at the Kashiwazaki-Kariwa nuclear plant.

The Nuclear Regulation Authority will inspect the plant in Niigata Prefecture on the Sea of Japan coast from Monday.

Tokyo Electric Power Company requested the safety screening ahead of plans to restart the Number 6 and Number 7 reactors at the plant.

But the authority asked TEPCO to conduct an additional survey because there are 23 faults underneath reactor buildings and other locations.

Authority Commissioner Kunihiko Shimazaki and other experts will spend 2 days determining the adequacy of the operator's plan for an additional survey of the faults.

The experts say they will inspect the site of a large-scale pit. They will also examine the terrain and geological formations around the compound.

TEPCO says it currently believes there is no possibility of future fault movement at the compound. It expects the new survey will likely take several months to complete.

But the survey could prolong the authority's safety screening. The utility is estimating its finances on the assumption that the plant will be restarted in July.

New regulations ban the installment of nuclear reactors and other key equipment above faults that could move in the future.

February 18, 2014

### **Seven municipalities unite around Hamaoka**

## **Seven municipalities seek safety agreement over Hamaoka nuclear plant**

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201402180040](http://ajw.asahi.com/article/behind_news/politics/AJ201402180040)

Feeling neglected, seven municipal governments in Shizuoka Prefecture will ask Chubu Electric Power Co. to sign a safety agreement requiring their consent before operations can resume at its Hamaoka nuclear power plant.

The five cities of Fujieda, Yaizu, Shimada, Fukuroi and Iwata, and the two towns of Yoshida and Mori, all lie within a radius of between 20 and 31 kilometers of the Hamaoka plant.

“Until now, we have been kept in the dark,” Fujieda Mayor Shohei Kitamura said at a Feb. 17 news conference. “However, we have the responsibility of protecting a region that bears a huge risk of a nuclear accident.”

Chubu Electric has signed safety agreements requiring prior consent for Hamaoka plant operations with four cities: Omaezaki and Makinohara, which lie within the 5-km radius of the plant known as the Precautionary Action Zone, and Kakegawa and Kikugawa, which are within a 10-km radius.

When Chubu Electric on Feb. 14 submitted an application for safety inspections that would allow for a resumption of operations at the Hamaoka plant, it only notified those four municipalities. The seven municipal governments were not informed beforehand about the application, prompting them to seek their own safety agreements with Chubu Electric.

However, while the utility may enter such agreements, it will likely be reluctant to include a condition of prior consent that will make it more difficult to restart its nuclear reactors.

After the 2011 Fukushima nuclear accident caused damage to a wide area, the government required municipalities within about a 30-km radius of nuclear plants to compile safety precautions in the event of an accident, including evacuation procedures. The area within this radius is known as the Urgent Protective Action Planning Zone (UPZ).

The seven municipalities seeking to enter safety agreements with Chubu Electric all fall within the UPZ. The utility and the seven municipal governments have already established a coordinating council to exchange information.

## Another six months needed

### **TEPCO: Additional survey on faults takes 6 months**

[http://www3.nhk.or.jp/nhkworld/english/news/20140218\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20140218_16.html)

Tokyo Electric Power Company says it will take up to 6 months to complete an additional survey of seismic faults at its nuclear plant in Niigata Prefecture.

TEPCO applied for safety screenings by the Nuclear Regulation Authority at its Kashiwazaki-Kariwa plant as part of requirements to restart the number 6 and 7 reactors there.

But the NRA asked the utility to conduct an additional survey of 23 faults running beneath the nuclear complex.

During an on-site inspection on Monday, a team from the NRA assessed locations where TEPCO plans to dig for the survey.

Team leader Kunihiko Shimazaki said the utility's survey plan appears to be largely satisfactory.

TEPCO Managing Executive Officer Director Takafumi Anegawa says the additional survey will take 3 to 6 months.

In a new business plan released in December, TEPCO based its projected earnings and spending on the assumption that the 2 reactors at the plant will be back online in or after July.

Anegawa said the business plan is preliminary, and that the company will take assessments from the NRA screenings very seriously.

## All-out efforts to restart, including expensive safety measures

### **Eager to restart reactors, utilities increase spending on safety by 60%**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201402180067](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201402180067)

Electric power companies are pouring hundreds of billions of yen into safety measures at nuclear power plants to ensure their reactors can be restarted and to pull themselves out of their business slump.

The companies, hit hard by ballooning fossil fuel costs and a weaker yen, see nuclear energy as a sure ticket back to profitability, and the one thing that might stand in the way are the new safety standards for nuclear power plants.

“We will make all-out efforts to restart nuclear power plants as soon as we can,” Makoto Yagi, chairman of the Federation of Electric Power Companies of Japan and president of Kansai Electric Power Co., said at a news conference on Feb. 14.

According to a survey by The Asahi Shimbun in January, nine regional utilities and Japan Atomic Power Co. were expected to spend a combined 1.62 trillion yen (\$16 billion) to reinforce their nuclear power plants, up 60 percent from 998.2 billion yen for the same month in 2013.

The costs are likely to rise further because some operators are planning additional work.

But there is no guarantee that the Nuclear Regulation Authority (NRA) will approve the operators’ requests to restart their reactors. Many reactors are either decades old or sit above potentially active seismic faults, or both.

The utilities could lose huge sums spent to bolster preparedness for a disaster if the reactors cannot be put back online. However, it is a gamble the utilities are willing to take.

The power industry estimates a utility can save 100 billion yen annually in fossil fuel costs if it can restart a single reactor.

Currently, 17 reactors are subject to the NRA’s safety screening process.

The costs for added safety are particularly high at Tokyo Electric Power Co., Tohoku Electric Power Co., Chubu Electric Power Co. and two other utilities that own boiling water reactors, the same type as those destroyed in the March 2011 accident at TEPCO’s Fukushima No. 1 nuclear power plant.

Under the more stringent safety standards set last July by the NRA, electric power companies must install filtered vents for boiling water reactors to curb the release of radioactive substances in the event of a serious accident.

Chubu Electric reported the largest price tag for safety of 300 billion yen, double its estimate from a year earlier.

The company on Feb. 14 applied for NRA safety screening for the No. 4 boiling water reactor at its Hamaoka nuclear power plant in Omaezaki, Shizuoka Prefecture. The plant is located near the Nankai Trough, where a huge earthquake is expected to strike in the near future.

Chubu Electric is taking safety measures for the plant, including the construction of a 22-meter-high breakwater to protect against tsunami.

TEPCO's safety costs shot up nearly fourfold to 270 billion yen from 70 billion yen to enhance its preparedness against fires at its Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture, one of the largest in the world.

The company submitted applications to the NRA for safety screenings of the plant's No. 6 and No. 7 reactors, both boiling water types, in September.

Chugoku Electric Power Co. was expected to double its spending from a year earlier to 100 billion yen for safety measures at its Shimane nuclear power plant in Matsue, the capital of Shimane Prefecture, including the installation of a filtered vent.

The company applied for NRA screening of the No. 2 boiling water reactor at the plant in December.

Spending estimates by Kansai Electric and Shikoku Electric Power Co. remained at the same levels of a year earlier, at 285 billion yen and 83.2 billion yen, respectively.

They operate pressurized water reactors that have larger containment vessels and can withstand more pressure than those for boiling water reactors.

For this reason, operators of pressurized water reactors are allowed to delay the installation of filtered vents for five years.

Both Kansai Electric and Shikoku Electric filed their safety screening applications as soon as the NRA laid out the new standards.

Some utilities would not give specific timeframes on when they will apply for NRA screenings, despite the ongoing work to strengthen their nuclear plants.

Hokkaido Electric Power Co., Chubu Electric, Kansai Electric, Chugoku Electric, Shikoku Electric and Kyushu Electric Power Co. reported a combined pretax loss of 270 billion yen for the first nine months of the current fiscal year through December.

The losses are expected to shrink year on year due to increases in electricity rates.

But utilities that depend heavily on nuclear power, such as Kansai Electric, have been hit particularly hard financially.

To make up for the loss of electricity generated by nuclear power plants, the companies have sharply increased imports of liquefied natural gas and other fossil fuels to run their thermal power plants.

Their financial problems were exacerbated by a weaker yen, a result of the Japanese government's economic policy to spur exports.

Overall costs to import fossil fuels by the 10 companies rose to 5.5 trillion yen between April and December in 2013 from 5.1 trillion yen over the same period in 2012.

After TEPCO announced the decommissioning of the Fukushima No. 1 plant, Japan was left with 48 commercial reactors. They have all been idle since September 2013.

The Abe administration is set to restart reactors as soon as the NRA gives the green light, saying nuclear energy is indispensable for the Japanese economy.

February 22, 2014

## Surveying fault under Shika plant

### Scientists survey faults at Shika nuke plant

[http://www3.nhk.or.jp/nhkworld/english/news/20140222\\_14.html](http://www3.nhk.or.jp/nhkworld/english/news/20140222_14.html)

Japanese scientists have conducted an on-the-spot survey of a fault running beneath the Shika nuclear plant in Ishikawa Prefecture, central Japan.

Four scientists and a member of the Nuclear Regulation Authority, Kunihiro Shimazaki, began a 2-day inspection of the Shika plant on Saturday to determine whether a fault beneath one of the idled reactors is active.

The team descended a 40-meter-deep pit near the Number 1 reactor and entered a tunnel dug for examining conditions of the fault called S-1.

Some scientists said the S-1 fault could shift in the future, but Hokuriku Electric Power Company, which operates the plant, denied the possibility.

The government's new regulations ban the installation of nuclear reactors and other key equipment above faults that could shift in the future.

Restarting the idled reactors at the Shika plant depends on findings from the inspection.

The inspection team is to survey another fault located 1.4 kilometers east of the Shika plant before ending the inspection on Sunday.

The Nuclear Regulation Authority and scientists have so far carried out inspections of faults at 6 nuclear plants.

The authority concluded last year that the fault running beneath a reactor of the Tsuruga plant in Fukui Prefecture has the potential to shift.

February 24, 2014

## Active or not active ?

### **NRA experts split over fault**

<http://www.japantimes.co.jp/news/2014/02/24/national/nra-experts-split-over-fault/#.UwxcblXrV1s>

Jiji – Experts from the Nuclear Regulation Authority were split Monday over whether a fault under Tohoku Electric Power Co.'s Higashidori nuclear power plant in Aomori Prefecture is active.

During talks based on on-site inspections conducted by the NRA last year, some expressed understanding of the plant operator's claim that the fault is not active.



Taking the results of its additional survey into account, Tohoku Electric claimed the fault was not caused by seismic activity but is a crack created by the swelling of weathered minerals due to water absorption

Some experts criticized the utility's claim.

February 25, 2014

## Fukushima reservoirs heavily contaminated

### Health risk or not? Cesium levels high in hundreds of Fukushima reservoirs

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201402250071](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201402250071)



Radioactive cesium of mind-boggling 370,000 becquerels per kilogram of soil has been detected in the mud of the Myotoishi reservoir in Motomiya, Fukushima Prefecture. The reservoir is ringed by homes and a community center. (Shinichi Fujiwara)

By SHINICHI FUJIWARA/ Staff Writer

FUKUSHIMA--Very high levels of accumulated radioactive cesium have been detected in the mud of hundreds of reservoirs used to irrigate farmland in Fukushima Prefecture, where agriculture is a key industry.

The finding comes as prefectural authorities continue to try to assuage public concerns of contaminated food following the triple meltdown at the Fukushima No. 1 nuclear power plant three years ago.

A joint survey by the prefectural government and a branch office of the farm ministry found that the levels exceed 8,000 becquerels per kilogram of soil in 576 reservoirs. In 14 of those cases, the level tops 100,000 becquerels.

The central government says that reservoirs, many of which are located in residential areas, are not covered by its decontamination program.

The survey covered 1,939 reservoirs, or slightly more than half of the 3,730 in Fukushima Prefecture for agricultural use.

Prefectural authorities, fearing that contaminated mud from the reservoirs may reach farmland and create a health hazard for residents, is asking the central government to remove the waste.

Contaminated soil exceeding 8,000 becquerels corresponds to designated waste that must be removed at the central government's initiative.

According to the Environment Ministry, the amount of waste that exceeds 100,000 becquerels accounts for one-2,000th or less of all the debris produced as a result of decontamination work in Fukushima Prefecture.

The prefectural government and the Tohoku Regional Agricultural Administration Office of the Ministry of Agriculture, Forestry and Fisheries examined the mud of 1,939 of the reservoirs from February 2012 to last December. It was the first such survey to be done.

Officials said 108 of the 576 contaminated reservoirs are in zones where residents were evacuated due to the March 2011 nuclear disaster.

**The remaining 468 reservoirs are located outside the evacuation order zones and still supplying water to rice paddies and other farmland.** Those areas are mainly located in the central part of the prefecture, including the cities of Fukushima and Date.

Of the 14 reservoirs where cesium contamination exceeds 100,000 becquerels, nine are located in evacuation order zones. The remaining five are situated outside those areas. The highest contamination level of 390,000 becquerels was detected in the Ominamisaku reservoir in the town of Futaba, which is in an evacuation order zone.

Officials with the prefectural government's farmland management section said cesium that was discharged from the nuclear plant immediately after the accident attached to dust in the air and fell to the reservoirs along with the rain. Cesium that ended up on surrounding mountains was washed down into the reservoirs along with earth and sand, they added.

"As reservoirs are shaped like earthenware mortars, it is easy for earth and sand to accumulate," said an official of the section. "Because of that, contaminated soil in surrounding areas often ends up in the reservoirs, making their contamination levels high."

In some of the reservoirs where cesium measurements were high, officials noted that water levels were lower in summer and, as a result, the mud was exposed to the elements. In those instances, the exposed mud posed a health hazard to residents.

However, the Environment Ministry says it has no plans to dredge the reservoirs to remove the contaminated mud.

"Radiation levels in the air (around the reservoirs) are not high enough to have an adverse effect on the health of residents," said a ministry official in charge of decontamination work.

An official of the farm ministry's disaster preparedness section stated: "The Environment Ministry is in charge of decontamination work. As such, we do not have any plans to decontaminate the mud in those reservoirs."

The official made clear that the farm ministry's job is only to provide information on the contamination levels of those reservoirs to the Environment Ministry.

The central government can order Tokyo Electric Power Co., operator of the Fukushima No. 1 nuclear power plant, to pay the costs of decontamination work based on the special measures law to deal with contamination caused by radioactive materials.

But if the farm ministry removed the mud from the reservoirs, the work would not be covered by funding for decontamination. As a result, the central government--not TEPCO--could be obliged to shoulder the costs.

According to calculations by the prefectural government's farmland management section, the cost to decontaminate all of the reservoirs, including transportation of the waste to temporary storage sites, would be 15.4 billion yen (\$154 million).

The central government has earmarked 260 billion yen for decontamination work in the budget for fiscal 2014 that starts in April.

"The decontamination of the reservoirs can be accomplished with less than one-tenth of the central government's budget for decontamination work," said Kazuaki Kikuchi, head of the farmland management section. "If the central government provides the amount to us (Fukushima prefectural government), we can do the decontamination works instead."

Of the five reservoirs with cesium levels exceeding 100,000 becquerels in areas other than evacuation order zones, the mud in the Myotoishi reservoir in the Takagi district of Motomiya, some 55 kilometers west of the stricken Fukushima plant, had the highest contamination at **370,000 becquerels**.

The reservoir sits in the central part of a 200,000-square-meter hilltop residential area with 392 households and a senior high school.

Cesium levels in the reservoir water are so low as to be beyond detection. The water is used to irrigate rice paddies and other farmland at the foot of the hill.

Rice farmer Tokuo Nemoto, 65, uses water from the reservoir to irrigate his 3,000 square meters of land under cultivation. Cesium levels in the rice he harvested after the nuclear accident are negligible.

Even so, Nemoto is worried.

"Our family has been using the reservoir since the days of my grandfather. If it becomes impossible to use it, I will not be able to cultivate rice," he said with a downcast look.

Kiyoshi Ishii, 71, who lives near the reservoir and is head of the local community association, was unable to hide his anger.

“If the reservoir dries up and the dirt in the mud rises into the air, we will not be able to remain here. Does the administration have any intention to do something to prevent that from happening?”

According to Eisaku Shiratani, a researcher with the National Institute for Rural Engineering of the National Agriculture and Food Research Organization, the contamination is a pressing issue.

Shiratani, who is knowledgeable about water-related issue, noted that soil will accumulate at the bottom of reservoirs over time with the result that water depth becomes shallower. This carries the heightened risk of the soil becoming exposed to the air if water levels drop due to scant rainfall.

“The government should remove highly contaminated mud in reservoirs in residential areas as soon as possible,” he said.

By SHINICHI FUJIWARA/ Staff Writer

## Tokai 2 and safety measures

### **Tokai No.2 plant operator to explain safety**

[http://www3.nhk.or.jp/nhkworld/english/news/20140225\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20140225_29.html)

The operator of the Tokai No. 2 nuclear power plant, north of Tokyo, plans to explain its safety measures to local governments before applying for the state screening to restart operations.

Japan Atomic Power Company plans to conclude a memorandum as early as next week with 11 municipalities including Tokai village, which hosts the plant. The municipalities had requested such a document.

The memorandum calls for the company to provide an explanation to local governments before it applies for safety screening with the Nuclear Regulation Authority.

It also says the operator should gain understanding of the application from 6 municipalities closest to the plant.

The document is expected to give local governments a stronger voice, as Japan Atomic Power will need to address their concerns before applying for safety screening.

After concluding the memorandum, the operator plans to explain its safety measures to the municipalities and then apply for the screening as early as the end of March.

Many municipalities near the plant have yet to form evacuation plans, however. The number of people within a 30-kilometer radius of the plant who would have to evacuate in case of an accident is nearly one-million.

February 27, 2014

## Safety screening at Hamaoka

### Safety screening begins on Hamaoka reactor

[http://www3.nhk.or.jp/nhkworld/english/news/20140227\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20140227_27.html)

Japan's nuclear regulators have begun a safety screening of a reactor located at the center of the projected focal area of a mega-quake in central Japan.

Members of the Nuclear Regulation Authority on Thursday heard from officials of Chubu Electric Power Company about safety steps taken for the Hamaoka plant in Shizuoka Prefecture.

The utility applied for the screening of the plant's No. 4 reactor on February 14th. Clearing the government's new, stricter guidelines is needed to reactivate any reactor.

The plant's reactors were shut down following a government request after the 2011 Fukushima nuclear crisis. The request was given out of concerns over a mega-quake expected in the region.

Chubu Electric officials told NRA officials that the company is building a 22-meter-high breakwater to prepare for a tsunami.

Regulators asked how the utility examined the possible effects of a quake when knowledge of the focal area is limited. They also asked how the utility expects the tsunami to affect the facility's ability to take in sea water to cool the reactor.

Hiromu Masuda, the Chubu Electric official in charge of nuclear power, told reporters after the meeting that measures against earthquakes and tsunami will be the key to the screening.

He also said the utility has collected all kinds of data on the focal area and will offer a detailed explanation.

Applications for safety screenings have been made for 17 reactors at 10 plants. That number accounts for more than one-third of Japan's reactors.

March 5, 2014

## Promises of safety

### **Tokai plant operator promises safety explanation**

[http://www3.nhk.or.jp/nhkworld/english/news/20140305\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20140305_28.html)

A nuclear power plant operator north of Tokyo has promised nearby local municipalities that it will explain its safety measures before applying for screening to restart operations.

The promise came in a rare memorandum intended to address public concerns on nuclear safety after the Fukushima Daiichi accident.

The head of Japan Atomic Power Company, which runs Tokai No.2 nuclear power station, shared the note with representatives of 11 municipalities near the plant on Wednesday.

The memorandum calls for briefing the municipalities prior to any application for safety screening. It also says the application must win the approval of the 6 municipalities closest to the plant.

The municipalities had demanded the memorandum. It is unusual for a nuclear plant operator to exchange such a document with local governments other than the one hosting the plant.

The utility apparently agreed to the demand as restarting Tokai No.2 plant has become a priority while its other plant in central Japan remains on hold due to underlying active faults.

Japan Atomic Power hopes to apply for safety screening as early as the end of this month after finishing its explanation to the municipalities.

But a restart still looks uncertain, as most of the municipalities lack evacuation plans in the event of a nuclear emergency. Nearly 1 million people live within a 30-kilometer radius of the plant.

March 7, 2014

## Screenings at Tomari

## **Regulator to resume Tomari reactor screening**

[http://www3.nhk.or.jp/nhkworld/english/news/20140307\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20140307_33.html)

Japan's nuclear regulator will resume safety screenings at the Tomari nuclear power plant in Hokkaido. The announcement comes after the operator submitted a revised application to the Nuclear Regulation Authority.

The NRA suspended screenings on the plant's number 1 and number 2 reactors last July. It had found the Hokkaido Electric Power Company used computer data from another reactor...number 3...in its initial application. The data concerns safety measures designed to prevent fuel meltdowns.

With the resumption of the screening, the regulator has processed all pending applications for checks of 17 reactors at 10 plants nationwide.

The utility is complying with the regulator's instructions regarding the number 3 reactor. It is improving a sprinkler system at the containment vessel, saying it has postponed its restart as it is unclear how long the work will take.

The company hopes to restart the other 2 reactors soon, saying it is paying higher fuel costs for thermal power generation while the nuclear reactors are offline.

## **Malfunction at Fukushima Daini**

### **Govt. monitor fails to show Fukushima Daini data**

[http://www3.nhk.or.jp/nhkworld/english/news/20140307\\_13.html](http://www3.nhk.or.jp/nhkworld/english/news/20140307_13.html)

Japan's nuclear regulator is investigating a malfunction in a system that monitors nuclear power plants around the country.

The Nuclear Regulation Authority uses a system called Emergency Response Support System, or ERSS, to monitor the pressures and temperatures in reactors nationwide.

On Thursday night, data on the Fukushima Daini plant's Numbers 2 and 3 reactors stopped appearing on the system. The plant, 10 kilometers south of the crippled Fukushima Daiichi, has been offline since the Daiichi accident 3 years ago.

The agency has instructed the plant's operator, Tokyo Electric Power Company, to send data on the 2 reactors by fax. It is also trying to determine the cause of the glitch.

The regulator says the temperature inside the 2 reactors is stable at around 20 to 30 degrees Celsius.



A similar problem occurred 2 years ago at the same plant. Last year, a problem with the ERSS was reported with the Monju fast-breeder reactor in central Japan, which was also off-line.

The ERSS failed to work at the time of the Fukushima Daiichi nuclear accident in 2011 due to a power blackout at the plant and a lack of emergency power units.

## Tokai 2 and safety measures (2)

### Plant operator gives pre-safety screening briefing

[http://www3.nhk.or.jp/nhkworld/english/news/20140307\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20140307_32.html)

The operator of a nuclear power plant near Tokyo has briefed local authorities on new safety measures before applying for government approval to restart the facility.

Officials from Japan Atomic Power Company gave the briefing about the Tokai No. 2 plant to the Ibaraki prefectural government on Friday.

The officials reportedly explained the planned installment of a filtered vent that they can use during accidents to lower pressure in containment vessels and emissions of radioactive substances. The measures also include making the plant's power cables fireproof.

The steps are aimed at meeting new requirements by regulators to prepare for tsunamis, earthquakes and fires.

The briefing came 2 days after the firm signed a memorandum with host municipality Tokai Village and 10 nearby municipalities. The document calls for an explanation by the operator before applying for screening.

The company says it will give similar briefings to the municipalities.

But there is no prospect of a restart anytime soon. The number of people living within 30 kilometers of the plant totals nearly one million -- the most for any nuclear power station in Japan.

The municipalities have made little progress in drawing up evacuation plans. The operator needs consent from the local governments.

## No crime fiction

### **Illegal nuclear dumping in Shiga raises alarms - Culprits not ID'd; 8,700 tons of cesium-tainted chips missing**

<http://www.japantimes.co.jp/news/2014/03/07/national/illegal-nuclear-dumping-in-shiga-raises-alarms/#.UxtnvIXrV1s>

by Eric Johnston  
Staff Writer

In March 2013, a resident of Takashima, a small town of about 51,000 people on the northwest side of Lake Biwa, discovered something unusual. Along the banks of a local river, someone had dumped, over a more than 500-meter-long area, 77 bags containing 300 tons of wood chips.

Something about the bags aroused local suspicion, but inquiries by local residents to the Takashima Municipal Government the following month produced only vague assurances that the bags were part of a road-paving project along the river bank and that there was nothing to worry about.

As it turned out, there was cause for concern. Local residents continued to pester the city and prefecture for answers, and by August independent monitors had found the bags were contaminated by radiation.

How contaminated the site was remains the subject of controversy. A nonprofit group based in Kyoto consisting of academic experts carried out their own measurements at the site and came up with a level of 12,000 becquerels/kg. But a prefectural survey, carried out in October not long after a large typhoon passed through the area, showed readings of 3,000 becquerels/kg and then 3,900 becquerels/kg.

Environmental regulations stipulate that debris with less than 8,000 becquerels/kg may be treated as industrial waste not subject to the special handling reserved for more radioactive waste.

Details about what happened are still sketchy. Prefectural investigations have discovered who dumped the waste and parts of the story have been reported. On Tuesday, the Shiga government filed a criminal complaint with the Shiga Prefectural Police against three individuals — an executive with a consulting firm in Tokyo, the owner of a construction company in Omihachiman in Shiga, and another man believed

to have acted as a go-between. On Thursday, the Shiga police raided several offices belonging to those implicated.

**But much information has been kept from the public**, including the names of these people.

Maki Umemura, a local translator, is one of about a half-dozen residents who have filed an appeal with Shiga prosecutors and police, demanding a formal, public investigation.

**“The wood chips discovered in Takashima were part of a larger shipment of 9,000 tons being transported to Kagoshima Prefecture for use in a manure plant. But Kagoshima rejected the chips when they discovered they were tainted with radiation, including the highly toxic cesium-137. Worse, the remaining 8,700 tons of chips are still missing,”** she said.

What the Takashima incident clearly demonstrated was just **how easy it is for unscrupulous firms recruited to dispose of Fukushima’s radioactive debris to simply dump it wherever they please**, and how urgent it is to at least reduce the odds of another case of illegal dumping by constructing proper interim storage facilities for tainted waste as quickly as possible.

But three years after March 11, 2011, where to store Fukushima’s radioactive waste remains the subject of discussions between Tokyo and the towns, cities and prefectures affected.

Fukushima Gov. Yuhei Sato has proposed a plan to build two interim storage facilities in the towns of Okuma and Futaba, which host the crippled Fukushima No. 1 power plant. The town of Naraha, farther south near the Fukushima No. 2 power plant, would meanwhile host a facility to dispose of incinerated ash by mixing it with concrete.

But the local governments in Fukushima where the plants would be built have several conditions for agreeing to the proposal. One is a guarantee from Tokyo that waste stored at the facilities will be removed and sent elsewhere for final disposal within 30 years. The half-life of cesium-137 is 30 years, the maximum period Fukushima wants to host interim facilities.

Ishihara has hinted that if the proper atmosphere was created in Fukushima, the central government would offer such guarantees.

But Sato told reporters after a December meeting with Environment Minister Nobuteru Ishihara that formal legislation authorizing the waste to be removed was not enough.

“Safety, and local economic revitalization, are also issues that have to be discussed one at a time in order to make progress on discussions (on whether to allow the building of the facilities),” Sato said.

The central government wants the facilities up and running by early 2015 and has set aside ¥100 billion in the fiscal 2014 budget to purchase the land. Construction-related costs are expected to total about ¥1 trillion.

But many Fukushima residents, and politicians like Sato, worry that whatever promises Tokyo politicians make in 2014 may well be forgotten three decades from now, and that what is called an “interim” facility today may end up becoming a permanent facility down the road, especially since details concerning the final storage facility have yet to be finalized.

In addition, how long it will actually take to physically move the debris to the new facilities is, at this point, only an educated guess.

Last December, an Environment Ministry panel was established to research transport methods for the estimated maximum 28 million cu. meters of Fukushima debris that needs to be put in interim storage. To complete the task in three years, the committee estimated, would require using nearly 2,000 10-ton trucks a day.

“It will be difficult, but we’re still aiming to finish transporting the waste to interim facilities within a few years,” said Shinji Inoue, senior vice environment minister, following the release of the committee’s report.

Yet as Tokyo and Fukushima negotiate terms and try to set a clear timetable, the illegal dumping at Takashima has local politicians and residents elsewhere concerned that, due to the unprecedented nature of the Fukushima disaster and the fact that it’s likely to be a while before the interim storage facilities are ready to go, their legal options will be limited if they happen to become the next victim of a drive-by nuclear dumping.

Shiga Gov. Yukiko Kada, an environmental scientist by training, has come under criticism for her response to the Takashima incident. She says she lacks the authority and legal framework to deal with illegal dumping.

But there are also transparency issues that the governor has yet to address. As work to remove the wood chips was finishing up in early March, the prefecture refused to disclose crucial details, like where the

chips are being taken. Workers at the site only said the waste was being taken to a “remote location” where they would be stored “for decades.”

Radiation levels in early March at the entrance to the dump site, after the chips were removed, had dropped to under 0.05 microsieverts per hour, according to Umemura’s dosimeter — more or less within the prefecture’s pre-quake aerial radiation levels of 0.031-0.061 microsieverts per hour. But the concern now is: What if another nuclear dumping incident happens?

“Shiga Prefecture and Takashima are victims (of the Takashima dumping). Therefore, unless the central government and Tepco take responsibility for the environmental pollution by (clearly) saying that the perpetrators are responsible, the same problem will occur elsewhere in Japan,” Kada said.

March 8, 2014

## Inadequate preparation?

### **Nuclear society says inadequate safety steps led to Fukushima crisis**

<http://mainichi.jp/english/english/newsselect/news/20140308p2g00m0dm037000c.html>

TOKYO (Kyodo) -- Japan's nuclear academic society said Saturday the Fukushima Daiichi nuclear complex withstood the impact of the huge earthquake in March 2011 but saw a disaster occur due to inadequate preparations against tsunami and severe accidents.

"We think safety functions were not particularly affected by the earthquake (before tsunami waves hit the plant)...the direct cause of the accident was insufficient measures to deal with tsunami, severe accidents and emergencies," an accident investigation panel of the Atomic Energy Society of Japan said in its report.

The report also said nuclear experts had failed to play their part to improve nuclear safety before the Fukushima crisis, as they "locked themselves in their narrow field of expertise" and were not much aware of the risks associated with natural disasters.

"Tsunami issues were discussed by experts on tsunami, and not enough study was made on what kind of risks they could bring to nuclear power plants," the report said.

The document follows four other nuclear accident investigation reports released from a Diet-appointed panel, Tokyo Electric Power Co., the operator of the Fukushima Daiichi plant, and others.

Some controversial issues include whether the March 2011 earthquake could have damaged equipment necessary for ensuring safety and that a small-scale coolant loss may have occurred in the plant's No. 1 unit.

But the academic society's panel denied that such a loss of coolant had occurred, based on its data analysis.

The panel is headed by Satoru Tanaka, a professor at the University of Tokyo. For analysis, the panel said it used data announced by the government and TEPCO as well as information included in other accident investigation panel reports.

In the Fukushima nuclear crisis, tsunami waves that followed a magnitude 9.0 earthquake flooded electrical equipment, leading to a loss of power sources as well as the key reactor cooling systems.

The Nos. 1 to 3 reactors suffered meltdowns, making it the world's worst nuclear accident since the 1986 Chernobyl disaster.

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March 10, 2014

## **New survey of faults at Kashiwazaki**

## **TEPCO surveying faults under Kashiwazaki plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140310\\_22.html](http://www3.nhk.or.jp/nhkworld/english/news/20140310_22.html)

Tokyo Electric Power Company has begun an additional survey of geological faults under a nuclear power plant in Niigata on the Sea of Japan. Confirmation that the faults are not active is one of the requirements for restarting the plant's idle reactors.

TEPCO last year applied for safety screenings by the Nuclear Regulation Authority of the numbers 6 and 7 reactors at its Kashiwazaki-Kariwa plant. The reactors are currently offline for regular inspections. The NRA asked the utility to conduct further underground studies of the 23 faults that lie under its reactor buildings and other parts of the complex.

On Monday, TEPCO began drilling operations to check the hardness of the strata. The work was shown to the media at one place a little over a kilometer from the plant.

TEPCO plans to dig observation pits 4 meters in diameter and up to 50 meters deep at 4 locations near the reactor buildings. The utility will also conduct drilling surveys in 7 other places in and outside the plant complex. The company says it will take up to 6 months to complete the survey.

TEPCO's latest 10-year business plan, approved by the government in January, assumes a restart of reactors at Kashiwazaki-Kariwa in or after July of this year. But the nuclear regulator's safety screening may take longer, depending on the progress of the survey.

Masayoshi Shimada, the plant's deputy chief, says the planned schedule for the restarts is only provisional. He said priority will be placed on safety while the survey is being conducted. )

## **Importance of learning lessons from 3/11**

### **Panel heads stress lessons from Fukushima accident**

[http://www3.nhk.or.jp/nhkworld/english/news/20140310\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20140310_34.html)

The former heads of 3 panels that conducted separate investigations into the 2011 Fukushima nuclear accident have stressed the importance of learning from the disaster. They have called for applying such lessons on the assumption that accidents will happen in the future.

The 3 people who headed the government, Diet and private investigative commissions were speaking in a debate on Monday.

Their discussion came one day before the 3rd anniversary of the earthquake and tsunami in northeastern Japan. The natural disasters triggered the accident at the Fukushima Daiichi nuclear power plant.

Former private commission chief Koichi Kitazawa referred to the country's Nuclear Regulation Authority,



or NRA, set up 2 years ago.

Kitazawa said the NRA was made independent from the government as a matter of form. But he added that it remains to be seen if it can continue serving as a body that can ensure the safety of the people without being affected by political and economic factors.

Former government panel chief Yotaro Hatamura talked about recent moves to restart idle reactors.

Hatamura said the essence of the nuclear accident is that people died after being made to evacuate their homes. **He stressed the need to check evacuation plans on the assumption that accidents will occur even after the safety at nuclear plants is strengthened.**

Former Diet commission chief Kiyoshi Kurokawa pointed out that the lesson of 3 years ago was that the difficulty of expressing personal opinions in businesses and society resulted in problems being overlooked.

Kurokawa said people should not shut their eyes when doubts arise, and instead think about solutions to problems.

March 11, 2014

## **NRA urges staff to keep 3/11 in mind**

### **NRA head urges recalling 2011 nuclear disaster**

[http://www3.nhk.or.jp/nhkworld/english/news/20140311\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20140311_20.html)

Tuesday marks the 3rd anniversary of the March 11th earthquake and tsunami and the ensuing nuclear accident at the Fukushima Daiichi power plant.

The head of Japan's nuclear watchdog has urged officials on its staff to keep the accident in mind and ensure safety as they do their job.

Nuclear Regulation Authority Chairman Shunichi Tanaka was speaking to about 700 NRA officials.

Tanaka said he is always reminded of the enormous distress the accident caused whenever he talks with people in Fukushima Prefecture. Tanaka himself is from Fukushima.

He said NRA officials must be aware that whenever there's trouble at the crippled plant, a dark cloud of concern weighs on the minds of people who have been displaced by the accident.

Tanaka said it is important for NRA officials to keep the accident in mind and to consider what their

responsibilities as they work.

He asked them to sympathize with nuclear accident victims, be aware of what is happening in Fukushima and reconfirm the meaning of the culture of safety.

Tanaka referred to the ongoing safety screening of 10 idled nuclear plants across Japan. He called on the officials to carry out their tasks, bearing in mind the need to prevent accident at the plants. The screening is a precondition for restarting the plants.

The Nuclear Regulation Authority and its secretariat were launched in September 2012. The country's former nuclear regulatory body was seen as failing in its watchdog role.

March 12, 2014

## Still doesn't feel safe enough

### Reactors still feared despite new rules

<http://www.japantimes.co.jp/news/2014/03/11/national/nuclear-power-is-still-feared-despite-tests-walls-tougher-safety-standards/#.Ux9jYIXrV1s>

by Yuriy Humber and Masumi Suga  
Bloomberg

The cost of restarting Japan's nuclear power plants: ¥1.3 trillion and counting.

That is the amount power companies have committed so far on thousands of tons of reinforced concrete and steel, armies of workers, tsunami walls and seismic tests.

It has all been to meet tougher safety standards for the 48 reactors on coastlines throughout the earthquake-prone country. And also to convince regulators the defenses will withstand a quake and tsunami on an intensity of what struck the Tohoku region three years ago Tuesday, causing one of history's worst civil nuclear disasters and shutting down the nation's atomic plants.

As Prime Minister Shinzo Abe backs plans to restart reactors, Japan has to weigh the economic damage, as fossil fuel imports drive record trade deficits, against risks to safety and the environment. At stake are

nuclear complexes designed to produce a combined 5 trillion kilowatts of energy worth ¥40 trillion, according to Penn Bowers, an energy analyst with CLSA Asia-Pacific Markets in Tokyo.

“In the short-term, economically it’s a no-brainer to restart” the idled reactors, Bowers said in an interview this month.

Units at Shikoku Electric Power Co.’s plant in Ikata, Ehime Prefecture, and Kyushu Electric Power Co.’s Sendai station in Kagoshima Prefecture are among the top contenders to win first approval to restart, he said.

The economic pressures to restart reactors mask bigger issues the nation has yet to tackle, said Tatsujiro Suzuki, vice chairman of the Atomic Energy Commission.

These include: How much of Japan’s energy, if any, should nuclear power provide in the future? What liabilities do utilities carry in case of accidents and what part should be paid for by the government? Will the nation build more atomic stations and how will they fit with a new law to split generation from transmission?

Incoming Tokyo Electric Power Co. Chairman Fumio Sudo, who was formerly president of steel maker JFE Holdings Inc., said in January that Tepco’s whole management and business model needs to be shaken up to make them competitive.

“At the moment, no one wants to link all these things together,” AEC’s Suzuki said.

As the companies pour concrete, public confidence in restarting reactors remains low following flurries of secondary accidents at Tepco’s Fukushima No. 1 plant, including leaks of hundreds of tons of radioactive water.

The economy needs nuclear power and hardware is important when it comes to safety, but it isn’t enough, Suzuki said. The industry needs a change in mentality.

“This is more difficult, because it goes beyond the technical,” Suzuki said in an interview. “You have to delve into management, policy, institutional arrangements. That may take some time. It may be about the culture.”

Japan's nuclear culture was a highlight of the six-month independent Diet probe into the disaster led by academic Kiyoshi Kurokawa. His report in July 2012 was withering in its assessment of Tepco. The disaster was "profoundly man-made" owing to management lapses and collusion with government regulators, he said.

To merit a restoration of public trust, the industry needs to work on changing its operating culture, Kurokawa said in an interview in December.

"One of the biggest lessons from the report was to think the unthinkable," Suzuki said.

The unthinkable happened on March 11, 2011, when the magnitude-9.0 earthquake, the biggest in Japan's recorded history, hit off the coast of Tohoku. It generated tsunami along 860 km of coastline, leaving 18,520 people dead or missing and thousands more displaced.

At Fukushima No. 1, located on the Pacific coast, the quake and tsunami knocked out the power supply, leading to three reactor meltdowns. The radiation that was subsequently released forced the evacuation of 160,000 people in the area.

Today, the area around Fukushima No. 1 remains a public no-go zone that is policed year-round.

The disaster forced policymakers to look at other nuclear plants at risk and they zeroed in on one: the Hamaoka facility in Shizuoka Prefecture.

Decades of research by seismologists such as Katsuhiko Ishibashi had described Hamaoka as the country's most dangerous atomic station because it is closer to Tokyo and also near an earthquake fault line.

Two months after the Fukushima meltdowns, then-Prime Minister Naoto Kan called on Chubu Electric Power Co. to shut down Hamaoka's three operating reactors. The government has estimated there is an 87 percent chance of a magnitude-8.0 earthquake within the next 30 years in Suruga Bay, next to which the plant sits, Kan said at the time.

That request was unprecedented and left Hamaoka station chief Yusuke Kajikawa "ashamed and embarrassed," he said.

Kajikawa said he visited the crippled Fukushima No. 1 plant two months after the 2011 crisis started to talk with Masao Yoshida, his counterpart there, who was then trying to regain control of the station.

“We had a long, frank discussion,” Kajikawa said in an interview after a tour of the Hamaoka plant, adding that he has known Yoshida for more than 20 years. “What he told me then served as the basis for the countermeasures we’re implementing now.”

The most visible change at Hamaoka is the construction of a 1.6-km-long concrete tsunami wall, reinforced with 40,000 tons of steel. It stretches across a beach in front of the plant.

When completed this year the wall will be 22 meters high. The height is based on the latest estimates that indicate an earthquake in the area would generate 19-meter-high tsunami. The wall is part of a \$3 billion plan to shore up Hamaoka’s defenses as Chubu Electric seeks permission to restart the idled reactors.

Aside from the wall, the company is adding a 20-megawatt backup gas plant on higher ground at the site to power cooling systems in emergencies.

Closing all Japan’s nuclear reactors meant opening power plants burning coal, natural gas and oil to keep supplying electricity to cities and industry. All those fuels are imported.

They drove up the country’s trade deficit to a record ¥11.5 trillion last year, from ¥6.9 trillion in 2012.

Japan is spending an extra ¥10 billion a day while it keeps reactors idle, Kajikawa said.

“We’re a country with no natural resources. We can’t continue to burn such amounts of fossil fuel,” he said.

The arrival of Abe as prime minister in December 2012 gave a boost to the pro-nuclear camp. Cutting energy costs is part of his plan to revitalize the economy.

Abe’s push on nuclear shows how polarizing the issue is here.

At least three former prime ministers have publicly opposed Abe on reactor restarts, including Junichiro Koizumi, Abe’s mentor and one of the country’s most popular postwar leaders. Naoto Kan, prime minister at the time of the 2011 quake, is another.

“The reason I’m against nuclear is that people cannot fully control it,” Kan told reporters at a briefing in December.

Industrial accidents can happen, but nothing on the scale of nuclear disaster, he said. A worst-case scenario for Fukushima would have made a third of Japan’s land uninhabitable, Kan said.

Opponents also point to the cost of nuclear disasters. The government has estimated it will take ¥11 trillion and 40 years to clean up the Fukushima site.

The former prime ministers find themselves in an unusual place on the opposite side of the argument from Japan Inc.

Keidanren, the country’s largest business lobby, advocates a return to what it calls stable and cheap energy that does not rely on imports.

While more than 42,000 megawatts of nuclear reactors are sitting idle, the country has added just 5,825 megawatts of renewable energy capacity since July 2012 — the time the country introduced the world’s most lucrative subsidies for solar- and wind-power producers, according to Ministry of Economy, Trade and Industry data.

A further 26,211 megawatts of solar, wind, biomass and other renewable energy projects have been approved, though the projects will take as long as five to 10 years to complete, ministry data show.

Chubu Electric, too, added 11 wind turbines next to Hamaoka to benefit from the coastal breezes that bring surfers to the area from all over Japan. Station chief Kajikawa dismisses the idea that the turbines rival the nuclear plant.

“They ran at 26 percent capacity” in 2012, he said, pointing out the lethargic turn of the rotors. “We’d need 6,000 of them here to replace Hamaoka.”

How Japan proceeds on nuclear will ripple beyond its own borders with nations in Europe and beyond wavering over whether to pursue atomic power, Wade Allison, a physics professor at Oxford University, said during a recent visit to Hamaoka.

“The world is looking at Japan and what you do with nuclear energy,” Allison said. “The faster Japan can turn the reactors on the better.”

As the question of turning reactors back on continues to divide people, plant operators face other hurdles.

The Nuclear Regulation Authority was formed in September 2012 as an independent watchdog to replace the previous regulator. Its chairman, Shunichi Tanaka, said the agency has “the world’s toughest guidelines” for operating nuclear plants.

The rules include building secondary control centers at least 100 meters from reactor buildings to manage emergency cooling systems and radiation filter vents. They also stipulate tsunami defenses must be based on the largest estimated waves from the most recent scientific assessments.

Implementing the rules needs both time and cash. The improvements at Hamaoka, for example, will not be complete until some time after 2015.

And yet the biggest changes the industry will need to show is in its attitude, Kajikawa said, citing his conversations with the late Yoshida, who led the fight to bring Fukushima No. 1 under control.

Yoshida died on July 10 last year and more than 1,000 people attended his memorial in August to pay respects to the man some say saved Japan from a much bigger nuclear disaster.

Yoshida kept repeating that the biggest changes needed among nuclear plant operators is attitude to risk, Kajikawa said.

## Problems inherent to nukes not addressed

### **EDITORIAL: Government must face problems inherent in nuclear energy**

<http://ajw.asahi.com/article/views/editorial/AJ201403120037>

Communities became ghost towns overnight and now only an eerie silence prevails. In wind-blown shopping streets devoid of life, abandoned homes are becoming rundown and weeds are growing everywhere.

This is the reality of the Futaba district in Fukushima Prefecture, three years after residents were forced to evacuate due to the triple meltdown at the nearby Fukushima No. 1 nuclear power plant.

In the compound of the crippled facility, some 4,000 workers are risking exposure to radiation in their tasks, such as the battle to control radiation-contaminated water.

## **EVACUATION CAN TAKE DAYS**

In a series of editorials we ran in July 2011, The Asahi Shimbun proposed that Japan should aim to become a "society without nuclear power generation." We argued in favor of decommissioning superannuated nuclear reactors and closing plants in areas where major earthquakes are anticipated. We also called for a speedy switch to alternative energy sources to end the nation's reliance on nuclear power generation.

We stand by those proposals. Moreover, we have since been able to determine that the time needed to rid our society of nuclear power plants is actually a lot shorter than initially estimated.

We say this because it is now clear that the feared problem of power shortages in summer and winter can be mostly resolved through conservation efforts newly rooted in our society and power-sharing across broad regions among utilities.

Yet, the Abe administration's policy is to continue to depend on nuclear power generation to some degree as an "important base load electricity source."

The administration intends to resume operations of nuclear plants that clear safety screenings by the Nuclear Regulation Authority. For all its talk about "reducing the nation's reliance on nuclear power generation," the administration clearly embraces restarts of nuclear reactors that are presently offline.

Has the Abe administration done enough to control the "nuclear risks" that became apparent following the Fukushima disaster?

Let's look at this in terms of disaster control measures and evacuation plans.

In the immediate aftermath of the Fukushima disaster, the evacuation of the Futaba district encountered serious glitches. Buses chartered by the municipalities to transport the evacuees failed to show up because drivers feared being exposed to radiation. Residents fleeing in their cars became stuck in huge traffic snarls.



Later, the number of municipalities that were obliged to devise their own disaster preparedness plans rose to 135.

They are all located within a 30-kilometer radius of nuclear plants. The central government's disaster management guidelines and manuals were also duly revised.

But most of those guidelines and manuals are nothing more than to-do lists, and even now not even half of the municipalities concerned have come up with specific evacuation plans.

The nongovernmental Kankyo Keizai Kenkyusho did a study to estimate how long it would take to evacuate everybody living within a 30-kilometer radius of 17 nuclear power plants. Naomi Kamioka, the institute's director, found that even if evacuees are able to travel on expressways, they would still need eight hours to flee the vicinity of the Oi plant in Fukui Prefecture and reach safety. In the case of the Hamaoka plant in Shizuoka Prefecture, the figure was 63 hours. If evacuees can travel only on ordinary roads, Kamioka found that it could take as long as six days to reach a safe distance from the Hamaoka plant.

These are only estimates, but the findings basically mirror other detailed simulations released by prefectural authorities.

Even though the Nuclear Regulation Authority and the secretariat of the Nuclear Emergency Preparedness Council are assisting local governments in drawing up evacuation plans, there is no system to objectively determine if their plans are really viable.

Given what happened in Fukushima, we suggest that some sort of "evacuation plan evaluation committee" be established. It would include transportation experts to examine the appropriateness of each municipality's evacuation plan and share that information with all residents living within a 30-kilometer radius of nuclear power plants. A system also needs to be set up that allows all local governments in areas near nuclear power plants to have a say in whether or not to restart reactors

.

## **LIMIT ON AMOUNT OF NUCLEAR WASTE**

Radioactive waste is one potential huge risk that goes with nuclear power generation. If nuclear power plants resume operations, they will add to the nation's stockpile of spent nuclear fuel. This will be a problem as the spent fuel pool at each plant is nearing its capacity limit.

The government intends to set up a nuclear fuel cycle business by transporting spent fuel to the reprocessing plant in Rokkasho, Aomori Prefecture, for recycling. Aside from the fact that nuclear fuel reprocessing is extremely costly, there are only three nuclear power reactors that could use the recycled fuel. Even if the reprocessing plant can be put into operation, it will contribute only to increasing the stockpile of plutonium.

And yet, there is still no site for the disposal of highly radioactive waste that is produced by reprocessing spent fuel.

The difficulty of disposing of radioactive waste is an issue that the government has been confronting for a very long time. After the Fukushima disaster, the Science Council of Japan proposed setting a limit on the total amount of radioactive waste produced through nuclear power generation. But there are no signs that the Abe administration has discussed this proposal in any depth.

## **COST OF NUCLEAR POWER GENERATION**

This raises a question. Why does Japan need to restart its offline nuclear reactors? The government insists that not to do so would drain the nation's "wealth." But if the truth be told, what the government is really watching out for is the financial benefits for electric power companies.

With the yen weakening and the nation's nuclear reactors still offline, the utilities have been hit with rapidly growing costs of fossil fuel imports for thermal power generation, and their financial situation is worsening. So far, six utilities have raised electricity charges.

Without question, the effects of higher electricity charges on households and businesses need to be watched closely. And it is also a fact that restarting the idle reactors will improve the utilities' bottom line in the immediate future.

But when the costs of radioactive waste disposal and the risks of future nuclear accidents are taken into account, nuclear power generation will cost the utilities much more than what they are paying now, and the government ought to admit this fact.

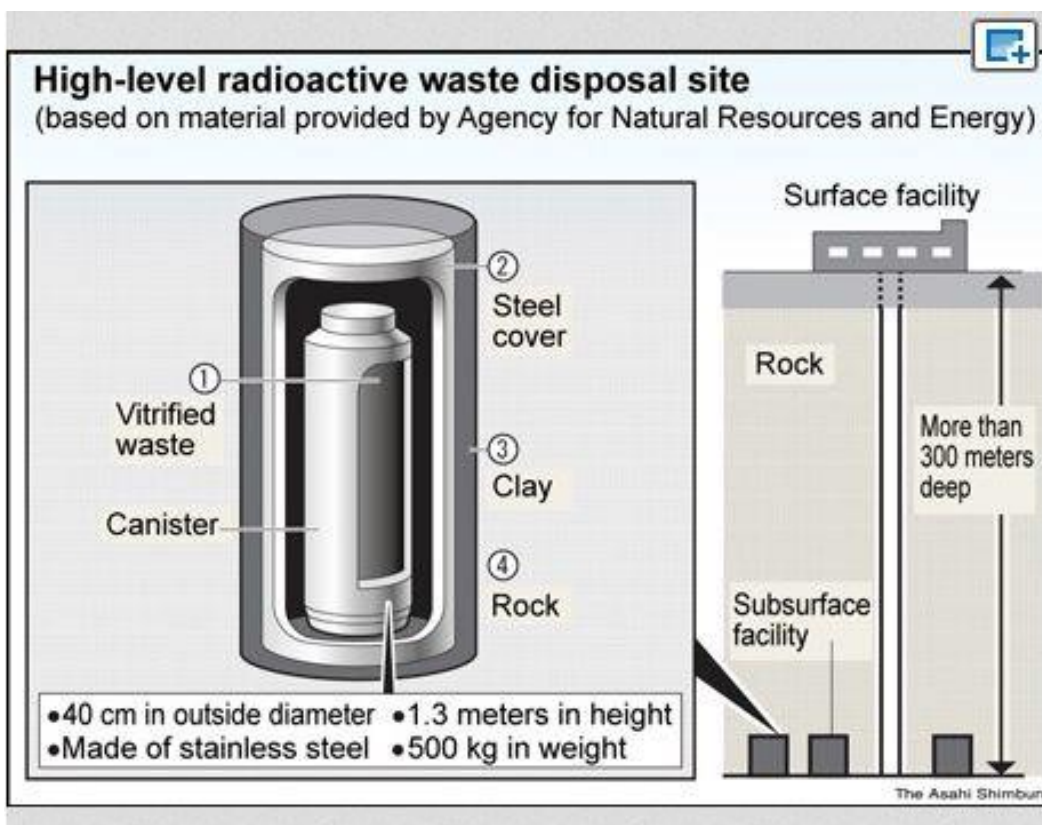
The power companies that are considering reactor restarts as their foremost priority are quite reluctant to rebuild or improve their old, inefficient thermal power stations. They are also anything but ready to commit to switching to renewable energy sources. The Abe administration is supposed to be trying everything to secure alternative energy sources. But if it gives its tacit approval to what the utilities are doing, it will simply end up betraying the trust of the public.

The Fukushima disaster happened as a result of people in positions of responsibility refusing to face the problems inherent in nuclear power generation.

We just cannot allow them to keep doing that any longer.

### Science panel recommends delaying burying radioactive waste

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201209120009>



Citing the country's geologically unstable archipelago as a threat, the Science Council of Japan is recommending that the government build temporary storage facilities to hold more than 27,000 cylinders of high-level radioactive waste.

The council on Sept. 11 completed a report that calls for regulating the total amount of radioactive waste from nuclear power plants and storing it temporarily.

The report pointed out the high seismic and volcanic activity beneath the Japanese archipelago threatens a burial site for the waste.

"There is a limit to what we can do with currently available scientific knowledge and technological capacities" to search out geological formations that will remain stable over tens of milleniums, the council said.

The report recommended building facilities for the temporary storage of nuclear waste, from which it can be removed anytime, although it could be stored there for anywhere from decades to centuries.

Scientists should use that time to study the stability of geological formations and develop techniques to more quickly reduce radioactivity in nuclear waste, the recommendation said.

The SCJ is a government-affiliated body of academics that makes policy recommendations. It submitted its report, which calls for a fundamental review of the current final disposal policy based on eventual burial in the ground, to the government's Japan Atomic Energy Commission.

The government's current policy specifies that all spent fuel from nuclear plants should be reprocessed. It says the high-level radioactive waste, generated during the reprocessing, should eventually be buried at depths of 300 meters or more below ground in Japan. This reprocessing policy is currently under government review, which started after the accident at the Fukushima No. 1 nuclear power plant in March last year.

The Nuclear Waste Management Organization of Japan in 2002 started accepting candidacies by local governments willing to host a final disposal site. Only one municipality came forward in 2007, and it later retracted its offer.

To break the impasse, the AEC in September 2010 asked the SCJ to draw up a recommendation on the matter. The SCJ has since held deliberations in a study committee.

The SCJ's report also pointed out a lack of urgency at controlling the total amount of nuclear waste. It said the fear of an increase without limits lies at the bottom of public distrust of the government's nuclear power policy.

The recommendation said it is essential to set an upper limit on the total amount of radioactive waste and to implement controls to prevent it from increasing without limits. It said the current effort to decide on

the ratio of electricity to be generated by nuclear energy in the future without discussing a cap on the total waste generated was tantamount to simply postponing the issue and called on the government to seek public input.

The government's current nuclear waste disposal policy assumes that the waste can be disposed of safely using established techniques. The latest SCJ recommendation, which said currently available technologies involve uncertainty and risks, is a fundamental challenge to that assumption and is a call for policy change.

The SCJ recommendation will be discussed by an AEC panel to revise the government's Framework for Nuclear Energy Policy by year's end. If any part of the SCJ recommendation ends up in the revised framework, it will be reflected in the government's policy.

In the past, the AEC was responsible for determining the policy. Following the crisis at the Fukushima No. 1 nuclear plant, however, it was decided that the government's Energy and Environment Council will first draw up the proposal, and that the framework will be drafted only on that basis.

The council will decide whether to incorporate the SCJ proposal in the Framework for Nuclear Energy Policy.

The SCJ recommendation pointed out that expert opinion remains divided over the assumption that it is possible to isolate radioactive-contaminated waste with certainty even in the event of an unimagined contingency or disaster. It will be difficult to select a final disposal site without forming a consensus during careful discussions by experts and sharing it through a broad public discussion.

Some countries overseas have decided on putting nuclear waste in temporary storage facilities instead of burying it immediately in a final disposal site. Canada, for example, in 2007 decided to store radioactive waste temporarily for about 60 years prior to its final disposal.

France plans to design a nuclear waste disposal facility so that waste remains recoverable for at least 100 years.

Japan possesses more than 2,650 cylinders containing vitrified high-level radioactive materials. It also has the equivalent of 24,700 cylinders of spent fuel at nuclear power plants. The amount of waste is expected to grow if the government decides to move toward zero nuclear power generation and to bury spent fuel directly in the ground without reprocessing it.

Temporary storage means passing the resolution of nuclear waste disposal to future generations. Even discussions on a storage site have yet to start. It is vital for policymakers on nuclear issues to offer solutions to the waste disposal problem.

(Jin Nishikawa contributed to this article.)

## Water and human arrogance

### **Yoroku: Fukushima's harsh lessons learned far too late**

<http://mainichi.jp/english/english/perspectives/news/20140312p2a00m0na008000c.html>

The Japanese term "tetto" refers to an iron tub and was used as a metaphor for a solid substance in the old days. "Tetto no jin," or literally brigades of iron tubs, refers to a watertight lineup, while "Tetto mizu o morasazu" (An iron tub doesn't leak water) is a saying about being thoroughly prepared.

As the proverb goes, the tanks holding radioactively contaminated water at the stricken Fukushima No. 1 Nuclear Power Plant shouldn't have spilled a drop. However, some 100 metric tons of highly radioactive water leaked from the tanks last month. The number of such storage tanks holding contaminated water has reportedly topped 1,000 at the plant. Even three years after the Great East Japan Earthquake, tsunami and the onset of the nuclear disaster, our struggle with water still continues.

As ancient Chinese philosopher Laozi once said, in the world there is nothing more submissive and weak than water, yet for attacking that which is hard and strong nothing can surpass it. The difficulties of handling the contaminated water, which slipped through the narrowest loophole in human preparedness that was believed rock-solid, reminds us once again of the absurd arrogance of us humans, who are responsible for the ongoing nuclear catastrophe.

The decommissioning of reactors at the Fukushima plant is estimated to take three to four decades, and workers there just started pulling out fuel rods from the spent nuclear fuel pool at the No. 4 reactor last fall. The biggest challenge they face for the time being is, however, to contain the influx of underground water that keeps adding to the number of tanks holding contaminated water. Construction of impermeable walls using frozen soil is planned in order to stem such groundwater inflow.

The government is planning to start pulling out nuclear fuel from the No. 1 through No. 3 reactors in fiscal 2020, the crucial point in the decommissioning process. Development of new technologies such as unmanned robots capable of probing nuclear reactors will be indispensable, while radiation exposure

management for workers at the plant is strictly called for. The decommissioning will be an unprecedented technological and social challenge for humankind.

We will be called upon to carefully keep an eye on all possible risks and take flexible responses. Indeed, it was us humans who had to be like water in attacking that which is hard and strong, in drawing up safety measures for nuclear plants. There is a long way to go before decommissioning work is completed, for which we must make the most of the lessons we learned way too late. ("Yoroku," a front-page column in the Mainichi Shimbun)

## Jaczkowski: No way to completely prevent nuclear accidents

### US nuclear expert calls for strict safety measures

[http://www3.nhk.or.jp/nhkworld/english/news/20140312\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20140312_05.html)

A US nuclear expert has stressed the need to prepare for accidents at nuclear power plants, saying there is no way to completely prevent them.

A former chairman of the US Nuclear Regulatory Commission, Gregory Jaczkowski, spoke to NHK in Tokyo on Tuesday, the 3rd anniversary of the accident at the Fukushima Daiichi nuclear plant.

Jaczkowski noted that the plant is still releasing radioactive materials through contaminated water.

He said someone who is considerate of people's health and the environment should lead the workers at the plant. He also called for thorough explanations to be given to the people who had to leave their homes.

Jaczkowski said nuclear plants in Japan are less likely to have accidents thanks to the new safety measures that were introduced after the Fukushima disaster.

But he urged plant operators to prepare ways to minimize the impact of a possible accident, saying it is impossible to completely prevent one from happening.

He added that restarting nuclear power plants won't be justified unless the public supports the move.

Japan's 48 commercial reactors are all off-line. Utilities have applied for government safety screening for more than one-third of them to resume their operations.

March 13, 2014

## Kagoshima Governor calls for safety

### Governor calls for plant safety guarantee

[http://www3.nhk.or.jp/nhkworld/english/news/20140313\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20140313_31.html)

Kagoshima Prefecture Governor Yuichiro Ito says he will closely monitor the safety screening procedure for the 2 reactors at the Sendai nuclear plant.

Ito was responding to the Nuclear Regulation Authority's decision earlier on Thursday to prioritize the plant in the screening process, a step needed to reactivate its reactors.

He said the key premise for the resumption of operation is ensuring safety. He said the state must guarantee the plant's safety and that a full explanation should be given to residents in open forums to seek their understanding.

The Sendai plant is located on the East China Sea coast, and has 2 pressurized light-water reactors. They started commercial operation in 1984 and 1985.

The plant's operator, Kyushu Electric Power Company, stepped up safety measures following the Fukushima nuclear crisis of 2011.

The utility has deployed 2 emergency power-supply vehicles in case the plant should lose all power sources due to a tsunami. It also acquired 2 large-capacity mobile power generators for use in cooling reactors.

The prefecture is drawing up an anti-disaster plan covering areas within a 30-kilometer radius of the plant. It estimates 220,000 people would have to be evacuated in case of an accident.

## What about evacuation plans?

### Nuclear accident evacuation plans unfinished

[http://www3.nhk.or.jp/nhkworld/english/news/20140313\\_35.html](http://www3.nhk.or.jp/nhkworld/english/news/20140313_35.html)



An NHK survey shows **one-third of local governments near nuclear power plants have yet to complete evacuation plans in the event of an accident.**

NHK asked 100 local governments located within a 30-kilometer radius of 10 idling power plants. Plant operators are asking for government safety screening as the first step toward restarting them.

61 percent said they have worked out plans for evacuation but 35 percent said they are not yet complete. Some said they are struggling to secure evacuation sites.

Others said they are still negotiating plans with neighboring governments to evacuate across prefectural borders.

**Asked whether hospitals and social welfare facilities in their areas already have evacuation plans in place, only 7 percent said yes, and 44 percent said no.**

NHK also asked if the governments will approve the restarting of local nuclear power plants when the central government confirms their safety. 32 percent said yes; 45 percent said they do not know.

March 14, 2014

## **M6.2 quake but nuke plant OK**

### **M6.2 quake hits western Japan, injures 14, atomic plant said safe**

<http://mainichi.jp/english/english/newsselect/news/20140314p2g00m0dm001000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 6.2 struck a swath of western Japan early Friday morning, registering a strong intensity in parts of Shikoku, Honshu and Kyushu islands but no tsunami was observed, the Japan Meteorological Agency said.

A total of 14 people were hurt in Okayama, Hiroshima, Yamaguchi, Kochi and Oita prefectures after the 2:07 a.m. quake, according to local firefighters. All are believed to have sustained minor injuries.

Shikoku Electric Power Co. said no abnormality was detected in measuring instrument data at its Ikata nuclear power plant in Ikata, Ehime Prefecture, where lower-5 was registered on the Japanese seismic scale of 7.

The earthquake originated around 78 kilometers underground in Iyonada inland sea sandwiched by three of Japan's largest islands -- Honshu, Shikoku and Kyushu.

The strongest intensity of upper-5 was registered in Seiyo, Ehime Prefecture. Lower-5 was registered in Kure, Hiroshima Prefecture, Sukumo, Kochi Prefecture, and Usuki, Oita Prefecture.

The agency cautioned that quakes of around intensity 4 could occur in the coming week.

Shikoku Electric said the Ikata plant's No. 1 to 3 reactors detected 45 to 56 gals of ground acceleration in the quake. The plant is designed to withstand up to 570 gals.

Residents near the plant voiced concern after what some described as around 15 seconds of intense shaking. In Ikata town, a 23-year-old convenience store employee said, "I thought the nuclear power plant was alright because it was at worst intensity 5 but if it had been greater...."

In Seiyo city, where the strongest intensity of upper-5 was registered, a 19-year-old convenience store clerk said, "Soft drink bottles fell on the floor. I held onto the counter to support myself but it was really terrifying."

Chugoku Electric Power Co. said its Shimane nuclear power plant in Matsue, Shimane Prefecture, also reported no abnormality.

In Okayama city, a woman in her 70s and two other people sustained minor injuries, firefighters said. In Tamano, Okayama Prefecture, a woman dropped her one-month-old infant while seeking refuge. The baby is believed to have suffered minor injuries.

In Hiroshima Prefecture, six people are reported to have suffered minor injuries.

Around 8,000 homes in Hiroshima and Higashihiroshima cities in the prefecture temporarily lost power, Chugoku Electric Power said.

Other injuries include two people in their 70s in Hofu, Yamaguchi Prefecture, who fell from their bed, and a man in his 30s who sprained his ankle while seeking refuge. A woman in her 50s suffered minor injuries in Shimanto, Kochi Prefecture.

West Japan Railway Co. (JR West) said its shinkansen bullet train between Okayama and Shin-Yamaguchi will operate at slower speed from the start of service on Friday.

Traffic was blocked to assess the impact of the quake in sections of Sanyo Expressway in Hiroshima and Yamaguchi prefectures and Hiroshima Expressway in Hiroshima city, road operator Nexco-West Co. said.

## David Lochbaum: The Story of a Nuclear Disaster

**'Fukushima: The Story of a Nuclear Disaster' by David Lochbaum, Edwin Lyman, Susan Q. Stranahan, and the Union of Concerned Scientists.**

**By Justin Moyer, Published: March 14, 2014**

### **The Story of a Nuclear Disaster**

By David Lochbaum, Edwin Lyman, Susan Q. Stranahan, and the Union of Concerned Scientists. New Press. 309 pp. \$27.95

In 1982, less than four years after Three Mile Island's partial meltdown, members of the Nuclear Regulatory Commission (NRC) resisted the need to plan for worst-case scenarios at nuclear plants. The chances of a radiation leak causing widespread death, one member said, were "less than the possibility of a jumbo jet crashing into a football stadium during the Superbowl."

Unfortunately, at Japan's Fukushima Daiichi plant in 2011, that jumbo jet came down. In "Fukushima," two scientists, a Pulitzer Prize-winning journalist and the Union of Concerned Scientists, an environmental group, recount the unlikely story of an earthquake that unleashed a tsunami that caused three nuclear meltdowns.

(New Press) - 'Fukushima: The Story of a Nuclear Disaster;' by David Lochbaum, Edwin Lyman, Susan Q. Stranahan, and the Union of Concerned Scientists. Bas du formulaire

"Fukushima Daiichi unmasked the weaknesses of nuclear power plant design and the long-standing flaws in operations and regulatory oversight," the authors write. "It is the saga of a technology promoted through the careful nurturing of a myth: the myth of safety. Nuclear power is an energy choice that gambles with disaster."

"Fukushima" reviews the unpredictable, unprecedented events that unfolded in Japan on March 11 three years ago: a "station blackout" at a plant that needed electricity to prevent disaster; heroic workers MacGyvering solutions to never-imagined problems; and the bumbling of the Tokyo Electric Power Company (TEPCO), the Japanese government and the NRC after the worst nuclear accident since Chernobyl. Though the book's language is often technical — readers should be prepared to grapple with hydrogen explosions, probabilistic risk assessments and the need to install filters in the hardened containment vents of boiling water reactors — its message is unabashedly activist.

"TEPCO and government regulators were merely the Japanese affiliate of a global nuclear establishment of power companies, vendors, regulators, and supporters, all of whom share the complacent attitude that made an accident like Fukushima possible," they write. During accidents at other plants in the United States, "the story line would differ, but the outcome would be much the same — wrecked reactors, off-site radioactive contamination, social disruption, and massive economic cost."

What's most terrifying is that the outcome is still unknown. "It is difficult," a man with a 4-year-old daughter living not far from the Fukushima exclusion zone told this reviewer in 2013. "We do not know the effects of radiation on small children."

While less technical, more personal books about Fukushima exist — among them, William T. Vollmann's superb "Into the Forbidden Zone: A Trip Through Hell and High Water in Post-Earthquake Japan" — "Fukushima" is a great guide to yesterday's nuclear disaster that could happen tomorrow.

— Justin Moyer

March 15, 2014

## What is a "viable" evacuation plan?

### Niigata governor: Nuclear evacuation plans impossible without legal changes

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201403150046>

By TOSHIHIRO OKUYAMA/ Senior Staff Writer

Niigata Governor Hirohiko Izumida said it is impossible to draw up effective evacuation plans for a nuclear accident unless the central government overhauls related laws and regulations.

Izumida made the remarks in Tokyo on March 12, when he met with Gregory Jaczko, who was chairman of the U.S. Nuclear Regulatory Commission when the 2011 Great East Japan Earthquake and tsunami hit the northeastern coast, leading to the Fukushima nuclear disaster.

The nuclear crisis prompted the central government to call on municipalities near nuclear power facilities to devise evacuation plans in the event of a serious accident.

"Municipalities cannot come up with viable evacuation plans designed for a nuclear accident or compound disaster that involves an earthquake unless the government overhauls its institutional setup," Izumida said.

The governor said, for example, that strict radiation dose limits on workers would make it difficult to instruct bus drivers to enter disaster zones and transport residents to safe areas.

**"Municipalities cannot make evacuation plans without an agreement on either relaxing the exposure limits on members of the public or creating rescue units,"** he said.

Niigata Prefecture is home to the Kashiwazaki-Kariwa nuclear power plant, which Tokyo Electric Power Co. is seeking to put back online.

The governor said he does not want to discuss the possible restart of reactors at the plant until the completion of inspections and reviews of the disaster at TEPCO's Fukushima No. 1 nuclear plant.

But he suggested that “the creation of a viable evacuation plan” will become a new hurdle to restarting reactors at the Kashiwazaki-Kariwa nuclear plant.

Jaczko asked Izumida if municipalities in Niigata Prefecture had compiled evacuation plans for residents living near the nuclear plant.

The governor replied, “Some do have plans, but they will not function in practice.”

Jaczko said that without a sufficient evacuation plan in the United States, the Nuclear Regulatory Commission would order a halt to nearby nuclear power plant operations.

March 16, 2014

## Global security talks

### **Japan eyes confab with U.S., China, S. Korea to curb nuclear terrorism**

<http://mainichi.jp/english/english/newsselect/news/20140316p2a00m0na007000c.html>

TOKYO (Kyodo) -- Japan is making arrangements to hold its first working-level talks with the United States, China and South Korea in July to curb nuclear terrorism, a growing major threat to global security, a Japanese government source said Saturday.

Cooperation among the four nations is aimed at countering North Korea's nuclear ambitions and missile weapons development, the source said.

Japan hopes to use the multilateral dialogue, expected to be held in Washington, to pave the way for mending its strained relations with China and South Korea through "an issue of common concern," according to the source.

Japan's ties with China and South Korea are chilly over territorial disputes and differences in perception on wartime history.

Prime Minister Shinzo Abe, when he attends the Nuclear Security Summit scheduled for March 24 to 25 in The Hague, the Netherlands, is set to announce during the summit Japan's policy of increasing its

commitment to addressing nuclear proliferation and terrorism in cooperation with other countries, bearing in mind frameworks such as the four-nation dialogue.

Abe is expected to say Japan will seek the cooperation of the International Atomic Energy Agency and participants in the summit, including China and South Korea, on measures to prevent the spread of nuclear terrorism such as terrorist attacks on nuclear power plants, the source said.

"It's the perfect opportunity for Japan, being the only country that has suffered wartime atomic bombing, to make an appeal for its efforts to promote nuclear nonproliferation," an aide to the premier said.

According to the source, the government will send to the working-level meeting staff from the Integrated Support Center for Nuclear Nonproliferation and Nuclear Security, which is based in Tokaimura, Ibaraki Prefecture.

The center is prodding related organizations in China and South Korea to send their own representatives, while officials from the U.S. Department of Energy and the National Nuclear Security Administration are expected to attend the multilateral talks, the source said.

Representatives from the four countries plan to discuss challenges in preventing nuclear terrorist attacks globally and share the scheme in which Japan and the United States, in particular, deal with nuclear security concerns, the source said.

In the field of nuclear nonproliferation and nuclear security, Japan has the potential to contribute in the field of nuclear forensics, which analyzes the composition of nuclear materials, in cooperation with the United States.

The Japanese government set up the center in December 2010 under the Japan Atomic Energy Agency to boost nuclear nonproliferation and nuclear security.

The center's activities include safeguarding nuclear materials such as plutonium and developing technology to track down the place of origin of nuclear materials.

March 17, 2014

## Onagawa's operator & safety culture

### **Safety Culture Protected Japan's Onagawa Nuclear Station, Researchers Say**

<http://www.nucnet.org/all-the-news/2014/03/17/safety-culture-protected-japan-s-onagawa-nuclear-station-researchers-say>

Differences in safety culture between Tokyo Electric Power Company (Tepco) and Tohoku Electric Power Company led to the meltdowns at Tepco's Fukushima-Daiichi nuclear power station in the aftermath of the March 2011 earthquake and tsunami, while Tohoku's Onagawa nuclear station was "remarkably undamaged," researchers have said.

In a research paper on human factors in work design, Dr Airi Rye and Dr Najmedin Meshkati of the University of Southern California conclude that it was ultimately Tepco's "mindset" which led to the meltdowns at Fukushima-Daiichi.

While three nuclear power stations in the north of Japan – Fukushima-Daiichi, Fukushima-Daini and Onagawa – shared similar disaster conditions, nuclear reactor types and an identical regulatory regime, their fates were very different, the paper says.

Despite being closer to the earthquake's epicentre than Fukushima-Daiichi, Onagawa "shut down safely" was "remarkably undamaged", the paper says. Onagawa is about 120 km north of Fukushima-Daiichi.

One of the main factors was that Onagawa nuclear station was built 14.7 metres above sea level because initial estimates of an average tsunami height of three metres in the area.

According to the paper, Fukushima-Daiichi was built at an elevation of 10 metres by reducing ground which initially stood at 35 metres above sea level to facilitate the transportation of equipment to the construction site and the pumping of seawater for the reactor's cooling systems.

Also, Tohoku Electric's vice-president from 1960 to 1975, Yanosuke Hirai, was strict about the promotion of safety protocols, which led to the establishment of a strong safety culture. "A general prioritisation for nuclear reactor safety formed within the company," the researchers say.

As a result of the more established safety culture, Tohoku Electric also had a different approach to emergency response from Tepco – one that was more organised, collaborative and controlled, the researchers say.

According to the paper, all workers at Onagawa were familiar with the steps that must be taken when either a tsunami warning was issued, or when a tsunami was approaching. Periodic training sessions to remind workers of extreme situations also allowed employees to "stay poised" during a disaster.

Such initiatives could not be found in Tepco culture. There also existed within Tepco a mindset that the company's domination in the market was an indication of flawlessness, the paper says.

“If safety and disaster response was properly recognised, addressed, and implemented like it was in Tohoku Electric Power Company’s culture, perhaps the Fukushima-Daiichi meltdowns could have been prevented,” the paper says.

“With most other factors being similar, it was Tohoku Electric’s overall organisational practices and safety culture that saved the day for Onagawa”.

The research paper is online:

[www-bcf.usc.edu/~meshkati/Onagawa%20NPS-%20Final%2003-10-13.pdf](http://www-bcf.usc.edu/~meshkati/Onagawa%20NPS-%20Final%2003-10-13.pdf)

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## Three years later: Toshio Nishi

### Fukushima: Three Years Later

<http://akiomatsumura.com/2014/03/fukushima-three-years-later.html>

Toshio Nishi

*As Japan teeters on the brink of nuclear disaster, has it learned any lessons at all?*

When the worst earthquake in Japan’s history pulverized its northern coastline in 2011, walls of black saltwater from the deep Pacific surged over four of six nuclear reactors located on the Fukushima coast. Though they were supposedly designed to withstand the worst quake imaginable along the Ring of Fire, the reactors quickly succumbed to the natural disaster, breaking like toys. To be precise, three reactors had outright meltdowns or, more correctly, melt-throughs. One, Reactor No. 4, broke beyond repair and posed further catastrophe. Two others simply stopped dead. Within hours, one of the melt-throughs exploded, spewing lethal radioactive waste into the air, soil, underground water veins and, steadily, into the Pacific. Some eighteen thousand and five hundred souls died that cold March day. Many of the dead remain missing even now.

Three years on, a dark threat of further tragedy yet hangs over Fukushima. On the fourth floor of Reactor No. 4—the reactor that exploded on the first day of the earthquake—1,331 spent fuel rods remain stored in cooling water in a large steel tank. The tank, jolted by the quake, tilts to about 30 degrees. The six reactors at Fukushima have produced 14,225 spent fuel rods, all of which are stored in the same way at the reactor sites. To underscore the lethal potential of this situation, a single exposed spent fuel rod, 4 meters-long and 1 centimeter in diameter, will kill a man in four seconds.



Why were the spent rods—so many of them—stored on top of the reactors? Who at General Electric was responsible for that design innovation? Was it conceived for expediency, to save money, or from an attitude of utter hubris against the force of nature?

Nobody in charge of the meltdowns wants to talk about the tank that is brimming with an unfathomable nightmare. Miraculously, the tank has not yet toppled. But the next big earthquake, or the effect of metal fatigue, might end life for everything around. If it were to topple, the greater Tokyo metropolitan area, with adjacent large cities like Yokohama and a total population of 33 million, could become a vast wasteland with no willing inhabitants. An exodus of panicked people would ensue from an island archipelago that is smaller than the State of California.

Three years have passed since the comprehensive meltdown, which continues to contaminate everything it touches. During all that time, invisible odorless particles with unspeakable consequences have been descending over the region every time rain or snow falls. On February 8, 2014, Tokyo experienced its heaviest snowfall in forty-five years.

Residents around Fukushima long ago deserted their houses, farms and factories, leaving behind pet dogs and cats, and domestic animals such as horses, cows, pigs, and chickens. They are feral now, freely roaming the no-man's land, and multiplying. Tenacious bamboo forests have claimed tiers of fertile rice paddies and graceful orchards. The senior citizens who escaped to the mountains continue to die of diseases and stresses related to their dislocation and the medical effects of the meltdown.

The newly dead number 14,000, our government says. In all, 160,000 residents fled the region and are not allowed to return.

The horrific scene in Fukushima, to which no end can be envisioned, rarely shows up in the nation's mass media. Long after the disaster, there persisted an eerie pall of deliberate denial regarding anything related to Fukushima. The Japanese took to reading *The New York Times*, *The Wall Street Journal* or *The Guardian* to assess the magnitude of their disaster. How many Japanese can read such high-level English? And why should they be required to, when Japan has one of the most advanced mass media systems in the world? We were forced to wonder: does our media collaborate too comfortably with Tokyo Electric and the Abe government, which promotes nuclear power, and hence fail to publish any alarming news about the catastrophe? The answer to this rhetorical question would seem self-evident.

Only relatively recently, as if the nation's pent-up emotional stress could no longer be suppressed, a fitful spurt of appalling news started to be broadcast in Japan itself—revelations like the startling confession by the Tokyo Electric Company that the meltdowns have been leaking toxic water from the first day of the disaster. This was followed by an explanation as to why the company would release such damning information so sluggishly: the toxin had been buried deep in the hidden lochs of water around the reactors. Is the company truly so incompetent that it wasn't immediately aware of this fact, or just

disturbingly skillful at hiding the obvious? Just as a bamboo sieve fails to retain water, control over the natural flow of unwelcome news has proved ineffective.

### **Toxic Water Disposal**

Neither the Japanese government nor Tokyo Electric knows how to dispose of the radioactive water, which presently amounts to about 500,000 tons. That is 400 tons per day, every day. This water was used to cool the meltdowns. Worse, underground water veins that originate from the nearby mountain range, amounting to about 1,000 tons a day, run beneath the meltdown reactors and must be pumped and stored before the water runs amok in rivers and the Pacific.

Some of the toxic water is stored in an underground pool, which is overflowing, and the rest is in large aboveground steel tanks at the Fukushima site. The seams of these special tanks are not welded but bolted. Why are they not welded? In August, 2013 the tank maker explained that he had to make them “quickly and cheaply, because Tokyo Electric told me to hurry up, and to not spend too much money.”

Some tanks have started leaking due to the high temperature of the water itself, which melts the seams and, according to Tokyo Electric, because of the unusually hot summer weather last year. As the cooling of the three complete meltdowns requires a constant flow of vast amounts of water, more tanks are needed. Fukushima urgently requires additional storage space or, better yet, larger tanks for another 450,000 tons in the next two years. The meltdowns need to be kept cool for the next 20 years, at least. Since enough storage space for the tanks is not available around the Fukushima reactors, will the government exercise eminent domain to take private land on behalf of Tokyo Electric? If the government buys or takes private property, the Fukushima residents may revolt.

Tokyo Electric has another, more primitive problem: a horde of hungry rats. Last year, in 2013, electricity vital for pumping water to cool the meltdown suddenly stopped, resulting in panic within Fukushima. A frantic search for the cause found a shoddy wooden electric circuit box containing a tangle of wires. The box had been exigently nailed on a wooden pole to reroute electricity to the all-important cooling pumps. A rat had gnawed the coating of the wires and was electrocuted. The rat became big news in March of 2013. Then, a month later, in a different wooden box, another suicidal rat bit into wire coating and stopped the flow of vital electricity once again.

The situation with the toxic water is not yet hopeless, because the Nuclear Regulation Authority came up with a solution: “Not every drop of the contaminated water is imminently dangerous to our health, so the less radioactive water should and must be dumped offshore, into the Pacific Ocean.” At the same time, intentionally or not, the toxic water has been leaking into the Pacific from the first day of the meltdown, a fact that Tokyo Electric denied until recently.

As serious as this situation is, it is not as frightening as a discovery at one testing well near the Reactor 3 meltdown. On July 11, 2013, Tokyo Electric measured at the bottom of the 30-meter well a shocking concentration of cesium: one million times more lethal than the Nuclear Regulation Authority accepts as safe.

The radioactive wastewater lives for several hundred years. Plutonium, abundantly produced by the reactors, remains deadly for 25,000 years. Even decommissioning the Fukushima meltdowns would take more than 50 years and more than 30 billion US dollars—an optimistic estimate. But the Japanese people, kept misinformed about the true potential danger of Fukushima, have developed a case of collective amnesia, a coping mechanism to help them process their profound sense of resignation about a dark national future.

That amnesia was momentarily shattered on September 27, 2013, when the president of Tokyo Electric blurted out in front of the Diet (Parliament) committee investigating Fukushima that, “We do not know where the source of the contaminant is located and we have not yet been successful at containing it.” His open admission made headlines.

### **No One Is Dead**

Prominent politicians, never missing an occasion to chime in, lecture us Japanese citizens about our overwrought anxiety. For instance, Senator Sanae Takaichi, Prime Minister Shinzo Abe’s close colleague, smilingly declared in a public speech, “No one has yet died of radioactive disease at Fukushima.” To which smug observation one can only respond: no, not yet. She meant that nobody in Fukushima died instantly from direct radiation, as seen in the explosions over Hiroshima and Nagasaki. Do a few of us have to die within a year or two to prove that relentless radiation is lethal? Her hidden agenda was to promote the restarting of the nation’s remaining fifty reactors, which have been under “thorough inspection” by the government. Her too casual assessment of the risks did not fail to unnerve a populace haunted by radioactive ghosts, and her tone-deafness threatened her political career. Advised by her superiors, including the Prime Minister, she apologized and said she would retract all of her previous statements regarding nuclear policies.

Prime Minister Abe, unfazed by his subordinate’s blunder, went abroad to Istanbul, Turkey, to sell Japan’s nuclear reactors. He is well aware that Turkey is one of the world’s countries most prone to disastrous earthquakes. To make his case he said, “We have learned a precious lesson from Fukushima. Because of it, with confidence, we would like to export Japan’s advanced nuclear technology to the people of Turkey, and if anything goes wrong, Japan will be responsible for it and take care of it.”

We taxpayers, however, worry in polite silence and long to hear from our favorite premier all about the precious lessons we apparently failed to deduce from our media and leadership. It could not be that he was mendacious just to sell expensive reactor technology, could it? After Turkey, he traveled to Southeast Asian countries, including Vietnam, Thailand, India, and Indonesia to sell Japan’s nuclear reactors.

Furthermore, our ever-confident prime minister declared before the Olympics Site Selection Committee, “Japan has successfully put the Fukushima meltdowns under control, so please choose Tokyo for the 2020 Summer Olympics.” He was persuasive, and Tokyo won the honor. Meanwhile, the reality at Fukushima stares us down more menacingly than ever, because we have no space left in which to maneuver.

## **Nasty Strontium**

The Japanese are aware that they are walking “On The Cesium Road.” But that’s only part of the story. Tokyo Electric Company has just discovered concentrated amounts of strontium in the water that overflowed from the tanks. This discovery was made on September 5, 2013, two years and six months after the earthquake. Why was there an overflow? “Too much rainfall,” the Company explained. Blaming nature for spillage from the steel tanks failed to convince the public but succeeded in embarrassing a government that still promotes nuclear energy.

How much strontium did the Company discover? Thirty times more than the Nuclear Regulation Authority says is “safe.” But this Authority is a tolerant bunch when it comes to radioactive health hazards, and simply sets the “dangerous level” very high. By international standards, the Japanese in the region have been exposed to a strontium level several hundred times higher than that considered safe.

In fact, every time and in every place that the Company digs a testing well to measure cesium and strontium, it discovers far more concentration than it hoped to find. Now, the Company and the government have come up with a very expensive technological innovation: freeze the most contaminated zone surrounding the meltdowns within a one-mile radius. The frozen circle, 25-feet deep, is expected to stop the so-far unstoppable flood of wastewater into the Pacific Ocean. They would like to complete it in 2015 and have already started constructing the ice wall to transform the region into a little Siberian tundra. We joke about it, but it is no laughing matter; the physics of water may well not honor such a defensive wall. And who is paying for these massive and unrelenting blunders? There has been absolutely no talk of responsibility or accountability.

Strontium, if digested or inhaled, accumulates within our bodies, mainly in our bones and teeth. The eventual consequences will be especially terrible for young boys and girls, babies and pregnant women. Cesium and strontium show up in mother’s milk. Cesium is reported to weaken heart muscles and may cause heart attacks. Fukushima already reports 1.6 times more heart attacks than before the accidents.

No effective cleanup is in sight. The only evidence we see is that Tokyo Electric has hired many unemployed men above 40 years of age, to wash roofs and gardens of contaminated towns and villages, and scrape off the topsoil of school yards, including baseball and soccer fields, as if exfoliating the contaminated skin of the earth. Mountains and forests remain unwashed. These men who dare to work within the lethal circle get paid well, an equivalent of \$300 US dollars for the maximum three-hour workday allowed by the nation’s law. They work for three months only.

Why an age limit? Young unemployed men will have a longer future to be productive and possibly have children. Are the older men, overexposed to high radiation, exhibiting signs of DNA mutation? Recently the age limit has been dropped, perhaps because the pool of workers above 40 years old has dried up. Either way, a steady march of manual laborers with water hoses and scrapers will not conquer a deadly high tech monster. Those men who worked close to the meltdowns number around 25,000. The government and Tokyo Electric have a standing offer for them to take free leukemia and other cancer tests, and avail themselves of free operations and other medical attention as the need arises.

As if the Japanese people need an additional science lesson, the Vice Minister of the Education and Science Ministry, Yoshitaka Sakurada, said during a reception party for himself on October 6, 2013: “Nobody can live in Fukushima ever again, so it is perfectly appropriate to dump all the unburnable radioactive trash and ashes of the burnable right there.” The 2013 White Paper on the Environment, prepared by the Abe Cabinet, has deleted the phrase, “the most urgent and critical environmental issue is radioactive contamination,” which had been displayed conspicuously in The 2012 White Paper on the Environment.

For the Japanese who worry about radioactivity, Fukushima has proved itself a chilling education about the incompetence, irresponsibility and arrogance of the people in charge of repairing and cleaning it up. Worse, those in charge have been wasting vast sums of tax money, prolonging the suffering of those directly affected by the meltdown, and indirectly tarnishing Japan’s reputation worldwide. The OECD (Organization for Economic Cooperation and Development, Paris) announced on October 8, 2013, that among its 24 member nations of advanced economies, Japan is the nation with the “smartest” workers. Finland and Germany are second and third. One wonders, how would the OECD compare the quality of leadership by presidents and premiers among its members?

While the Japanese people search for the “precious lesson of Fukushima” that only the Prime Minister and his close circle appear to have learned, the Pacific Rim nations should worry about the potential catastrophe of the spent fuel rods, teetering on the edge of the Pacific Far East.

*Toshio Nishi is a research fellow at the Hoover Institution. This article was originally published in Defining Ideas, a Hoover Institution journal.*

March 20, 2014

## Most governments review quake projections

### 90% of local gov'ts reviewing quake damage projection: Mainichi survey

<http://mainichi.jp/english/english/newsselect/news/20140320p2a00m0na008000c.html>

Some 90 percent of prefectural governments and major cities across Japan are reviewing or newly devising their quake damage projections in the wake of the 2011 Great East Japan Earthquake, a Mainichi Shimbun survey has shown.

The survey was conducted between February and March to coincide with the third anniversary of the March 11, 2011 Great East Japan Earthquake. All 47 prefectures responded, as did 19 of the 20 major cities -- excepting only the city of Osaka.

The questionnaire found that some 90 percent of local governments are reviewing or newly devising the quake size and damage projections based upon which regional anti-disaster plans are formulated. In the meantime, all 66 local governments that responded to the survey have already begun reviewing their regional disaster prevention plans -- an indication that the 2011 quake and tsunami disasters and the ensuing Fukushima No. 1 Nuclear Power Plant crisis have significantly changed regional anti-disaster planning.

In April 2012, during the first review of its kind in six years, the Tokyo Metropolitan Government raised the maximum number of anticipated fatalities that would result from a magnitude-7.3 quake centering on northern Tokyo Bay from 4,700 to 9,700.

Nearly half of the local governments cited "formulation and enhancement of anti-nuclear disaster measures" and "reviews and enhancement of anti-tsunami measures" as major revisions to be made in their regional disaster prevention planning. All of the 50 local governments that had not drawn up their business continuity plans prior to the 2011 calamity have either already devised them, or are now planning to do so in the wake of the triple disasters.

The 2011 catastrophe brought tsunami and other damage to extensive areas, prompting local governments across the country to provide personnel and material support to disaster-hit areas. Based on the experience of March 11, 2011, 38 of the 46 local governments that hadn't worked out their support plans prior to the 3.11 disasters, as well as 47 of the 49 local governments that had been without plans to accept such support, have either devised or are now planning to draw up such plans.

As for anti-nuclear disaster measures, 40 percent of the local governments said they are stockpiling potassium iodine to prevent residents' thyroid glands from being affected by exposure to radiation.

March 21, 2014

## Don't be "stingy" with safety

### Regulator urges TEPCO not to be 'stingy' with safety investment

<http://mainichi.jp/english/english/newsselect/news/20140321p2g00m0dm005000c.html>

TOKYO (Kyodo) -- The Nuclear Regulation Authority urged ailing Tokyo Electric Power Co. on Thursday not to be "stingy" with money in its efforts to ensure the stability of the accident-stricken Fukushima Daiichi nuclear power plant.

"Please do not be stingy with investment in the Fukushima plant. It may be difficult to do so because the facilities do not generate profits, but the handling of the plant should be TEPCO's top priority," NRA Commissioner Toyoshi Fuketa said during a meeting with TEPCO President Naomi Hirose and other senior officials.

The meeting, also attended by NRA Chairman Shunichi Tanaka, was held shortly after TEPCO found its key water treatment system not working properly, the latest in a series of problems at the plant.

To make matters worse, the toxic water, without seeing its radiation level drop, flowed into 21 tanks that have already been keeping treated water, and got mixed.

Fuketa said "insufficient investment in equipment" could be one of the reasons that led to such contamination of treated water.

Hirose told reporters later that TEPCO has "never intended to be stingy," but also said, **"There are things that we regret not having done."**

During the meeting, TEPCO also said it plans to reduce the air radiation level of the plant site, except for areas around the highly contaminated Nos. 1 to 4 reactor buildings, to an average 5 microsieverts per hour by the end of fiscal 2015.

The target has been set to create a better working environment at the plant, where some 4,000 people are working per day.

TEPCO expects the decommissioning process of the Nos. 1 to 4 units to take up to 40 years or so. The company is also struggling to manage the buildup of toxic water, which is increasing daily in the process of keeping the crippled Nos. 1 to 3 reactors cool.

March 22, 2014

## Fighting nuclear terrorism

### **Editorial: Int'l community must maintain cooperation against nuclear terrorism**

<http://mainichi.jp/english/english/perspectives/news/20140322p2a00m0na005000c.html>

More than 50 countries are set to discuss ways to prevent nuclear terrorism at the Nuclear Security Summit 2014 in The Hague on March 24 and 25, as the United States and the European Union continue to lock horns with Russia over the fate of the Crimea and Ukraine.

There are fears that this conflict, which could be viewed as the opening act in a new Cold War, could cast a shadow over discussions at the upcoming summit. The international community must not, however, step back from the cooperative efforts it has built up to prevent nuclear terrorism.

The Nuclear Security Summit has been held every other year since 2010 on the initiative of U.S. President Barack Obama, who in his first term appealed for a world without nuclear weapons. The summit is based on the recognition that even though nuclear arms reductions are important, the world cannot be safe unless countries all over the globe cooperate in thoroughly managing nuclear materials and keeping them from falling into terrorist hands.

Nuclear terrorism has become increasingly realistic in the eyes of people all over the world since the coordinated attacks on the United States in September 2001.

Nuclear experts say a nuclear weapon could theoretically be produced from about eight kilograms of plutonium or roughly 25 kilograms of highly-enriched uranium. Global stockpiles of plutonium and enriched uranium stood at about 500 metric tons and 1,400 tons respectively at the end of 2010. It is, however, easier to produce so-called "dirty bombs," which can contaminate the environment with radioactive materials. Moreover, serious concerns have been raised over terrorist attacks -- both physical and digital -- on nuclear power stations.



At the upcoming summit, the leaders of more than 50 countries, including Japan, the United States and Russia, will discuss efforts to prevent these problems and present any new agreements in "The Hague Communique." Prime Minister Shinzo Abe will represent Japan -- the only country to have suffered atomic attack -- at the meeting. There, Abe will emphasize that the Japanese government is striving to make this country the world's safest by minimizing and properly managing nuclear materials it possesses and taking measures to prevent terrorist attacks on atomic power stations. As part of specific action to that end, Japan will agree with the United States to return weapons-grade plutonium that Tokyo had been provided with by Washington in the 1960s for research purposes.

On the other hand, it is regrettable that Russian President Vladimir Putin will not attend the upcoming meeting even though the country had dispatched its president to the past two summits, highlighting differences among member countries' response to the issue. President Obama will host a summit meeting of Group of Seven (G7) industrialized democracies on the sideline of the Nuclear Security Summit to take further action against Russia and discuss assistance to Ukraine. Such being the case, it is inevitable that relations between Russia and the G7 countries, including Japan, will be strained.

Furthermore, summit talks between Japan, the United States and South Korea as well as between the United States and China are expected to be held in The Hague. The profusion of important "side" meetings is feared to overshadow the Nuclear Security Summit itself. However, the attendees should reaffirm the importance of their original goal of preventing nuclear terrorism while remembering the Sept. 11, 2001 terrorist attacks on the United States.

The possibility of nuclear terrorism can no longer be dismissed as unreal. Terrorist organizations could take advantage of conflicts between major countries to find backchannel routes to nuclear materials. Even though the conflict between the U.S.-European alliance and Russia is likely to continue for the time being, it is necessary for the international community to build up cooperation from a broader perspective to prevent the nightmare of nuclear terrorism from becoming real-world tragedy.

March 23, 2014

## Nuclear Security Summit in The Hague

### **Abe leaves for Netherlands to attend Nuclear Security Summit**

<http://mainichi.jp/english/english/newsselect/news/20140323p2g00m0dm004000c.html>

TOKYO (Kyodo) -- Prime Minister Shinzo Abe departed Sunday for the Netherlands to attend the Nuclear Security Summit in The Hague.

On the sidelines of the conference, Abe is expected to attend a trilateral summit with U.S. President Barack Obama and South Korean President Park Geun Hye, possibly on Tuesday, during which the three are expected to confirm their cooperative stance in addressing North Korea's nuclear and missile issues.

"I hope I can engage in a frank exchange of views over security in East Asia, and I expect (the trilateral summit) to become the first step to establish a future-oriented Japan-South Korea relations," Abe told reporters prior to the departure.

Abe is also scheduled to take part in a meeting of leaders of the Group of Seven major nations, at which they will discuss how they should support Ukraine following Russia's annexation of Crimea.

"I will closely work with other G-7 nations (over the Ukraine issue), while communicating with Russia," he said.

Japanese government sources said Abe will announce during the G-7 meeting that Japan will provide around 100 billion yen in economic assistance to Ukraine in cooperation with other countries and the International Monetary Fund.

### **Japan to send plutonium to US for disposal**

[http://www3.nhk.or.jp/nhkworld/english/news/20140323\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20140323_05.html)

## **The New York Times on the return of Japanese plutonium**

### **Japan to Let U.S. Assume Control of Nuclear Cache**

[http://www.nytimes.com/2014/03/24/world/asia/japan-to-let-us-assume-control-of-nuclear-cache.html?emc=edit\\_th\\_20140324&nl=todaysheadlines&nlid=32427321&r=0](http://www.nytimes.com/2014/03/24/world/asia/japan-to-let-us-assume-control-of-nuclear-cache.html?emc=edit_th_20140324&nl=todaysheadlines&nlid=32427321&r=0)

By MICHAEL D. SHEAR and DAVID E. SANGER

THE HAGUE — Japan will announce Monday that it will turn over to Washington more than 700 pounds of weapons-grade plutonium and a large quantity of highly enriched uranium, a decades-old research

stockpile that is large enough to build dozens of nuclear weapons, according to American and Japanese officials.

The announcement is the biggest single success in President Obama's five-year-long push to secure the world's most dangerous materials, and will come as world leaders gather here on Monday for a nuclear security summit meeting.

Since Mr. Obama began the meetings with world leaders — this will be the third — 13 nations have eliminated their caches of nuclear materials and scores more have hardened security at their storage facilities to prevent theft by potential terrorists.

Japan's agreement to transfer the material — the amount of highly enriched uranium has not been announced but is estimated at 450 pounds — has both practical and political significance. For years these stores of weapons-grade material were not a secret, but were lightly guarded at best; a reporter for The New York Times who visited the main storage site at Tokaimura in the early 1990s found unarmed guards and a site less-well protected than many banks. While security has improved, the stores have long been considered vulnerable.

Iran has cited Japan's large stockpiles of bomb-ready material as evidence of a double standard about which nations can be trusted. And last month China began publicly denouncing Japan's supply, in apparent warning that a rightward, nationalistic turn in Japanese politics could result in the country seeking its own weapons.

At various moments right-wing politicians in Japan have referred to the stockpile as a deterrent, suggesting that it was useful to have material so that the world knows Japan, with its advanced technological acumen, could easily fashion it into weapons.

The nuclear fuel being turned over to the United States, which is of American and British origin, is a fraction of Japan's overall stockpile. Japan has more than nine tons of plutonium stored in various locations and it is scheduled to open in the fall a new nuclear fuel plant that could produce many tons more every year. American officials have been quietly pressing Japan to abandon the program, arguing that the material is insufficiently protected even though much of it is in a form that would be significantly more difficult to use in a weapon than the supplies being sent to the United States.

Mr. Obama's initiative to lock down plutonium and uranium around the world was supposed to have been just the first step in an ambitious agenda to seek "the peace and security of a world without nuclear weapons," as he said in Prague in 2009. Now, the downturn in relations with Russia has dashed hopes of mutual reductions in the world's two largest arsenals. At the same time, North Korea has resumed its

program, Pakistan and India are modernizing their weapons, and the Senate has not taken up any of the treaties Mr. Obama once described as vital.

The result is that nuclear security — eliminating or locking down nuclear material — may be the biggest element of Mr. Obama's nuclear legacy. The only other aspect of his agenda that may yet come to fruition centers on Iran, where economic sanctions, covert action and diplomacy have brought Tehran to the table to negotiate over its nuclear program.

But even Mr. Obama says his chances of reaching a deal are at best 50-50.

"The Obama team came in thinking a lot of things would be easier than they turned out to be," said Matthew Bunn, a professor at Harvard's Belfer Center for Science and International Affairs.

One of Mr. Obama's major goals has been to stop the production of new supplies of nuclear material; at the last nuclear security summit meeting, in 2012, he said "we simply can't go on accumulating huge amounts of the very material, like separated plutonium, that we're trying to keep away from terrorists." But Pakistan has blocked his effort to negotiate a treaty that would end the production of more material — called the Fissile Material Cutoff Treaty — and it is unclear whether the summit communiqué will contain language urging other countries to disgorge their plutonium stockpiles.

There have been other obstacles to Mr. Obama's agenda.

He succeeded in negotiating a modest arms control treaty with Russia in 2010, but the rapidly deteriorating relationship with Russian President Vladimir V. Putin has all but ended hopes for further reductions in the arsenals of the two countries.

Nonetheless, the effort to secure dangerous nuclear materials in Russia and the former Soviet states has been one of the big successes of the post-cold-war era: Just last year Ukraine, then still under the control of the ousted president Victor Yanukovich, sent more than 500 pounds of weapons-grade uranium from a reactor back to Russia. Ukraine gave up its nuclear weapons — left over after the fall of the Soviet Union — two decades ago. Had the weapons and materials remained in Ukraine, the current standoff with Russia might have taken on far more dangerous dimensions.

But Mr. Obama's agenda has also run into major troubles in the Senate. In 2009 and 2010 the White House promised to reintroduce the Comprehensive Test Ban Treaty, which was defeated in the Senate during the Clinton administration. It has never been put back in front of the Senate, for fear of a second

rejection. Even seemingly noncontroversial legislation, including passage of two nuclear terrorism conventions that deal with the physical protection of materials, has been stuck.

Both administration officials and advocates of major nuclear reductions argue that Mr. Obama has focused a level of attention on securing stockpiles even if his arms reduction efforts have come up short.

“What President Obama has done is put it more on the front burner and accelerated the process,” said Sam Nunn, a former Democratic senator from Georgia who played a central role in creating the American-backed program to help dismantle nuclear weapons and clean up nuclear material around the world.

“Significant progress has been made — not enough,” said Mr. Nunn, the chairman of the Nuclear Threat Initiative, a research group that presses for deeper cuts.

The summit meetings, which have taken place every two years, have forced national leaders to focus on their stockpiles of materials and their protections, and engaged the United States on their processes for securing them, blending them down so they cannot be used in bombs, or getting rid of them.

“This process has given us the opportunity to build relationships that have opened new doors to cooperation, some of which we can talk about and some of which we can’t,” said Elizabeth Sherwood-Randall, who heads the effort at the National Security Council and has been negotiating with countries participating in the meeting.

Of the agreement with Japan, she said: “This is the biggest commitment to remove fissile materials in the history of the summit process that President Obama launched, and it is a demonstration of Japan’s shared leadership on nonproliferation.”

Ms. Sherwood-Randall said that even Russia “has continued to work on nuclear security at a professional level,” despite the tensions over Ukraine. But she conceded: “It is true that at this moment, we will not begin a new discussion about new arms control. This is not something the Russians are interested in at this time.”

In fact, Russia is now modernizing its nuclear force. So is the United States: To pass the New START treaty in 2010, the administration told Congress it would spend upward of \$80 billion on a “life extension” program for its existing nuclear arsenal, and it will cost far more to upgrade nuclear submarines in years ahead.

Michael D. Shear reported from The Hague, and David E. Sanger from Washington.

March 24, 2014

## Returning plutonium to US

### **Japan to hand over weapons-grade plutonium to U.S.**

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201403240062](http://ajw.asahi.com/article/behind_news/politics/AJ201403240062)

Japan will finally address long-held concerns about the vulnerability of its plutonium stockpile to terrorism and hand over its weapons-grade material to the United States.

Sources said Japan will announce its intention to turn over its highly enriched uranium and plutonium to the United States during the two-day Nuclear Security Summit in The Hague that started March 24.

Japan's stockpile of 500 kilograms of uranium and plutonium is kept at facilities run by the Japan Atomic Energy Agency (JAEA) in Tokai, Ibaraki Prefecture.

While Japan has argued the materials are being kept purely for basic research, the fact the materials have been enriched means they can easily be converted into dozens of nuclear weapons.

The Asahi Shimbun, in cooperation with the Center for Public Integrity (CPI), a U.S. nonprofit investigative journalism organization, has uncovered persistent concerns expressed by officials in Washington about deficiencies in steps taken to protect the materials from falling into the hands of terrorists.

The nuclear materials to be turned over to the United States are kept at the Fast Critical Assembly (FCA) of the JAEA.

According to internal documents of the U.S. Energy Department obtained by CPI, the FCA facility has 199 kilograms of 93-percent enriched uranium. It also looks after about 290 kilograms of fissile plutonium, of which 231 kilograms is 92-percent enriched.

According to sources, the uranium was purchased from Britain, while the plutonium was acquired from the United States and Britain, from the 1960s up to around 1970. The materials were purchased for research purposes.

Because the materials are highly enriched, sources said only a small amount--anywhere between several kilograms to several dozens of kilograms--would be needed to create a nuclear weapon.

The radiation level is also not high, making the material easily portable in 5-centimeter-square sheets.

That makes the plutonium and uranium a desirable target for terrorists, which is the overriding concern of U.S. officials.

The United States strengthened restrictions on nuclear materials from 1976 due to concerns about proliferation. Since the 1990s, Japan has been gradually returning highly enriched uranium kept at research reactors operated by universities and research institutes to the United States.

The pressure to secure nuclear materials has increased under U.S. President Barack Obama, who has stated his desire for a nuclear-free world.

In addition to the nuclear materials at the Tokai facility, Japan also has about 40 tons of plutonium to be used as fuel in nuclear plants. It is also seeking to extract more plutonium once a spent fuel reprocessing facility in Rokkasho, Aomori Prefecture, begins operations.

While those nuclear materials are less likely to be converted into nuclear weapons because the enrichment is lower, the United States has also asked Japan to strengthen security and measures against terrorists for those materials as well.

A U.S. government source said the security measures now in place at the Tokai facility were so lax it would be unthinkable in the United States.

The 2011 Fukushima nuclear disaster not only highlighted the structural weakness of nuclear plants in Japan, but also focused attention on the need to bolster security against terrorists.

To help alleviate those concerns, the police have increased the number of officers guarding nuclear plants by 216. In 2012, the police in conjunction with Self-Defense Forces also began joint training exercise at nuclear plants.

China is also concerned about the safety of Japan's nuclear materials and has said it will raise the issue at the Nuclear Security Summit that President Xi Jinping will attend.

At a news conference in Beijing on March 17, Li Baodong, a vice foreign minister, said: "The international community has raised concerns about the plutonium and highly enriched uranium contained among the nuclear materials kept by Japan because it can be used to manufacture nuclear weapons. Japan must make a clear explanation as well as take actual action to erase such concerns."

In the background to China's stance is the distrust toward Japan about its management of nuclear materials in the wake of the reactor meltdowns at the Fukushima plant following the 2011 earthquake and tsunami disaster. The concerns held by China have also been intensified by its confrontation with the Abe administration over historical recognition and territorial issues.

(This article was compiled from reports by Senior Staff Writer Toshihiro Okuyama in Tokyo and Nozomu Hayashi in Beijing.)

## Nuclear security meeting

### **Nuclear summit to seek actions against terrorism**

[http://www3.nhk.or.jp/nhkworld/english/news/20140324\\_14.html](http://www3.nhk.or.jp/nhkworld/english/news/20140324_14.html)

World leaders will gather in the Netherlands on Monday for the 3rd Nuclear Security Summit.

They'll release a joint statement at the end of the 2-day event in The Hague. In it, they will call on countries to minimize their stocks of highly-enriched uranium and plutonium to prevent them from falling into the hands of terrorists.

The statement is expected to highlight one of the most important challenges facing the countries, which is to confirm the goal of nuclear disarmament, nuclear non-proliferation and peaceful use of atomic power.

It will emphasize their responsibility of ensuring that all nuclear and radioactive materials and nuclear-related facilities are secure.

The statement will emphasize the importance of domestic legislation and regulations.



It will also refer to political, technical and financial support for the International Atomic Energy Agency.

April 2, 2014

## Preparing for Nuclear Emergencies

### Preparing for Nuclear Emergencies

<http://www3.nhk.or.jp/nhkworld/newsline/201404022023.html>

Japanese utilities are applying for restart and trying to improve safety.

To this end, they are funding research on cutting-edge technologies like robots to deal with nuclear plant emergencies.

But:

- It is not easy to judge situations based on videos alone
- Robots have to be trained to go round obstacles like doors, etc.
- These robots have mostly been developed for other uses and have to be adapted
- People also have to be trained to use robots

Technology is only part of the equation.

April 6, 2014

## Half of evacuation plans well behind schedule

### Nuclear emergency evacuation plans lagging in 11 prefectures: survey

<http://www.japantimes.co.jp/news/2014/04/06/national/nuclear-emergency-evacuation-plans-lagging-in-11-prefectures-survey/#.U0FliFfi91s>

KYODO – Efforts to estimate the time needed to evacuate residents living within 30 km of a nuclear power plant in an emergency are behind schedule in half of the prefectures concerned, a Kyodo News survey shows.

Local governments within 30 km of a nuclear power plant are supposed to estimate the time needed for residents to get to safe locations when an evacuation is ordered, and to use those estimates to pinpoint road crossings where congestion is likely in order to coordinate evacuation routes.

But the effort is behind schedule in 11 of the 21 prefectures affected, the survey found. The state-led effort was supposed to be completed by March last year, but it has taken more time than expected to obtain the data needed to carry out the estimations, officials said.

In five of the 11 prefectures — Fukui, Fukuoka, Saga, Nagasaki and Kagoshima — there are communities within 30 km of at least one nuclear plant that is awaiting permission to restart. The other six prefectures are Aomori, Fukushima, Niigata, Shizuoka, Tottori and Shimane.

April 7, 2014

## JAIF report: Why some plants avoided major accidents

### **Accident Management Measures Succeeded At Three Japan Plants, Says Report**

<http://www.nucnet.org/all-the-news/2014/04/07/accident-management-measures-succeeded-at-three-japan-plants-says-report>

Serious accidents were avoided at three nuclear power stations in northern Japan following the March 2011 earthquake and tsunami because there were no station blackouts and immediate accident management measures were successful, a report released by the Japan Atomic Industrial Forum (Jaif) says.

The report says that as a result of damage to off-site power facilities and transmission towers caused by the earthquake, off-site power was lost at all six units at Fukushima-Daiichi.

All emergency diesel generators at Fukushima-Daiichi – with the exception of one air-cooled diesel generator at Unit 6 – lost function because they were covered with water by the tsunami, the report says.

However, severe accidents did not occur at the Fukushima Daini, Onagawa and Tokai nuclear power stations, which were also affected by the earthquake and the tsunami.

This was because offsite power was not entirely lost. At Fukushima Daini one of four off-site power lines survived. At Onagawa, one of five lines survived and at Tokai, although all three off-site power lines were lost, two of three emergency diesel generators remained operational.

The report, based on analysis prepared by the Nuclear Safety Division of the Atomic Energy Society of Japan, also confirms that operators at Fukushima-Daiichi had prepared for a possible maximum tsunami height of less than half the height of the tsunami that hit the facility on 11 March 2011.

The report says there had traditionally been “no clear regulatory standards” for tsunamis and each plant operator had “renewed its expectations” for the potential height of a tsunami whenever there was new knowledge or experience.

The actual tsunami height at Fukushima-Daiichi was 13.1 metres, more than double the assumed maximum tsunami height of 6.1 metres, the report says. This led to damage to safety-critical equipment.

The country’s new nuclear regulator, the Nuclear Regulation Authority, now demands strict tsunami measures in its new regulatory standards, the report says.

At Fukushima Daini, the maximum tsunami height was around eight metres and the assumed maximum was 5.2 metres. At Onagawa, the maximum was 13 metres against an assumed 13.6 meters and at Tokai it was 5.5 metres against an assumed 6.61 metres.

The report notes that the seismic building at Fukushima Daini had been newly constructed based on findings from a previous earthquake and it had begun operation in July 2010. It served as the base for recovery efforts, playing a key role in achieving states of cold shutdown, the report says.

The JAIF report is online:

[www.jaif.or.jp/english/news\\_images/pdf/ENGNEWS02\\_1396588415P.pdf](http://www.jaif.or.jp/english/news_images/pdf/ENGNEWS02_1396588415P.pdf)

April 10, 2014

## **New safety system tested at Kashiwazaki-Kariwa**

### **TEPCO tests filtered vent at nuclear plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140410\\_36.html](http://www3.nhk.or.jp/nhkworld/english/news/20140410_36.html)

Tokyo Electric Power Company has tested a new safety system designed to deal with emergencies at nuclear power plants.

The utility tested the newly installed filtered vent system at its Kashiwazaki-Kariwa plant in Niigata Prefecture, central Japan, on Thursday.

The system is designed to reduce pressure in reactor containment vessels in emergencies while limiting

emissions of radioactive materials.

The system is required under tougher safety guidelines that took effect last July.

The vent was installed at the plant's No. 7 reactor.

The Nuclear Regulation Authority is conducting safety reviews of the facility's No. 6 and 7 reactors as a step to decide whether to allow them back online.

In the test, workers funneled nitrogen through a cylinder measuring 8 meters tall and 4 meters in diameter to determine whether the gas flowed through piping as planned. Nitrogen was used in place of gas containing radioactive materials.

Niigata Prefecture has voiced concern over the system. Officials say radioactive materials released through the filter may affect residents. A technology panel is reviewing the system's safety and operation methods.

Tokyo Electric officials say they will explain test results to local governments and discuss operation methods.

April 11, 2014

## Future nuclear ratio

### Govt. to set ratio for nuclear power

[http://www3.nhk.or.jp/nhkworld/english/news/20140411\\_47.html](http://www3.nhk.or.jp/nhkworld/english/news/20140411_47.html)

Prime Minister Shinzo Abe says his government will set the ratio of nuclear power in Japan's energy mix after considering the situation once the reactors are restarted.

Abe spoke to a plenary session of the Lower House on Friday about the basic energy plan approved by the Cabinet earlier in the day.

He said the government's policy is to develop an energy-saving society and introduce renewable energy sources, while reducing dependence on nuclear power as much as possible.

But Abe said that given Japan's increased dependence on natural gas and other fossil fuels, he can't say that Japan will completely abandon nuclear power.

He added the government does not currently have any plans to build any more nuclear reactors or plants. Abe said the focus will be on diversifying energy resources and on how experts will view the resumption

of existing reactors.

Abe said the government will set a target for the optimum mix of energy sources. He said the government will do that after looking into the situation regarding renewable energy and its potential, as well as the status of resumed operations at idled nuclear plants.

## **Japan decides new energy policy that supports use of nuclear power**

<http://mainichi.jp/english/english/newsselect/news/20140411p2g00m0dm038000c.html>

TOKYO (Kyodo) -- The government of Prime Minister Shinzo Abe decided on a national energy policy Friday that supports the use of nuclear power now and in the future, retracting a nuclear phase-out goal introduced by its predecessor after the 2011 Fukushima Daiichi disaster.

The Basic Energy Plan sets the stage for the government to move ahead to restart nuclear reactors, all of which are now offline amid safety concerns, while reaffirming the continuity of the country's spent fuel recycling projects that have not made headway.

The move has been expected since the pro-nuclear Liberal Democratic Party returned to power in December 2012, but the government spent several more months than initially expected before deciding on the plan as draft documents stirred controversy among lawmakers who saw them as too strongly pro-nuclear in tone.

"We have compiled a basic policy on the medium to long-term measures to rebuild a responsible energy policy that supports people's lives and economic activities," Economy, Trade and Industry Minister Toshimitsu Motegi, who was in charge of crafting the plan, told a press conference.

After going through some revisions in the draft, the government decided to define nuclear power as an "important base-load power source" that is cheap in terms of operation costs and can stably generate electricity continuously through the day.

As for the policy direction over the next 20 years or so, the government said it will "proceed with the reactivation of nuclear power plants" that have satisfied what the government calls the world's toughest regulatory standards, and at the same time pledged to "reduce nuclear dependence as much as possible."

It also left open the possibility of allowing the construction of new reactors, saying in the plan that the government will "assess the amount of nuclear power that should be secured" to ensure a stable energy supply in a resource-scarce country.

While admitting Japan has faced difficulties to materialize its long-standing nuclear fuel recycling policy, the energy plan highlighted the need to pursue plans to reprocess spent uranium fuel and reuse the extracted plutonium and uranium as reactor fuel.

On the trouble-plagued Monju prototype fast-breeder reactor, which has been developed to play a key role in fuel recycling, the government said the facility should serve as a center for research to reduce the volume of nuclear waste and to improve technologies related to nonproliferation.

Apparently to fend off criticism the government is irresponsible to turn to nuclear power without finding a final disposal site for high-level radioactive waste generated through reprocessing, the plan said the state will play "a proactive" role to resolve the stalled process.

The government did not include specific percentages of the country's future energy mix in the plan, citing the difficulty to foresee at the moment the number of reactors that will be safe enough to restart and the amount of renewable energy available.

But to show its desire to boost renewable energy, the government promised to seek to introduce such energy sources "farther above" the level aimed at in the past, adding a footnote that the previous Basic Energy Plan decided on in 2010 expected renewables to account for about 20 percent of the total electricity demand in 2030.

Motegi said the government will decide the target of the country's future energy composition as quickly as possible, adding that he does not expect the work to take "two or three years."

Japan has had a Basic Energy Plan since 2003. The government is legally required to check the plan at least once every three years and revise it if necessary.

The previous plan aimed to boost the nation's reliance on nuclear power to some 50 percent by 2030. Before the Fukushima disaster, nuclear power supplied about 30 percent of the total electricity supply.

In 2012, the government led by the Democratic Party of Japan decided on what it called an "energy strategy" aiming to phase out nuclear power by the end of the 2030s.

But the landmark decision triggered strong opposition from the business world, and the government at that time did not go so far as to revise the 2010 Basic Energy Plan that was expected to stipulate the details to realize the strategy.

## 65 hours is a long time

### **Realistic' evacuation of area around Aomori nuke plant would take 65 hrs: simulation**

<http://mainichi.jp/english/english/newsselect/news/20140411p2a00m0na007000c.html>

AOMORI -- It would take 65 hours and 10 minutes to evacuate all of some 73,000 people living within 30 kilometers of a local nuclear plant in the wake of an accident, according to a prefectural government simulation.

According to the simulation results released on April 10, the time was based on the "most realistic" of 125 evacuation scenarios in the case of an accident at Tohoku Electric Power Co.'s Higashidori Nuclear Power Plant in the village of Higashidori. If authorities managed to implement efficient traffic control measures, however, the prefecture said that the evacuation could be completed in as little as 27 hours and 20 minutes.

The longest evacuation simulation, supposing a nuclear accident during Aomori's snowy winter, clocked in at 70 hours and 50 minutes. This scenario also imagined only 20 percent of residents leaving before an official evacuation directive was issued, and that 95 percent would flee in their cars.

The simulations, conducted by a private third-party firm, tested a wide range of conditions including the time of day, the season and the percentage of residents evacuating on their own initiative or using their own vehicles.

The most "realistic" scenario tested supposed an evacuation directive issued at night following a nuclear accident sometime between spring and fall, with 60 percent of residents fleeing of their own accord before the directive, and 90 percent of residents using their own cars. Under those conditions, the evacuation took just over 65 hours to complete.

The simulation showed that "if everyone tries to evacuate at once, individual evacuation times tend to increase," the prefecture stated.

April 19, 2014

## Missing evacuation plans

### **50% of municipalities lack nuclear evacuation plan**

[http://www3.nhk.or.jp/nhkworld/english/news/20140420\\_01.html](http://www3.nhk.or.jp/nhkworld/english/news/20140420_01.html)

Around half of the municipalities within 30 kilometers from a nuclear power plant have yet to draw up plans for evacuation in the event of a nuclear accident.

Japan's Nuclear Regulation Authority is now conducting safety screening of 17 reactors, about one-third of all the nuclear reactors in the country. It is expected that one or more of them can receive permission to restart operations this summer at the earliest. Currently, all reactors in the country are offline.

But the nuclear authority says only 64 of 135 municipalities within 30 kilometers from a nuclear power station had completed evacuation plans as of the end of March.

In 6 of the 13 zones hosting one or more nuclear plants, none of the municipalities have yet to complete planning.

In Miyagi and Fukushima prefectures, a large number of people are still living in shelters and priority is on rebuilding from the 2011 disaster. In Shizuoka and Ibaraki prefectures, nearly one million people live in each of the 30-kilometer zones. This figure makes it difficult to secure facilities where they can take refuge in the event of an accident.

April 21, 2014

## NRA expresses concerns about ice wall

### **Safety concerns over ice wall plans at Fukushima**

[http://www3.nhk.or.jp/nhkworld/english/news/20140421\\_23.html](http://www3.nhk.or.jp/nhkworld/english/news/20140421_23.html)



Japan's nuclear regulator and experts are questioning the safety of plans to build frozen walls to deal with the buildup of radioactive wastewater at the disabled Fukushima Daiichi nuclear power plant.

The government and plant operator Tokyo Electric Power Company plan to create walls of frozen soil to prevent groundwater from flowing beneath the reactor buildings. 400 tons of groundwater is flowing beneath the facilities from nearby mountains every day.

The government and TEPCO want to start construction in June. But they need permission from the Nuclear Regulation Authority, or NRA.

The NRA invited experts to a meeting last Friday to assess the planned ice walls.

NRA Commissioner Toyoshi Fuketa expressed concern about **the risk of the ground sinking**.

Experts raised questions about the **effects of a power blackout on the frozen walls**.

They said all the risks need to be addressed further.

The NRA decided to continue to closely look into the safety of the planned frozen walls.

April 23, 2014

## Are operators really trying to improve safety?

### Nuclear regulator criticizes utilities' efforts

[http://www3.nhk.or.jp/nhkworld/english/news/20140423\\_11.html](http://www3.nhk.or.jp/nhkworld/english/news/20140423_11.html)

The head of Japan's nuclear regulator says electric power utilities have totally failed to convey what they learned from the Fukushima Daiichi nuclear accident and what measures they are pursuing to improve safety.

Nuclear Regulation Authority Chairman Shunichi Tanaka made the remark to Japan Nuclear Safety Institute Chairman Shojiro Matsuura on Tuesday.

The institute was established by electric power companies in November of last year to help improve safety at nuclear power plants. This was the first exchange of views between the 2 organizations.

Matsuura said that keeping Japan's nuclear power plants offline for a long time will have a negative impact on what he called "the culture of safety."

Tanaka said the nuclear accident was caused by the arrogance of science and technology.

He said nuclear operators have utterly failed to communicate whether they are seriously reflecting on the accident and making efforts to improve safety. He urged the institute to better instruct the utilities.

All of Japan's 48 reactors are currently offline. But utilities have applied for safety screenings to restart 17 reactors at 10 plants.

## Safer path for Oi plant?

### Ohi nuclear plant operator tightens safety

[http://www3.nhk.or.jp/nhkworld/english/news/20140423\\_41.html](http://www3.nhk.or.jp/nhkworld/english/news/20140423_41.html)

The operator of the Ohi nuclear power plant in central Japan has submitted to regulators a revised estimate for tremors from potential earthquakes at the plant.

Kansai Electric Power Company was aiming at an early restart of the off-line plant. But the revision concerning the possible impact of a quake would require additional reinforcement. This could take time.

The revision was demanded by the country's Nuclear Regulation Authority in its safety screening, a precondition for the plant's restart.

The utility on Wednesday revised the depth of the potential epicenter of a nearby quake from 4 kilometers to 3 kilometers. This means a stronger tremor would shake the plant.

NRA Commissioner Kunihiro Shimazaki approved of Kansai Electric Power's decision, calling it a safer path.

The revision would require the operator to spend significant time strengthening the plant's facilities. The utility will be facing a summer without nuclear power for the first time since the 2011 Fukushima Daiichi disaster as another plant also needs to clear similar hurdle.

The Ohi plant was allowed to operate for 14 months through September last year as an exceptional case to cover Osaka and surrounding areas' demand for electricity after the Fukushima Daiichi disaster.

The plant is one of the first 6 nuclear power plants to apply for the tightened safety screening last July.

April 24, 2014

## 28 hours to evacuate Shizuoka Pref.

## **Evacuation from Hamaoka could take 28 hours**

[http://www3.nhk.or.jp/nhkworld/english/news/20140424\\_15.html](http://www3.nhk.or.jp/nhkworld/english/news/20140424_15.html)

Shizuoka Prefecture says it could take more than 28 hours for around 860,000 people within a 30-kilometer radius of the Hamaoka nuclear power plant to evacuate in the event of a serious accident.

The Hamaoka plant, run by Chubu Electric Power Company, is located nearly at the center of the projected focal area of a mega-quake that could hit central Japan in the near future. The operator closed it following a state government request after the 2011 Fukushima nuclear accident.

The prefectural government that hosts the plant on Thursday released estimated evacuation times for a range of scenarios. It made the calculations after the area for which prior planning is required for a nuclear disaster was expanded from 10 kilometers to 30 kilometers.

The Shizuoka prefectural government says an evacuation will take 28 hours and 15 minutes if residents are guided to evacuate in stages to avoid traffic jams. This would be despite partial road blockage due to multiple disasters involving an earthquake and tsunami.

But it says it could take longer, as the scenario is based on the most efficient evacuation methods. For example, it assumes 3 people would ride in one car.

Prefectural officials in charge of nuclear security say they will discuss these calculations with local municipalities. They say they want evacuation plans to reflect the estimations.

April 25, 2014

## **Sendai plant & evacuation**

### **Residents near Sendai plant briefed on evacuation**

[http://www3.nhk.or.jp/nhkworld/english/news/20140425\\_15.html](http://www3.nhk.or.jp/nhkworld/english/news/20140425_15.html)

Residents near the Sendai nuclear power plant in Kagoshima Prefecture, southwestern Japan, are expressing concerns over evacuation procedures.

The prefectural government briefed around 130 residents on Thursday in Izumi City, which is located less than 30 kilometers from the plant. It was the first such meeting on the prefecture's evacuation program.

The central government is performing safety screenings at the plant operated by Kyushu Electric Power Company, which wants to restart two reactors at the facility.

Kagoshima government officials gave an overview of the evacuation program, including evacuation sites that would be used in the case of an emergency.

Residents then expressed anxieties over the plan. One resident said radiation levels at the evacuation sites might go up depending on the direction of the wind. Others said designated spots where residents without vehicles can board buses to evacuation sites are too far from their homes.

Izumi Mayor Toshihiko Shibuya said he will cooperate with other municipalities to ask the prefectural government to also explain its safety measures to Izumi residents.

Prefectural government officials plan to hold a similar session on the evacuation program in the prefectural capital city of Kagoshima. The city is also within the plant's 30-kilometer zone.

The Nuclear Regulation Authority is conducting the safety screening process at the Sendai plant as one step toward the resumption of its commercial operation.

The Sendai plant is one of the 10 nuclear plants currently being screened.

April 26, 2014

## Not so strict after all

### **Doubts raised over 'world's strictest' claim for new nuclear safety standards**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201404260044>



Nuclear Regulation Authority investigators survey geological faults in a 40-meter-deep tunnel on the premises of the Shika nuclear power plant in Ishikawa Prefecture in February. (Pool)

By SHINICHI SEKINE/ Staff Writer

Lawmakers and experts are questioning the Abe administration's claims that its new safety standards for nuclear power plants are rigorous enough to allow restarts of the country's reactors, all of which have been suspended as a consequence of the Fukushima nuclear crisis.

Earlier this month, the Cabinet approved its new basic energy plan, which states idled reactors that are judged to meet the "world's strictest standards," set by the Nuclear Regulation Authority, will be allowed to resume operations.

However, even NRA members and politicians within Prime Minister Shinzo Abe's ruling Liberal Democratic Party are doubting the accuracy of the assertion, as his administration has not presented a firm basis for the description.

“The assertion that the standards are ‘the world’s strictest’ is a lie,” a senior LDP official said. “That is mere lip service to allow the restart of reactors.”

Former Prime Minister Naoto Kan of the opposition Democratic Party of Japan submitted a written query asking why the government assumes the regulations are the world’s strictest.

The Abe administration, in its written reply approved April 25 by the Cabinet, said, “We have designed the standards so that they can attain the world’s highest levels, referring to other nations’ regulatory criteria.”

In response to the government’s answer, Kan said: “No evidence has been shown. It is just tautology to say the standards are the world’s highest because they are the world’s highest standards.”

NRA Commissioner Toyoshi Fuketa said he is cautious about calling the new requirements the “world’s strictest,” even though the standards are tougher than previous ones. The new regulations, for example, require nuclear plant operators to erect higher levees to block tsunami.

“It is difficult to decide whether (the new requirements) are at the world’s highest level,” Fuketa said. On April 15, during a meeting organized by the DPJ, an official of the Agency for Natural Resources and Energy was at a loss for words when asked about a basis for the government’s assertion.

Even former industry minister Masayuki Naoshima, a DPJ member who supports the plan to restart reactors at the earliest possible date, criticized the official.

“It is unacceptable to say that you cannot present evidence for (the basic energy plan), which has already been approved by the Cabinet,” Naoshima said.

Masashi Goto, a retired Toshiba Corp. nuclear engineer, said European countries are working to introduce new safety technologies that Japan has not introduced. As examples of those new equipment, Goto cited the core catcher, which is designed to cool melted reactor cores, as well as double-walled reactor containment vessels.

April 28, 2014

## Guard against terrorism

### Japan to improve anti-nuclear terrorism

[http://www3.nhk.or.jp/nhkworld/english/news/20140428\\_06.html](http://www3.nhk.or.jp/nhkworld/english/news/20140428_06.html)

Japan's nuclear regulator has told the nation's utilities to strengthen their efforts to guard against nuclear terrorism.

The Nuclear Regulation Authority held a meeting with senior management of utilities to impress upon them the importance of securing nuclear related material and facilities against terrorism.

During the meeting on Friday, NRA member Kenzo Oshima said that compliance with laws and regulations is not enough. He said that discipline and a proper organizational culture must be maintained.

Three incidences of regulatory violations occurred during the last fiscal year at Japanese nuclear facilities.

These include security sensors being turned off at the Tokai No.2 nuclear power plant north of Tokyo and visitors' identification documents not being photocopied at the Monju fast-breeder prototype reactor site in central Japan.

The NRA wants security measures to be enhanced and will have a team from the International Atomic Energy Agency assess the measures taken.

The regulator will also consider a mechanism for background checks on workers at nuclear facilities to include their criminal, health, and financial records to prevent them from becoming a terrorist or a collaborator.

But with voices being raised over privacy concerns, the NRA has not been decided whether the mechanism will be introduced.

April 30, 2014

## Blind Spot in Nuclear Safety

### Nuclear Watch: Blind Spot in Nuclear Safety

<http://www3.nhk.or.jp/nhkworld/newsline/201404301311.html>

Experts are still struggling to clarify what happened at Fukushima Daiichi during the venting process at the time of the disaster, in order to establish how much radioactivity was actually released in the environment.

But NHK's investigation team has discovered quite another story.

5.6 km away from the plant, there is a radiation monitoring post which studied the dispersion of radioactive particles and it contains data which are very surprising : it shows a strange spike of radiation at 14.40 on March 12, i.e. one hour before the first hydrogen explosion and shortly after a crucial operation was carried out at the plant (i.e. the opening of vents to release pressure)

At the time nuclear engineers declared that there would only be a very small release of radioactivity from the steam while venting (0.1% emission of radioactive particles).

But NHK's investigation has revealed that this may not have been the case!

Through an Italian nuclear equipment testing centre (SIET), two simulation experiments were carried out to see if the reality tallied out with the 0.1% estimation of radiation risk.

The first experiment was carried out at normal temperature. Most radioactive particles would have been trapped in the water. The results were consistent with the 0.1% theory.

However the temperature of the water could already have been quite high. So the second simulation raised the temperature in the upper layer of water. The experiment showed that **UP TO 50% radioactive elements could have escaped with the steam released. That is 500 times more than suggested by the previous simulation.**

Conclusions:

**“Crucial safety features can fail to function as expected.”**

**This “also reminds us that what we know about what happened at Fukushima Daiichi remains very limited.”**



May 1, 2014

## 50 hours to evacuate Fukushima Pref.

### 50 hours needed for evacuation if another nuclear accident occurs

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201405010034>

It would take two days to evacuate over half a million residents in the event of another massive radioactive leak at a nuclear power plant in Fukushima Prefecture, according to local officials.

The prediction released April 30 was part of a wide-area evacuation plan worked out by the prefectural government in preparation for the possibility of another nuclear accident occurring at one of the two nuclear power plants there.

It was based on the assumption that current evacuees from the areas around the Fukushima No. 1 nuclear power plant, which was crippled by the March 2011 earthquake and tsunami disaster, have all returned to their homes.

The evacuation plan assumed a worst-case scenario in which 0.5 millisievert of radiation per hour spread to 13 municipalities, with wind blowing from the east to the west, preventing residents from fleeing westward.

In that case, a maximum of 550,000 residents would evacuate to areas within the prefecture or to its southern neighbor, Ibaraki Prefecture, and it would take nearly 50 hours for them to complete the process.

## TEPCO's safety culture still not up to scratch, experts say

### Expert: TEPCO's safety culture still insufficient

[http://www3.nhk.or.jp/nhkworld/english/news/20140501\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20140501_29.html)

A panel of nuclear experts monitoring reforms at the Tokyo Electric Power Company says the utility's nuclear safety culture has not yet reached the required level.

TEPCO regularly reports to the independent advisory panel the utility set up after the 2011 accident at its Fukushima Daiichi plant. The utility gives updates on reforms to safety measures at nuclear power plants.

In the latest report, submitted on Thursday, TEPCO officials acknowledge management problems led to troubles with systems used to purify contaminated water, and repeated water leaks.

They say the firm has failed to end the vicious cycle of relying on makeshift systems due to lack of time, which leads to fresh troubles.

They say they were unable to make full preparations for cleanup work while being aware of a lack of technological capabilities.

The chairman of the panel, former US Nuclear Regulatory Commission Chairman Dale Klein, says TEPCO's safety culture has not reached the desired level in terms of preparing for the unexpected. He says the utility must make sure workers are fully aware that they are dealing with a special plant which caused an accident.

He recommends the utility learn from measures taken at overseas nuclear facilities, and make the most of external support in order to improve operations.

TEPCO executive Takafumi Anegawa says the firm hopes to seek knowhow from abroad to compensate for its lack of on-site operation capabilities. He pledges to swiftly improve operations.

May 2, 2013

## **TEPCO hoping to get knowhow from Sellafield**

### **TEPCO to cooperate with Britain's Sellafield**

[http://www3.nhk.or.jp/nhkworld/english/news/20140502\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20140502_33.html)

A division of the Tokyo Electric Power Company will cooperate with a British company to improve in areas such as management of nuclear waste and contaminated water.

TEPCO's Chief Decommissioning Officer Naohiro Masuda and Sellafield Managing Director Tony Price signed an agreement in London on Thursday.

TEPCO is seeking input from other countries as it decommissions the Fukushima Daiichi nuclear plant -- a

challenge that is projected to take 40 years.

TEPCO's arm dedicated to the project hopes to gain knowhow from Sellafield. The British company has taken part in decommissioning reactors and managing contaminated water.

TEPCO hopes for a long-term exchange of information on operating facilities that are part of the decommissioning process.

Sellafield is interested in the water treatment system and robots used at the Fukushima plant.

The main challenges TEPCO faces at the plant include retrieving melted fuel from reactor vessels, dealing with buildup and leaks of contaminated water, and ensuring the stable operation of makeshift facilities.

May 9, 2014

## Can SDF be used to fend cyber-attacks on nukes?

### **Gov't looks to mobilize SDF to defend nuclear plants from cyber-attacks**

<http://mainichi.jp/english/english/newsselect/news/20140509p2a00m0na009000c.html>

The government is working out rules on mobilizing Self-Defense Force (SDF) troops to defend key infrastructure, such as nuclear power plants and communications facilities, from large-scale cyber-attacks, government sources said.

Officials are considering whether to authorize the SDF to send viruses to computers used for such attacks to cause the machines to malfunction.

The Defense Ministry launched about a 90-member anti-cyber-attack unit at the end of March to maintain the chain of command should a cyber-attack be launched on the SDF and prevent such an attack from adversely affecting its operations. However, the team is only allowed to defend a computer network system connecting the ministry with SDF bases across the country.

Since the SDF's activities rely largely on infrastructure, such as electric power grids as well as transportation and communications systems, a growing number of government officials are demanding that the SDF be empowered to defend such key infrastructure as well.

It is difficult to ascertain whether cyber-attacks have been launched by hackers in Japan or by other countries.

Washington has repeatedly blamed Chinese forces for its involvement in cyber-attacks on U.S. government organizations.

As U.S., Chinese and British forces have capabilities to launch cyber-attacks, questions have been raised within the Japanese government as to whether the SDF, which is supposed to defend Japan, should be allowed to only defend itself from cyber-attacks.

In response to these opinions, the government has begun working out criteria for judging whether cyber-attacks on Japan constitute military attacks, for which Tokyo can exercise the right to self-defense permitted under the war-renouncing Constitution.

Furthermore, the government is studying whether counterattacks, such as sending viruses to computers used to launch cyber-attacks on infrastructure in Japan, would overstep the boundary of self-defense permitted under the Constitution.

The government had initially explored the possibility of constantly monitoring nuclear power stations and other facilities to prevent an attack. However, such surveillance has proven unrealistic because such activities could violate the constitutionally guaranteed secrecy of communication, and would require a massive number of personnel. Therefore, the government is working out criteria for responding after cyber-attacks are launched.

May 13, 2014

## **(Inter)national soccer training center 20km from Fukushima Daiichi**

### **Facility on edge of 20-km nuclear exclusion zone to become Olympic training center**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201405130031>

The government intends to turn a national soccer training center located just 20 kilometers from the crippled Fukushima No. 1 nuclear power plant into a practice facility for the 2020 Tokyo Olympic and Paralympic Games, sports minister Hakubun Shimomura said May 12.

The center, named “J-Village,” spans the municipalities of Hirono and Naraha in Fukushima Prefecture and is currently used by Tokyo Electric Power Co. as a base to deal with the nuclear accident triggered by the March 2011 earthquake and tsunami disaster.

“We must improve the circumstances (in the area) so that soccer players not only from Japan but also from abroad can hold training camps there in advance (of the Games),” the sports minister said in a news conference after inspecting the damaged nuclear power plant. “The government must positively back up measures for decommissioning reactors and coping with radioactive water without leaving the job entirely up to TEPCO.”

TEPCO said in January that it plans to return the J-Village training center around 2018 to the operator of the facility, which was jointly established by the Japan Football Association, the Fukushima prefectural government, TEPCO and other organizations.

“The 2020 Tokyo Olympic Games is a good target,” TEPCO President Naomi Hirose said at that time.

The government plans to have the Olympic training facility up and running by 2019.

May 14, 2014

## Safety plans at Hamaoka insufficient

### Cities near Hamaoka nuclear plant cite insufficient safety plans as gov't seeks restart

<http://mainichi.jp/english/english/newsselect/news/20140514p2a00m0na012000c.html>

The mayors of all 11 municipalities in the Urgent Protective Action Planning Zone (UPZ) around the Hamaoka Nuclear Power Plant in Shizuoka Prefecture, say that the plant would not qualify for restart even if the prefecture develops a regional evacuation plan as sought by the national government, a Mainichi Shimbun survey has revealed.

Chubu Electric Power Co. has applied to the Nuclear Regulation Authority (NRA) for safety inspections with the goal of restarting the Hamaoka plant in the city of Omaezaki. The plant has been offline for exactly three years as of May 14.

Due to nearby residents' safety concerns, the power company entered into a safety agreement with the four cities that lie within 10 kilometers of the plant, while the additional seven locales that lie within the UPZ's 30-kilometer radius are in the process of finalizing a similar accord.

All 11 municipalities are unanimous, however, in their unequivocal view that the national government's safety measures with respect to the plant remain inadequate.

The Mainichi Shimbun survey asked whether or not the safety standards would qualify for restarting the plant, in response to which the six municipalities of Makinohara, Kikugawa, Iwata, Yaizu, Shimada and Yoshida replied "no," while the five locales of Omaezaki, Kakegawa, Fukuroi, Fujieda and Mori responded "other." None of the cities queried answered "yes."

"The location (of the nuclear plant) is unacceptable," commented Makinohara Mayor Shigeki Nishihara, who has been against its restart from the beginning.

Meanwhile, Omaezaki Mayor Shigeo Ishihara, who has shown consistent understanding of Chubu Electric's safety measures, commented, "Just because you have designed (such measures) does not mean it is alright to go ahead with the restart."

Even though the procedure for restarting the plant may be proceeding smoothly, the danger of its location remains -- as does the feeling of unease among nearly all local residents.

Last month, as part of safety planning measures, the Shizuoka Prefectural Government simulated an automobile evacuation of the approximately 860,000 residents living within the UPZ. The exercise -- while revealing the necessity for traffic regulations -- was described by only four cities in the survey as having been helpful.

Iwata Mayor Osamu Watanabe was critical of the simulation, commenting, "The exercise was based upon mere bureaucratic calculations, and completely downplayed the psychological factors among residents, such as panic."

Chubu Electric applied for safety inspections of the Hamaoka plant's No. 4 reactor in February this year. At this time, only the four cities located within the 10-kilometer radius of the plant that had already entered into a safety agreement with the power company were privy to a detailed explanation of what was occurring.

The other seven municipalities accused the utility of "giving insufficient information," and in March they began pressing the company to include them in the safety agreement. Concrete discussions on a safety deal began in April.

May 21, 2014

## Court ruling emphasises importance of safety

### Ruling says plant operator too optimistic

[http://www3.nhk.or.jp/nhkworld/english/news/20140521\\_42.html](http://www3.nhk.or.jp/nhkworld/english/news/20140521_42.html)

The Fukui District Court took issue with the operator's evaluation of maximum ground motion at the Ohi plant in the event of an earthquake .

Utilities nationwide project maximum seismic motion at each nuclear plant. Facilities must be designed to withstand that shock.

Kansai Electric Power Company based designs at the Ohi plant on seismic motion of up to 700 gals.

The court ruling points out that in a period of under 10 years, there have been 5 cases of facilities nationwide hit by tremors exceeding projections.

It says Kansai Electric is optimistic in ruling out the prospect for a mega quake exceeding projected levels in an earthquake-prone country.

The ruling says ground motion lower than 700 gals could lead to a simultaneous loss of power and water used to cool reactors, leading to a serious accident.

The ruling finds fault with some of the plant's structures. It says storage pools for spent nuclear fuel lack strength to prevent leaks of radioactive substances. It says if power and cooling water supplies were lost, a damaged pool could leak.

**The ruling criticizes Kansai Electric for relying on an optimistic view that accidents could rarely occur, rather than putting priority on human safety.**

May 28, 2014

## Agreement on evacuation in case of an accident at Shimane plant

### 3 prefs agree on nuclear accident evacuation

[http://www3.nhk.or.jp/nhkworld/english/news/20140528\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20140528_32.html)

The governors of Shimane, Hiroshima and Okayama prefectures in western Japan have signed an agreement to effectively evacuate residents in the event of an accident at the Shimane Nuclear Power Plant.

The plant's Number 2 reactor is surveyed by Japan's Nuclear Regulation Authority to see if its safety measures meet new standards.

The central government ordered municipalities within 30 kilometers of nuclear power plants to review their disaster control measures in case of accidents.

To prepare for such an accident, Shimane and its neighboring prefectures Hiroshima and Okayama drew up the cooperation agreement -- the first of its kind at the prefectural level.

The agreement says that of about 400,000 people living within 30 kilometers of the Shimane plant, 270,000 must take refuge outside the prefecture.

The deal stipulates each of the 3 prefectures' roles in evacuating the residents.

Shimane would be responsible for screening evacuees for radiation and decontaminating them, as well as paying for evacuees' acceptance by Hiroshima and Okayama.

The agreement states that Hiroshima and Okayama would work with their municipalities in accepting evacuees.

May 30, 2014

## Up to 29 hours to evacuate around Sendai plant

### Evacuation of 30-km radius of Sendai plant to take up to 29 hours

<http://mainichi.jp/english/english/newsselect/news/20140530p2g00m0dm010000c.html>



KAGOSHIMA, Japan (Kyodo) -- The Kagoshima prefectural government said Thursday it estimates it would take about 29 hours for most of the people living within 30 kilometers of the Sendai nuclear power plant to evacuate by car in case of a serious nuclear accident.

The estimate was released at a time when Kyushu Electric Power Co.'s Sendai complex is considered to be the closest to being allowed to restart among all of Japan's commercial nuclear power plants now shut down for safety checks.

The prefectural government said the projection is basically in line with a target stipulated in Japan's new nuclear-disaster mitigation guidelines compiled after the 2011 Fukushima nuclear disaster, which state that residents are to flee to areas outside the 30-km zone within 24 hours after an evacuation order is issued.

The estimate was based on an assumption that authorities tried first to focus on evacuating about 5,000 residents living within the 5-km area, but about 40 percent of people living in the 5-30 km zone started to flee from their homes at their own initiative.

Of a total 13 scenarios considered, the prefectural government found the evacuation of 90 percent of about 210,000 residents within the 30-km area would take the longest time when they cannot use the Minami-Kyushu expressway. The time needed was 28 hours and 45 minutes.

If traffic is guided at traffic-jam points at main roads, the evacuation time would be the shortest at nine hours and 45 minutes.

The prefectural government, however, did not assume cases in which all the people within the 30-km zone panic and start to evacuate without an order.

Japan has revised its nuclear-disaster mitigation guidelines in the wake of the Fukushima Daiichi nuclear power plant disaster, expanding areas that need special preparations to a 30-km radius of a plant from the previous 10 km.

### **Evacuation times estimated for nuclear plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140530\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20140530_05.html)

Japan's southwestern prefecture hosting a nuclear power station has released evacuation estimates for residents in case of a nuclear accident at the plant.

The Sendai plant in Kagoshima Prefecture is currently offline and undergoing government safety screening as a key step toward resuming operations.

Prefectural officials used computer modeling to calculate how long it would take for about 210,000 people living within 30 kilometers of the plant to evacuate by car.

The officials forecast evacuation times for 90 percent of the residents to travel outside the 30 kilometer radius from the plant.

The various simulations include the status of main roads, the number of evacuees in each car, and weather conditions. The results indicate that the smoothest evacuation will take 9 hours 15 minutes. That's if each car carries 4 people and traffic is guided at crowded intersections.

In contrast, the least smooth evacuation will take 28 hours 45 minutes. This scenario has each car carrying only 2 people and the nearby expressway is impassable.

Kagoshima officials say state guidelines dictate that it should not take more than 24 hours to evacuate people from areas predicted to experience a certain level of radiation.

They say the simulations show that most of the residents in such zones will be able to evacuate within the target time.

However, an expert says the evacuations could take longer than the simulations suggest. This is because there are additional challenges involved, such as how to move those in need of assistance.

June 7, 2014

## Oops, forgot

### **Japan failed to report 640 kg of nuclear fuel to IAEA**

<http://www.japantimes.co.jp/news/2014/06/07/national/japan-failed-to-report-640-kg-of-nuclear-fuel-to-iaea/#.U5Ntiyji91s>

Kyodo

Japan failed to include 640 kg of unused plutonium in its annual reports to the International Atomic Energy Agency in 2012 and 2013, in what experts are terming an “inappropriate omission.”

The stock is part of mixed plutonium-uranium oxide (MOX) fuel stored in a reactor that was offline during this period, and was thus deemed exempt from IAEA reporting requirements, said an official at the Japan Atomic Energy Commission.

Experts warn that Japan's reporting does not reflect the actual state of unused plutonium that could be diverted for nuclear weapons. The unreported amount is enough to make about 80 nuclear bombs.

The official said, "There is also no problem in terms of security against nuclear terrorism."

"From the safeguards point of view, this material is still unirradiated fresh MOX fuel regardless of its location," former IAEA Deputy Director General Olli Heinonen said. "If it has indeed not been irradiated, this should be reflected in the statements."

In March 2011, the MOX fuel was loaded into the No. 3 reactor of Kyushu Electric Power Co.'s Genkai nuclear plant in Saga Prefecture during a regular checkup. It was removed two years later because the reactor has remained idled since the Fukushima nuclear crisis.

When Japan reported to the IAEA in 2012 that it had 1.6 tons of unused plutonium at reactors nationwide as of the end of 2011, down from 2.2 tons the previous year, it excluded the 640 kg. The amount reported a year later remained at 1.6 tons.

The fuel has been kept unused in a fuel pool since March 2013.

Japan is subject to rigorous international monitoring, as it possesses the largest amount of plutonium among nonnuclear weaponized nations, with more than 44 tons extracted from spent fuel and reprocessed for reuse under its nuclear fuel cycle policy.

The unreported plutonium was first reported by Kakujoho, a nuclear information website headed by nuclear policy analyst Masafumi Takubo.

Tatsujiro Suzuki, former vice chairman of the Japan Atomic Energy Commission and a professor at Nagasaki University, said the commission had overlooked the matter and therefore "should make efforts to improve" its reporting.

June 8, 2014

## **Japan fails to include 640kg of unused plutonium in report to IAEA**

<http://mainichi.jp/english/english/newsselect/news/20140608p2g00m0fp010000c.html>

TOKYO (Kyodo) -- Japan has failed to include 640 kilograms of unused plutonium in its annual report to the International Atomic Energy Agency in 2012 and 2013 in what experts say is an inappropriate omission.

The plutonium concerned is part of the plutonium-uranium mixed oxide fuel placed at the time in an offline reactor and is considered as being used and hence exempt from reporting to the IAEA, said an official at the governmental Japan Atomic Energy Commission.

[...]

## **Another quake in N-E Japan**

### **M5.2 quake jolts northeastern Japan**

<http://mainichi.jp/english/english/newsselect/news/20140608p2g00m0dm002000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 5.2 jolted northeastern parts of Japan on Sunday afternoon, the Japan Meteorological Agency said.

The 2:24 p.m. quake originated around 70 kilometers underground on the southern coast of Iwate Prefecture, the agency said.

The quake registered intensity 4 on the Japanese seismic scale of 7 in parts of Miyagi Prefecture.

June 12, 2014

## **Akio Matsumura on Fukui ruling**

## **Landmark Court Ruling Puts Safety First in Japan, Olympics Should Do the Same**

<http://akiomatsumura.com/2014/06/landmark-court-ruling-puts-safety-first-in-japan-olympics-should-do-the-same.html>

*by Akio Matsumura*

A district court in Japan has ruled that the two Oi nuclear reactors cannot be restarted by the Kansai Electric Power Company, citing structural deficiencies. The Fukui District Court said in its ruling, according to an editorial in the Mainichi Times:

“Individuals’ personal right to protect their lives and livelihoods are of the highest value under the Constitution. The court then concluded that ‘it would be only natural to suspend nuclear plants if they pose specific risks of danger -- though it would be an extreme argument to say the existence of such plants is impermissible under the Constitution.’”

Until this ruling, Japan’s federal government and legal system had made decisions in favor of strengthening its economy and minimizing imports. This court ruling emphasized caution and prioritized human and environmental health above trade balances.

Summarizing further, the Japan Times wrote:

The crucial point of the ruling is its contention that it is inherently impossible to determine on scientific grounds that an earthquake more powerful than assumed in the operator’s worst-case scenario would not happen. It noted that since 2005, four nuclear power reactors around the country have experienced quake shocks more powerful than the maximum level anticipated on their sites. It is “groundless optimism” in this quake-prone country that such a temblor would never hit the Oi plant, the ruling stated.

We will have to wait and see whether Japan respects the Fukui Court’s decision or proceeds with its planned restarts.



I have often heard from Japanese opinion leaders that the 2020 Tokyo Olympic Games are vital to boost the GDP and morale of Japan and its people. Like the court, I say that ensuring the safety of our world class athletes is more important than bringing business opportunities to Tokyo.

It is fortunate that there are looking on who worry about the health safety of athletes at the Tokyo Olympic Games in the context of the global environment and human welfare. In a previous article I introduced Dr. Helen Caldicott's letter to Mr. Thomas Bach, president of the International Olympic Committee, urging the IOC to assemble an independent assessment team of biomedical experts.

On May 16, 2014, Dr. Caldicott received an official response from Mr. John Coates, vice president of the International Olympic Committee and chairman of the IOC's Coordination Commission:

"The health and safety of the athletes at the Games is a top priority for the International Olympic Committee (IOC) and as Chairman of the IOC's Coordination Commission - the body responsible for overseeing the Tokyo 2020 Olympic Games for the IOC - you can rest assured that I will do my utmost to ensure that the athletes are able to compete in a safe and secure environment during the Tokyo Games...

From their answers, it is clear that the Japanese authorities are implementing a number of important measures to protect their citizens..."

The Japanese report in annex opens by saying, “A wide range of stringent tests are being conducted with regard to health risks associated with radiation by several related government ministries and agencies.”

Of course, the reports and monitoring have had no independent verification. Mr. Coates and the rest of the IOC are entirely dependent on Japanese information in their evaluation of Japan’s preparations and the challenges they face in cleaning up the Fukushima accident.

In the context of this exchange, I would like to introduce the opinion of Dr. Scott Jones, a retired career naval officer. He was qualified as a nuclear weapons delivery pilot and served in the Korean and Vietnam Wars. Dr. Jones was also Executive Assistant to Senator Claiborne Pell, a former Chairman of the Senate Foreign Relations Committee and, in the words of Vice President Biden, a “leader in the fight to stop the spread of nuclear weapons”.

Dr. Jones writes:

*Increasingly the horrible but predictable consequences of the earthquake and tsunami have been made more unbearable for the citizens of Japan and now the world.*

*When lives are at stake, the greatest protection for a politician is to be able to affirm that political decisions involving health are being made in faithful accord with the best available scientific and medical knowledge.*

*This clearly has not been the case concerning Fukushima, and there is a procedure available to correct this situation. It is overdue for the government of Japan, the International Olympic Committee, all supportive governments of Japan and the future of the Olympic system, to stop and seek independent engineering, medical and scientific assessments of what has happened, what can and must be done to protect life in Japan and the world.*

*This directly addresses current and future concerns about the health of Japanese children and elderly, and will erase any ambiguity about the safety of Olympic athletics and global visitors to the anticipated 2020 Olympic Games.*

Indeed, an independent review would be in line with the spirit of the Fukui district court’s findings.

The safety of the local Japanese and the world’s top-notch athletes should not rely on an evaluation undertaken in “groundless optimism”, but with caution and scrutiny. Mr. Coates and the International Olympic Committee can make sure of this by making the Tokyo Olympic Games conditional on an independent and international review of the challenges — scientific, engineering, and medical— around the Fukushima nuclear site and of Japan’s progress in addressing them. Until such a review is ordered, the IOC should be less confident that our athletes will find a “safe and secure environment during the Tokyo Games.”

June 15, 2014

## Quake in N.E. Japan

### **M5.5 quake hits northeastern Japan**

<http://mainichi.jp/english/english/newsselect/news/20140615p2g00m0dm003000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 5.5 hit northeastern parts of Japan in the early hours of Sunday, the Japan Meteorological Agency said.

The 2:31 a.m. quake originated around 90 kilometers below ground in the southern part of Iwate Prefecture, the agency said.

The quake registered an intensity of 4 on the Japanese seismic scale of 7 in Morioka and Kamaishi in Iwate Prefecture as well as in Hachinohe and Hashikami in Aomori Prefecture.

## Design "safer" nuclear fuel?

### **Fukushima No. 1 meltdowns stir industry quest for 'safer' nuclear fuel**

<http://www.japantimes.co.jp/news/2014/06/15/national/science-health/wake-fukushima-disaster-industry-explores-accident-resistant-fuel/#.U54btCji91s>

#### ***Designs by U.S. researchers offer hope of heading off future meltdowns***

AP

ATLANTA – In response to the disaster at the Fukushima No. 1 plant, the U.S. government dramatically increased funding to develop tougher protective skins for nuclear fuel, hoping to spur innovation in designs that had not changed much in years.

While the Department of Energy was spending \$2 million on fuel designs before the March 2011 meltdowns, the funding reached as much as \$30 million afterward.



Now scientists at multiple institutes are in the middle of developing designs that could start finding their way into test reactors as early as this summer, followed by larger tests later on.

The goal is to create nuclear fuel that is more resistant to damage and melting in extreme situations and less prone to a chemical reaction that makes its metal wrapping brittle and produces explosive hydrogen gas.

If researchers succeed, their work could give plant workers more time to keep an accident from spiraling into a meltdown that releases massive amounts of radiation. The work is no cure-all to prevent accidents, but it is a way of reducing risk.

“It’s basically buying time for the reactor,” said Andrew Griffith, the Energy Department’s director for fuel cycle research and development. “It’s basically an insurance policy.” Scientists in the U.S. government- and industry-funded efforts are experimenting with multiple solutions before narrowing their focus on the most-promising technologies.

Nuclear fuel has remained similar for decades.

Uranium dioxide is compressed into a pellet about the size of a fingertip. Those pellets are stacked into fuel rods up to 4.5 meters long and placed in a tube, called cladding, made from zirconium alloy.

That metal cladding resists corrosion in a reactor, holds up against heat and serves as a barrier that keeps radioactive elements in place without cutting too much into the energy produced by a nuclear plant.

Nuclear fuel is supposed to withstand accidents, but the catastrophe at the Fukushima No. 1 plant on March 11, 2011, shows how it can fail when pushed to extremes.

Tsunami crashed over the plant’s seawall and disabled the electrical gear needed to run the reactors’ cooling systems. When the cooling systems and backups stopped working, the reactors overheated.

As water levels dropped, the metal cladding around the fuel reacted with steam and oxidized, producing hydrogen gas. Scientists blame that escaping hydrogen gas for causing multiple explosions that damaged the facility.

The same reaction also produces heat, further contributing to the extreme temperatures that allowed fuel to melt and radioactive byproducts to escape. Some oxidation occurs during a reactor's normal operation, but nowhere near the levels that occur in an extreme accident.

Scientists are considering a range of improvements.

Some are proposing fundamental departures.

The Electric Power Research Institute is experimenting with cladding made of molybdenum, which maintains its strength in higher temperatures than the zirconium alloys do. A stronger metal will do a better job keeping fuel from melting and slumping in a reactor in extreme accidents.

Engineers at the University of Tennessee are trying to coat cladding with ceramics that can withstand higher temperatures than existing cladding, while Westinghouse Electric Co. hopes to use silicon carbide as the base for its cladding in future fuel designs.

Quicker improvements may come from changing existing fuel designs.

Brent Heuser, a nuclear engineer at the University of Illinois, received U.S. funding to develop coatings that could be applied to existing cladding to prevent the chemical reaction that produces hydrogen, heat and weakens the cladding.

His team is also interested in "self-healing" fuel, which has added materials that migrate to the surface of a fuel rod during an accident and form a protective coating.

Any change must make financial sense. Adding safety improvements costs more money. That's not attractive to cost-conscious utilities since the existing cladding already meets safety rules.

To get around the economic obstacles, some researchers hope to offset the extra cost of the protection measures by combining them with fuel that produces more energy before it must be replaced. Others, like Heuser, say regulators will need to force utilities to use the safer products.

"It's often where businesses and regulatory bodies butt heads," said Heuser.

June 17, 2014

## Fukushima Olympics

### **Ex-PM Mori wants Fukushima included in Tokyo Olympic torch relay course**

<http://mainichi.jp/english/english/newsselect/news/20140617p2a00m0na004000c.html>

FUKUSHIMA -- The chairman of the organizing committee for the 2020 Tokyo Olympic and Paralympic Games said on June 17 that his panel will consider making Fukushima Prefecture a key segment of the Olympic torch relay course as part of efforts to address harmful rumors about radioactive contamination.

Former Prime Minister Yoshiro Mori, who heads the organizing committee for the 2020 Tokyo Olympics, also said his panel will extend support for a program to invite foreign athletes to have training camps in Fukushima.

At the Fukushima Prefectural Government's office earlier on the same day, Mori and Fukushima Gov. Yuhei Sato exchanged documents confirming redoubled mutual cooperation toward the success of the Tokyo Olympic Games. In his meeting with Mori, Gov. Sato called for the 2020 Olympic torch relay to include the coastal region of the prefecture where the crippled Fukushima No. 1 Nuclear Power Plant is located.

On the proposed torch relay in Fukushima, Mori said, "We would like to thoroughly study whether that is possible."

June 18, 2014

## What about handicapped and elderly people? What about patients?

### **Survey: Nuclear evacuation plans scarce for those most in need**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201406180063](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201406180063)

More than 90 percent of hospitals around six nuclear power plants seeking to restart their reactors have not worked out evacuation plans for a possible nuclear accident, an Asahi Shimbun survey showed.

About 75 percent of social welfare facilities, including nursing homes, in the same areas also lack such plans, the survey found.

The central government has ordered municipalities near nuclear facilities to compile more efficient evacuation plans after many elderly people and patients died during the prolonged and chaotic evacuation process when the disaster at the Fukushima No. 1 nuclear power plant unfolded in March 2011.

However, some municipalities say the government's demands are unrealistic. For example, some local officials say they simply do not have the personnel or equipment available for such a large-scale task.

In addition, completion of such evacuation plans--even for people facing the most difficulty in fleeing on their own--is not a requirement for restarting a nearby nuclear reactor.

The survey, conducted through prefectural governments late last month, covered hospitals and social welfare facilities in 52 municipalities located within a 30-kilometer radius of six nuclear plants: Tomari in Hokkaido; Takahama and Oi, both in Fukui Prefecture; Ikata in Ehime Prefecture; Genkai in Saga Prefecture; and Sendai in Kagoshima Prefecture.

The utilities operating these plants have applied to the Nuclear Regulation Authority for safety checks that could lead to a restart of their idled reactors. The safety check process has proceeded the furthest at these six facilities among all nuclear plants in Japan.

According to the survey, only 18, or 8 percent, of the 217 hospitals in the 52 municipalities have worked out their own evacuation plans, while 204, or 25 percent, of the 823 social welfare facilities have done so.

Although the 52 municipalities have worked out evacuation plans for all residents, prefectural governments have called on hospitals and social welfare facilities to work out their own evacuation plans as part of overall disaster preparedness plans for municipalities.

The Sendai nuclear power plant is expected to become the first to receive the green light to restart its reactors. In the nine municipalities around the plant, only one of the 87 hospitals and six of the 153 social welfare facilities have completed their evacuation plans.

In 2012, the central government demanded all municipalities within 30 km of a nuclear plant compile evacuation plans. Previously, municipalities within a radius of 8 to 10 km of a plant faced that requirement.

The government told the municipalities to pay particular attention to elderly and other people who may require additional assistance during evacuations.

One major hurdle in compiling evacuation plans is how to secure buses or other means of transportation in the event of a nuclear disaster.

For example, the Shiga prefectural government estimates that 500 buses would be required to relocate elderly and other people in need of special assistance.

But the prefecture has found it difficult to ensure that it alone can provide that number of buses, so it plans to ask the central government for help.

Municipal governments have expressed complaints about the orders.

“It is impossible for us to work out evacuation plans as we are told by the central government,” said an official of Tomari village in Hokkaido.

The central government has set up a working team to help municipalities compile evacuation plans, but it bears no responsibility for any failure to complete them.

The NRA is checking whether reactors or other facilities at the nuclear power plants meet new safety standards. The completion of municipal governments’ evacuation plans is not required for NRA approval to restart the reactors.

In the United States, the Nuclear Regulatory Commission bans the operation of nuclear power plants unless plans are in place that can guarantee the safe evacuation of nearby residents.

Former industry ministry official Shigeaki Koga explained why the Japanese central government will not assume responsibility for working out local evacuation plans.

He said if the government accepted such responsibility, it would become impossible to build nuclear power plants in the country.

(This article was written by Shinichi Sekine and Asako Myoraku.)

## 30-km radius not safe enough

### **EDITORIAL: Abe needs to get priorities right before reactor restarts**

<http://ajw.asahi.com/article/views/editorial/AJ201406180054>

The central government has required all prefectural and municipal entities within a 30-kilometer radius of nuclear power plants to have their own emergency response plans.

This was one of the lessons of the 2011 Fukushima nuclear disaster.

Does it follow then that areas outside the 30-km radius are safe?

That is anything but the case, as indicated by estimates of predicted dispersions of radioactive materials made by local governments around nuclear power plants.

For example, the border of Hyogo Prefecture is at least 40 kilometers from the offline Oi and Takahama nuclear power plants in Fukui Prefecture, which operator Kansai Electric Power Co. intends to restart at an early date.

But the Hyogo prefectural government used data on past weather patterns to estimate what levels of radiation thyroid glands would be exposed to in the event of Fukushima-class disasters taking place at both the Oi and Takahama plants. It found that the doses could exceed the international benchmark of 50 millisieverts in seven days, even on Awajishima island, which is 150 kilometers from the nuclear power plants. Individuals exposed to radiation levels of 50 millisieverts or higher are advised to take iodine tablets to protect their thyroid glands from radiation.

Depending on wind direction, similar scenarios were also indicated for the cities of Kobe, Amagasaki, Nishinomiya and elsewhere along the Hanshin belt between Osaka and Kobe.

Simulations by the Shiga prefectural government found that, in a worst-case scenario, a Fukushima-class disaster at Oi could spread radioactive materials exceeding the international benchmark into the airspace above Lake Biwako, more than 40 kilometers away. Similarly affected areas could include parts of Kyoto and Osaka prefectures.

What do these estimates signify?

### **RISK OF THYROID CANCER**

A major accident at a nuclear power plant releases radioactive substances, which will eventually contaminate surface areas. Under international standards, evacuations and decontamination work would be required in areas where an individual's total body irradiation level exceeds 100 millisieverts in seven days. In the event of a Fukushima-class disaster, the areas requiring evacuation and decontamination work would be roughly within a 30-km radius of the stricken plant.

**But winds carry and spread airborne radioactive plumes further away.** In areas where radioactive iodine in the atmosphere has not been sufficiently rarefied, thyroid glands are exposed to radiation and the risk of thyroid cancer rises, especially among small children. It is vital to put a system in place to speedily discern the spread of radioactive plumes and determine the right timing for people to take iodine tablets.

**One other factor that must be taken into consideration is that when it rains along the plume's track, concentrations of cesium and other radioactive materials that have long-term effects will fall to the ground and contaminate the soil. When that happens, temporary measures will not be sufficient.**

In the Fukushima Prefecture village of Iitate, about 40 km from the crippled Fukushima No. 1 nuclear power plant, rain fell just when a radioactive plume reached the community. Before the nuclear disaster, the villagers were in the process of building a self-sustaining farming operation in the belief that everyone could live happily. The village had not benefited financially from the nearby nuclear power plant. But since the disaster, the entire village has remained off-limits to the villagers.

The Union of Kansai Governments, whose members come from seven prefectures, including Osaka and Kyoto, has called on the central government to issue comprehensive guidelines on measures that should

be taken in areas outside the 30-km radius from nuclear power plants, based on studies by local governments.

Viable evacuation plans, along with prepared guidelines, need to be in place before issuing the order to evacuate. Otherwise, chaos can result. This was made clear from statements given to the government's Investigation Committee on the Accident at the Fukushima Nuclear Power Stations by Tetsuro Fukuyama, a former deputy chief Cabinet secretary who was in charge of the evacuation process during the Fukushima crisis.

Acknowledging the need for such guidelines, the central government states in its nuclear disaster response policy outline that the Nuclear Regulation Authority will consider defining the extent of evacuation zones and other matters. However, the NRA has yet to embark on this task in earnest, mainly because it is engaged in safety screenings ahead of nuclear power plant restarts.

## **LEGITIMATE DEMAND**

With nuclear power generation, there is no such thing as "absolute safety"--no matter how stringent the regulations. If any nuclear power plant is to be put into operation, the very least that must be done is to get an accurate grasp of the areas that will be affected in the event of a disaster.

By the same token, residents of those areas need to be informed of the exact nature of the risks they face and the steps that will be taken in the event of a nuclear accident.

But to assume the central government understands this concept would be asking a lot. Even though municipalities that host nuclear power plants will not be the only ones affected in a nuclear accident, the government's Strategic Energy Plan states that the central government "will strive to obtain the understanding and cooperation of people associated with the municipalities that host nuclear power plants" before restarting offline reactors. Here, we can see right through the government's intent to press for the resumption of operations by taking advantage of those local governments' dependence on nuclear power plants for their fiscal and employment needs.

After the onset of the Fukushima disaster, Shiga Governor Yukiko Kada came up with the term "higai jimoto" to denote all local governments, not just those which host nuclear power plants, that could be seriously affected by a nuclear accident. Kada demanded the central government recognize them all as affected parties and allow them to get involved in the process before restarting nuclear plants. This is a legitimate demand. In reality, however, it is still only the municipal and prefectural governments hosting nuclear power plants that have any real say.



Toshiki Kudo, mayor of Hakodate in Hokkaido, who filed a lawsuit demanding the suspension of construction of the Oma nuclear power plant in neighboring Aomori Prefecture, warned that the same old "safety myth" of nuclear power generation will be perpetuated if the project is allowed to have its way.

"It will be game over for our country if the government stops trying its hardest to win the understanding of the people," Kudo said.

At a recent news conference on Japan's right to collective self-defense, Prime Minister Shinzo Abe reiterated that the government will "protect lives of the Japanese people." If he is genuinely committed to saving people's lives, he obviously needs to look squarely at all local communities that could be seriously affected by a nuclear disaster before he can even begin to argue in favor of restarting idle nuclear reactors.

June 20, 2014

## Public briefing about safety measures re. Shimane plant

### Residents briefed on Shimane plant safety measures

[http://www3.nhk.or.jp/nhkworld/english/news/20140620\\_11.html](http://www3.nhk.or.jp/nhkworld/english/news/20140620_11.html)

Residents near the Shimane nuclear power plant in western Japan have been briefed on the ongoing government safety check at the plant's No. 2 reactor and on safety measures. The safety screening is a prerequisite for restarting reactors.

The briefing was held on Thursday in the city of Yonago in Tottori Prefecture. The city is within 30 kilometers of the plant in neighboring Shimane Prefecture. Officials of Chugoku Electric Power Company, the plant operator, spoke to about 60 locals.

The officials explained the new safety measures, including the installation of a filtered ventilation system. The system is designed to reduce pressure in the reactor containment vessel while limiting emissions of radioactive materials in an emergency.

The officials also said they are conducting a survey of faults around the plant.

One resident asked for measures against possible hydrogen explosions at the plant, drawing lessons from the 2011 accident at the Fukushima Daiichi plant. Another called for the use of renewable energy instead

of nuclear power.

The president of a local residents' association said he felt anxious as Chugoku Electric Power apparently expressed the intention to restart the reactor in its first briefing to residents. He said his community will demand further briefings once the reactor is to go back online.

The Tottori Prefectural Government had requested the meeting after the utility applied in December for a government screening with an eye to restarting the No. 2 reactor.

Similar meetings are scheduled in 16 areas in Yonago and another city in the prefecture near the plant by mid-August.

Chugoku Electric Power supplies energy to consumers mainly in five prefectures including Shimane and Tottori.

June 25, 2014

## Operators not serious enough about safety, says NRA

### Japan's nuclear regulator criticizes utilities

[http://www3.nhk.or.jp/nhkworld/english/news/20140625\\_36.html](http://www3.nhk.or.jp/nhkworld/english/news/20140625_36.html)

Japan's nuclear regulators have criticized the country's nuclear plant operators as not serious enough about improving plant safety. They say the operators' applications for safety checks need improvement.

The Nuclear Regulation Authority's safety check is a prerequisite for the government to allow an operator to bring its reactors online. At present, all reactors in Japan remain offline.

Toyoshi Fuketa is a NRA commissioner and an expert on nuclear plant facilities. In a meeting on Wednesday, he sharply criticized the operator of a spent nuclear fuel reprocessing plant in Aomori, northern Japan.

Fuketa said the company tried to seek regulators' opinions or reactions without presenting fully prepared documentation when filing its application.

Commissioner Kunihiro Shimazaki is in charge of earthquake and tsunami safety. He said an application that failed to reflect the results from earlier screenings is affecting the efficiency and speed of the latest screening.

Shimazaki is believed to have been referring to the Tokai Number 2 nuclear power plant in Ibaraki, north of Tokyo.

A similar criticism was voiced last week at the NRA meeting for the screening of the Higashidori nuclear

plant in Aomori.

NRA Chairman Shunichi Tanaka said an attitude that simply aims to satisfy screening criteria will not help improve safety. He called on all Japanese operators to submit better applications.

June 28, 2014

## Changing Olympics venues

### Olympics: IOC mulls Tokyo 2020 Olympic venue changes

<http://mainichi.jp/english/english/newsselect/news/20140628p2g00m0dm015000c.html>

TOKYO (Kyodo) -- International Olympic Committee concluded its first commission meeting for the Tokyo 2020 Olympics on Friday, with IOC vice president John Coates stressing the importance of making improvements, if any, to the venue plans at an early stage.

Coates and other members of the commission were visiting Tokyo for the first time since the Japanese capital won the right to host the Summer Games last September. The IOC, under its new president Thomas Bach, is hoping to rein in costs of future Olympics.

The organizing committee for the 2020 Olympics has recently started to scrutinize the initial plan of locating the majority of venues within an 8-kilometer radius of the Athletes' Village due to **concerns over costs**.

**Coates specifically discussed changing the location of the proposed venue for the canoe slalom event because of environment concerns.** But he added that changes to the venue plan would have to be approved by the respective international federations.

"Our advice was, well, if there's that opposition (for the canoe slalom event), look for another site," Coates said. "And they have identified another site on the same island quite proximate and the stage we're at now is we've recommended that there'll be discussions with the International Federation."

"There will be no changes unless there is a full sign-off from the international federations," Coates said.

Organizing committee chief Yoshiro Mori said, "We received a high evaluation even for a the progress of our preparations. It was an inspiring kickoff for the whole team."

**The coordination commission, which will visit again next year, will make 10 trips to Japan before Tokyo hosts the Games to give advice on the best way to stage the Games.**

Tokyo, which hosted the 1964 Olympics, won the right to host the 2020 Games with a plan touting the city's safety and superior infrastructure. Of the 33 competition venues, 28 have been designated within 8 km of the Olympic Village, which will be built on reclaimed land in Tokyo Bay.

July 2, 2014

## Evacuation plans very "sloppy"



Kyushu Electric Power Co.'s Sendai Nuclear Power Plant in Satsumasendai, Kagoshima Prefecture, expected to go back online as early as September, is seen in January. Residents in the neighboring city of Ichikikushikino have complained that government plans on their mass evacuation in the event of a nuclear disaster have missed key points. | KYODO

## Evacuation plans stir fresh doubts over Japan nuclear restarts

by Kentaro Hamada

Reuters

ICHIKIKUSHIKINO, KAGOSHIMA PREF. – Keen to restart nuclear power plants three years after the Fukushima disaster, authorities may face an additional hurdle in securing approval — coming up with a cogent evacuation plan in the event of new accidents.

The problem has come into focus as procedures for the first proposed restart enter the home stretch in Ichikikushikino, a town 5 kilometers from Kyushu Electric Power Co.'s Sendai plant.

The government, facing the first summer in 40 years without nuclear power, is fielding complaints from residents who say key points have been missed in planning for any mass evacuation.

Local authorities approve restarts, but Ichikikushikino, as it is only a neighboring town, does not get any final say in the matter. That didn't stop more than half its 30,000 residents from signing a petition opposing it.

"The (evacuation) plan itself is very sloppy, just slotting bits and pieces into a manual without giving any consideration to the special features of the area," said Zenyu Niga, a Buddhist monk whose mountainside temple overlooks the Sendai plant.

Residents say a narrow road designated as an evacuation route regularly floods at high tide. A day care center has no evacuation plan at all. One evacuation center is a run-down building with limited space.

Niga, who was attending a public meeting where officials explained evacuation plans, said he feared the region, served by three congested highways, could face panic in an evacuation.

"I feel very worried after seeing what happened in Fukushima," he said.

An earthquake, tsunami and multiple meltdowns at the Fukushima No. 1 plant in March 2011 marked the worst nuclear disaster since Chernobyl in 1986. Some 150,000 residents left surrounding areas.

Sixty people died, mainly elderly patients herded onto buses from hospitals and nursing facilities. Others ended up in areas found to have higher radiation levels than the places they left.

Stricter safety standards have been put in place and Prime Minister Shinzo Abe's government, keen to cut imports of costly fossil fuels, is pushing for reactor restarts.

All 48 reactors were eventually taken offline amid public outrage at the handling of the crisis. Nine utilities have since applied to restart 19 reactors.

Sendai, chosen to lead the revival, could secure approval for its two units as early as September. With the governor of Kagoshima Prefecture and the mayor of the plant's host city of Satsumasendai strongly in favor, a green light is all but certain.

But skepticism in Ichikikushikino and other coastal towns, which do not share in the jobs and government subsidies linked to the nuclear industry, could delay the restart.

Ichikikushikino's city council promised last week to submit the residents' petition to the governor. And there may be a reassessment or revision of plans drawn up by local officials to have residents pile into cars and buses and drive along highways to pre-assigned evacuation centers.

Any town within a 30-km radius of a nuclear plant must create an evacuation plan, while schools, hospitals and elderly care facilities are asked to set their own emergency plans.

Kiyoko Kojima, 75, who works at a day care center 13 km from the plant, said the facility, with 60 children in its charge, had no evacuation plan.

"I haven't heard anything about an emergency plan. I'm not even sure whether we wait for the parents to come pick up the children or we evacuate right away," she said.

In the event of an accident at Sendai, more than 210,000 residents would have to be moved.

In Ibusuki, a town 80 km south of Ichikikushikino, one reception center is a run-down, two-story building for 90 evacuees, providing only 2 sq. meters per person.

Researchers say local governments lack expertise and resources to make preparations.

"There aren't enough people at the state and local level doing simulations of evacuation plans," said Hirotada Hirose of Tokyo Woman's Christian University.

"This plan is based on a set of highly unrealistic assumptions and I have to question whether this is a true simulation."

National regulators are unlikely to step into the breach.

The newly established Nuclear Regulation Authority is bogged down in regulatory hearings since laying down stringent guidelines for plant restarts a year ago. Officials reject any notion of a more active role in emergency planning.

Even supporters of restarts have doubts about the plans.

Toyoji Fukuzono, 61, a retired fisherman, questioned a route requiring 1,600 residents to travel down a narrow road that routinely floods at high tide.

"We just want you to consider actual road conditions," he told a town hall meeting. "You know there's regular flooding and landslides."

July 3, 2014

## Safety of nukes "remains far from certain in this country"

### Questions about nuclear safety

<http://www.japantimes.co.jp/opinion/2014/07/03/editorials/questions-nuclear-safety/#.U7ZO5LHi91s>

Nearly 40 months since the triple meltdowns at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant in March 2011, steps taken so far by the Abe administration show that it is intent on pushing nuclear power generation. Even as opinion polls indicate that a majority of people would like to see Japan shed its dependence on nuclear power, the administration appears to be trying to turn the clock back to before 2011, refusing to learn from the lessons of the ongoing Fukushima nuclear crisis.

By pushing his pro-nuclear power policies, Prime Minister Shinzo Abe and officials of his administration are making light of the sufferings of people whose communities and properties have been contaminated by radioactive fallout from the crippled Tepco plant.

In Fukushima alone, more than 120,000 people remain displaced from their homes, and more than 1,600 people have died due to health problems, some triggered by stress, since the evacuation began — more than the number of Fukushima residents who died as a direct result of the 3/11 earthquake and tsunami.

Environment Minister Nobuteru Ishihara recently came under fire for telling reporters that money will eventually settle negotiations with Fukushima residents in municipalities around the Tepco plant concerning the construction of intermediary storage facilities for radiation-contaminated soil, ash and other substances on their land.

While Ishihara eventually apologized for the statement, such a gaffe appears to reflect the Abe administration's lack of sensitivity toward the sentiments of people whose lives remain disrupted by the disaster.

The Abe administration also recently picked a scientist from the “nuclear village” — the closely knit community of people from the nuclear power industry, bureaucracy and academia as a new commissioner of Japan's nuclear watchdog. This appointment was duly approved in the ruling coalition-dominated Diet. The move raised doubts about the credibility of the Nuclear Regulation Authority, which was created on the basis of lessons learned from the Fukushima nuclear disaster, and added to suspicions that the prime minister, in his push to restart the nation's idled nuclear power plants, is trying to turn back the clock to the old ways of nuclear power administration.

Satoru Tanaka, a professor at the University of Tokyo specializing in the nuclear fuel cycle and treatment of nuclear waste, is too close to the nuclear power establishment to make objective judgments on the safety of nuclear power plants. A former head of the Atomic Energy Society of Japan, Tanaka served as an official of the Japan Atomic Industrial Forum from 2010 to 2012 and received nearly ¥3 million in rewards for screening research projects subsidized by Tepco Memorial Foundation from fiscal 2007 to 2011.

Tanaka's appointment as an NRA commissioner runs counter to the principle that the authority to supervise the safety of nuclear power plants should have no ties to the parties that promote nuclear energy.



The NRA is currently screening plans by nine power companies to restart a total of 19 reactors at 12 nuclear power plants across the country under safety criteria that were updated in the wake of the Fukushima crisis.

The Abe administration says Japan now has one of the world's most stringent safety standards for nuclear power plants, requiring operators to ensure that the plants will withstand the impact of severe natural disasters such as earthquakes, and plans to restart the reactors once they receive the NRA's safety clearance.

Experts point to the deficiency in Japan's nuclear safety system in which preparations for the evacuation of residents around power plants in the event of severe accidents have been left in the hands of local governments and are outside the jurisdiction of the NRA and the central government. There is no guarantee that adequate evacuation measures will be worked out for accidents that result in a large-scale release of radioactive substances into the environment.

From the viewpoint of people who could potentially be affected by severe accidents, the safety of nuclear power plants remains far from certain in this country.

July 5, 2014

## Earthquake (5.9 magnitude) shakes N.E. Japan

### Aftershock from 2011 quake jolts northeast Japan

[http://www3.nhk.or.jp/nhkworld/english/news/20140705\\_11.html](http://www3.nhk.or.jp/nhkworld/english/news/20140705_11.html)

An earthquake with a magnitude of 5.9 has jolted Iwate Prefecture, northeastern Japan. It's believed the quake is an aftershock of the massive temblor that hit the region in 2011.

The earthquake struck Miyako City at around 7:42 AM on Saturday.

The Meteorological Agency says its focus was 49 kilometers beneath the Pacific Ocean off the coast of Iwate Prefecture.

It says the quake measured 5-minus on Japan's intensity scale of zero to 7.

The quake registered an intensity of 4 in other cities in the region, including Hachinohe City in Aomori Prefecture.

The earthquake was also felt in wide areas from Hokkaido in the north to Kanto in the east and Niigata

Prefecture, on the Sea of Japan coast.

The quake triggered no tsunami.

This was the first recorded earthquake with an intensity of minus-5 to hit Iwate Prefecture since a magnitude-7.3 quake struck on December 7, 2012.

Saturday's quake caused a power outage that temporarily suspended services of the Tohoku Shinkansen bullet train.

### **Summary of Fukui Court order (re.restart of Oi reactors)**

A very insightful vision of the risks involved in restarting nuclear power plants (in Japan especially).

<http://fukushima-is-still-news.over-blog.com/article-residents-file-injunction-against-restart-123780765.html>

### **Summary of the court order issued by the Fukui Court regarding the restart of the Oi reactors.**

Translation by Greenpeace Germany.

<https://docs.google.com/file/d/0Bx3334ZjJANiSEM4d1RQTXpPY00/edit>

<http://www.greenpeace.de/sites/www.greenpeace.de/files/publications/fukui-akw-urteil-engl-juni2014.pdf>

July 7, 2014

### **Nuclear power not safe, says Koizumi**

#### **Ex-PM Koizumi criticizes nuclear plants restart**

[http://www3.nhk.or.jp/nhkworld/english/news/20140707\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20140707_33.html)

Former prime minister Junichiro Koizumi has again criticized the Japanese government's plan to restart nuclear power plants.

The government will restart idled nuclear plants once their safety is confirmed by the Nuclear Regulation

Authority. Koizumi condemned the policy in a speech in Tokyo on Monday, saying that it defies logic.

He said nuclear power is not safe, and that it is the most expensive form of power. Koizumi added that evacuation routes have not been secured, and anti-terrorism measures are insufficient.

Nuclear reactors in Japan currently remain idled following the March 2011 nuclear accident in Fukushima.

Koizumi said the government maintains that the reactors will be restarted because new safety guidelines that have been drawn up are the strictest in the world. But he claims there is no way the plants can be restarted.

Koizumi also mentioned that it is unreasonable for the government to ask communities to create a disposal site for highly radioactive nuclear waste that is generated after restarting the reactors.

He said the government should instead ask the public to cooperate in exchange for ending its reliance on nuclear power.

## Two nuclear plants in typhoon path

<http://thinkprogress.org/person/abreiner/>

By Andrew Breiner

*"Once In Decades' Typhoon Approaches Japan, Two Nuclear Power Plants"*

Typhoon Neoguri reached sustained winds of over 150 miles per hour Sunday, making it a 'super typhoon,' as it continued to gain force and approach Japan's southern and western islands. It is likely to cause heavy rains and strong winds across much of Japan, and **threaten at least two nuclear power plants in its path.**

Heavy rains from another storm have already been setting records in Kyushu, Japan's southern and southwestern-most major island, where Neoguri is likely to make first landfall. **Kyushu is home to two nuclear plants,** which have been shut down for safety in advance of the storm's arrival. A nuclear plant on nearby Shikoku island has been shut down for safety, as well. After making landfall, the storm is expected to move north through virtually all of Japan, losing strength as it travels up the island.

Fukushima, in the east, is likely to be spared. The 2011 meltdown of the Fukushima Daiichi plant focused attention on the vulnerability of nuclear plants, as radioactive water continued leaking for over a year after a tsunami and earthquake hit. Tokyo is also likely to miss Neoguri's worst.

Japan Meteorological Agency warned that Neoguri would be an “extremely intense” storm by Tuesday, and issued emergency warnings for the southern islands, calling the super typhoon a “once in decades storm.” While powerful and dangerous, Neoguri will not be as strong as Typhoon Haiyan, which killed thousands, left hundreds of thousands homeless and caused a major humanitarian crisis in the Philippines last year. Haiyan may have had the strongest sustained cyclone winds on record, at 195 mph.

Neoguri is currently as strong as a category 4 hurricane and it appears likely to hit Kyushu as a category 3, with winds between 111 and 130 mph.

Though the occurrence of a particular typhoon can't be linked directly to climate change, a warmer climate can make storms much more destructive. Mr. Michel Jarraud, World Meteorological Organization Secretary-General, said Typhoon Haiyan “tragically demonstrated” the “heavier precipitation, more intense heat, and more damage from storm surges and coastal flooding” from global warming. As climate change contributes to accelerated sea level rise along the U.S. East Coast, scientists warn that storm surges and coastal flooding will become more destructive, as was demonstrated in the aftermath of Superstorm Sandy.

While the current projected path has Neoguri missing Okinawa, it will pass close enough to cause hurricane-force winds on the island. Okinawa has a major U.S. military presence, including dozens of military bases and thousands of service members and their families. Okinawa is already experiencing heavy rain and winds, and it is expected to get worse. In a statement on the air base's website, Brig. Gen James Hecker, 18th Wing commander at Kadena Air Base called Neoguri the most dangerous typhoon to hit Okinawa in 15 years. “I can't stress enough how dangerous this typhoon may be when it hits Okinawa,” he said. “This is not just another typhoon.”

July 8, 2014

## For a safer reactor?

### Tech minister promotes 'safer' nuclear reactor

[http://www3.nhk.or.jp/nhkworld/english/news/20140708\\_14.html](http://www3.nhk.or.jp/nhkworld/english/news/20140708_14.html)

Japan's science and technology minister Hakubun Shimomura has inspected a test nuclear reactor that is said to be safer than conventional light-water reactors.

Shimomura visited the experimental high-temperature gas-cooled reactor at the Japan Atomic Energy Agency's key facility in Ibaraki Prefecture, north of Tokyo, on Monday.

The government decided in April as part of its new energy policy to promote research and development of this type of reactor.

High-temperature gas-cooled reactors use helium to cool their core. Their fuel kernels are coated with ceramics, which are highly resistant to heat.

They are said to have lower chances of meltdowns or hydrogen explosions than light-water reactors, which are cooled with water and use metals to coat nuclear fuel.

After his tour, Shimomura told reporters that his ministry will promote further development of high-temperature gas-cooled reactors.

He said the ministry wants to make effective use of Japan's technology and will provide objective explanations to the public.

## Sendai safety measures presented to media

### Safety measures at Sendai plant shown to media

[http://www3.nhk.or.jp/nhkworld/english/news/20140708\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20140708_33.html)

Kyushu Electric Power Company has invited the media to observe the safety measures at a nuclear plant in Kagoshima Prefecture, southwestern Japan.

The Sendai plant is preparing to meet the tougher safety standards introduced last year after the Fukushima Daiichi accident caused by a huge earthquake and tsunami.

Journalists on Tuesday saw the 10-meter-high walls that have been built to protect the equipment for pumping up seawater to cool reactors in emergencies. They also viewed the 3-meter-high concrete breakwaters now under construction outside the protective walls.

Coolant tanks are covered with steel plates and concrete to prevent them from being hit by objects blown by strong winds or tornadoes. Fences are also being installed around the tanks.

The utility plans to complete the work by the end of the month.

A senior official of the company, Satoru Kojo said they will complete the tasks quickly so that the plant's operations can be resumed as soon as possible.

Japan's Nuclear Regulation Authority is expected to prepare a draft safety assessment report for the plant next week. Reactors have to meet the stricter safety standards before they can be restarted.

## Utilities' safety measures not safe enough

### Safety screenings on nuke plants lagging behind due to utilities' lax measures

<http://mainichi.jp/english/english/newsselect/news/20140708p2a00m0na008000c.html>

It's been a year since a new set of regulatory standards for nuclear power plants in Japan were implemented in the wake of the Fukushima nuclear disaster, but safety screenings by the Nuclear Regulation Authority (NRA) on idled reactors awaiting reactivation are lagging behind schedule.

Nine power companies have thus far applied for safety screenings on a total of 19 reactors at 12 nuclear power stations. However, screenings have been delayed, especially for boiling water reactors that are of the same type as those at the stricken Fukushima No. 1 Nuclear Power Plant. While the NRA had planned to give the green light on July 9 for the No. 1 and No. 2 reactors at Kyushu Electric Power Co.'s Sendai nuclear plant in Kagoshima Prefecture -- making them the first reactors eligible for reactivation since the new regulatory standards came into effect on July 8 last year -- the NRA has decided to shelve the final decision until sometime after July 16.

Under the new regulatory standards, power companies are required to take measures against severe accidents -- especially those triggered by earthquakes and tsunami. Such measures had been left up to each utility before the Fukushima nuclear disaster that occurred in March 2011. The prolonged screenings are largely attributable to slack measures taken by the utilities, including no improvements in their measures against quakes and tsunami. This resulted in the NRA having to hold 122 meetings for safety reviews so far.

Compared to boiling water reactors, screenings on pressurized water reactors have relatively been proceeding smoothly. Out of the 12 such reactors at six power stations that underwent application procedures for screenings, the NRA decided in March to prioritize reviews on the Sendai nuclear plant on the grounds that its operator was the first to finalize its quake and tsunami projections for the facility. The NRA also approved the quake and tsunami projections for Kansai Electric Power Co.'s Takahama No. 3 and No. 4 reactors.

The NRA decided to postpone a conclusion on the Sendai nuclear plant's No. 1 and No. 2 reactors because NRA Chairman Shunichi Tanaka and other officials determined that further scrutiny was necessary before giving the stamp of approval to them. Since procedures such as public comment and local consent are necessary after the NRA gives the green light, reactivation of the Sendai plant is expected to take place sometime after October.

As for boiling water reactors, utilities have applied for screenings on seven reactors at six nuclear plants, but the screenings have been stalled due to the severe requirements such as obligations to install filtered venting systems to reduce emissions of radioactive materials in the event of a nuclear disaster.

Also awaiting screenings are the No. 4 reactor at Chubu Electric Power Co.'s Hamaoka nuclear plant, which is feared could be affected by a Nankai Trough earthquake and tsunami, as well as the Higashidori nuclear plant, which experts believe lies on active faults. Reactivation of these reactors is deemed to be difficult for the time being.

At a regular press conference on July 2, NRA Chairman Tanaka criticized power companies, saying, "They lack awareness and fail to take seriously the fact that the Fukushima nuclear disaster has happened," suggesting that utilities are to blame for the lagged screenings.

July 10, 2014

## Bracing for Neoguri

### Fukushima Daiichi plant bracing for storm

[http://www3.nhk.or.jp/nhkworld/english/news/20140710\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20140710_34.html)

The operator of the damaged Fukushima Daiichi nuclear plant is bracing for severe tropical storm Neoguri as it moves toward eastern Japan on Thursday.

Workers at the complex are pumping out water accumulated in barriers surrounding storage tanks for radioactive water to prevent it from overflowing the barriers.

When heavy rain hit the plant last summer the water often overflowed.

Workers are also placing weights on large cranes to stop them toppling over. The cranes are used to clear debris surrounding the reactor buildings.

Officials at Tokyo Electric Power Company say that pumping up groundwater and the construction of an underground frozen wall will be carried out from Thursday night through Friday as scheduled.

They added that the work may be suspended when a warning is issued, depending on the situation.

## Typhoon continues to the east

### Typhoon heads east after hitting Kyushu region

<http://mainichi.jp/english/english/newsselect/news/20140710p2g00m0dm035000c.html>

TOKYO (Kyodo) -- Heavy rain continued to hit wide areas of Japan and affected traffic Thursday due to a typhoon that made landfall on the southernmost main island of Kyushu earlier in the day and headed east, the Japan Meteorological Agency said.

Since the agency issued its first special alert on Monday warning that the season's eighth typhoon, Neoguri, could be the strongest in decades, three people have died and 50 people sustained injuries, according to a tally by Kyodo News as of 6 p.m. Thursday.

After lashing the islands of Okinawa, the typhoon made landfall near the city of Akune, Kagoshima Prefecture in southern Kyushu, shortly before 7 a.m. It made landfall again in southern Wakayama Prefecture in western Japan at about 6:30 p.m., the agency said.

The typhoon is expected to move east on the Pacific side of the Japanese archipelago and will be downgraded to an extratropical cyclone by Friday afternoon.

The typhoon brought heavy rain to western Japan. In Seiyu, Ehime Prefecture on the smallest main island of Shikoku, a 77-year-old man was confirmed dead on Thursday after being found collapsed in a waterway.

On Wednesday, a 12-year-old boy died after being hit by mudflow in Nagiso, Nagano Prefecture, while an 83-year-old man died in Koriyama, Fukushima Prefecture, after falling into a river.

Heavy rain pounded many areas in central and western Japan, with hourly rainfall reaching 71.0 millimeters in Sukumo, Kochi Prefecture, in the southern Shikoku region -- a record for July, agency officials said.



Hourly rainfall reached 59.5 mm in Minami, Tokushima Prefecture, in the eastern Shikoku region and 53.0 mm in Motosu, Gifu Prefecture, in central Japan.

As of 7 p.m. Thursday, the typhoon was located near the city of Shingu in southern Wakayama Prefecture. It was moving east-northeast at 40 kilometers per hour, with its atmospheric pressure at 988 hectopascals at its center and wind gusts of up to 126 kph.

Due to the typhoon, airlines canceled more than 200 flights linking Kyushu and Shikoku with other parts of Japan.

Japan's two major airlines, Japan Airlines Co. and All Nippon Airways Co., canceled 47 and 31 flights, respectively. Japan Air Commuter Co., which is affiliated with JAL, canceled 86 flights linking remote islands with the country's main islands.

Railway services of bullet trains were also affected, including those operated by Kyushu Railway Co., West Japan Railway Co. and East Japan Railway Co. or JR East.

JR East suspended bullet train services between Fukushima and Yamagata stations in northeastern Japan for Thursday due to the heavy rain from a day before.

July 12, 2014

## Quake and minor tsunami hit Fukushima

### Minor tsunami hit Fukushima coast after strong quake

[http://www.japantimes.co.jp/news/2014/07/12/national/minor-tsunami-hits-fukushima-area-strong-quake/#.U8Gpq7Hi\\_IU](http://www.japantimes.co.jp/news/2014/07/12/national/minor-tsunami-hits-fukushima-area-strong-quake/#.U8Gpq7Hi_IU)

AFP-JJI

Minor tsunami hit Tohoku's coastline early Saturday, including in a city near the crippled Fukushima nuclear plant, after a strong 6.8-magnitude earthquake struck off the Pacific coast.

There were no immediate reports of damage, however, and authorities lifted all advisories roughly two hours later.

The manager of the Fukushima No. 1 nuclear plant said no abnormal activity was reported after the quake, which a Meteorological Agency official said appeared to be an aftershock of the Great East Japan Earthquake on March 11, 2011.

According to the United States Geological Survey, the quake struck around 129 km (79 miles) east southeast of Namie, Fukushima Prefecture, at 4.22 a.m.

Many of the communities along the coastline covered by Saturday's advisories are still recovering from the March 2011 quake and tsunami, which killed more than 18,000 people and triggered a triple core meltdown at the Fukushima No. 1 power plant.

Minor tsunami as high as 20 cm (7.8 inches) were observed in Ishinomaki, Miyagi Prefecture, and Ofunato, Iwate Prefecture, the Meteorological Agency said.

Tidal waves of 10 cm were also logged in the city of Soma, about 40 km (25 miles) north of the Fukushima No. 1 plant, the agency said. Soma was severely damaged by the natural and man-made disasters.

At least three people were injured by the quake in Fukushima, said NHK, including a 68-year-old woman who suffered a broken leg.

The tsunami advisories for Miyagi, Fukushima and Iwate prefectures warned that waves of up to 1 meter (3.3 feet) were possible.

"We have lifted the tsunami advisory, but do not approach coastlines for now as there may be a change in sea levels," an agency official said.

Fukushima No. 1 manager Tokyo Electric Power Co. said there were no reports of abnormal activity at the plant early Saturday, but the sea levels near it cannot be gauged because the tsunami monitoring system was destroyed on 3/11.

"We have not seen any damage or any change in radiation gauges after the quake," Tepco spokesman Masahiro Asaoka said.

"Today's operations have yet to start but we ordered workers to evacuate to high places," he said. "Our temporary breakwater that was newly built is high enough to block a 1-meter tsunami."

The tsunami that hit the poorly protected plant in March 2011 measured about 14 meters, overwhelming its seawall, which was only about 10 meters high at the time.

The city of Kamaishi, Iwate Prefecture, issued an evacuation advisory to some 12,000 residents, as did other authorities in the region, officials said. All were later lifted.

The Fukushima No. 1 plant lost all electrical power after the quake and tsunami three years ago. After the waves swamped its cooling systems, three reactor cores melted, tainting much of the area with radiation in the worst nuclear disaster since Chernobyl.

Tens of thousands of people were evacuated from around the plant and the decommissioning process is expected to take decades.

In the meantime, the utility is struggling to handle a huge — and growing — volume of radiation-contaminated water that poses the next stage in the crisis.

On Friday, the crippled plant was skirted by tropical storm Neoguri, which had been a typhoon until wading through west Japan. Workers had scrambled to secure the plant from the storm, but Neoguri had little impact after heading into the Pacific.

## **Quake hits Fukushima**

[http://www3.nhk.or.jp/nhkworld/english/news/20140712\\_06.html](http://www3.nhk.or.jp/nhkworld/english/news/20140712_06.html)

An earthquake struck Fukushima and other northeastern Japanese prefectures early Saturday morning.

The quake occurred at about 4:22 AM Japan time.

The Meteorological Agency says the focus is 10 kilometers beneath the Pacific Ocean off Fukushima Prefecture.

The magnitude was estimated at 6.8.

The jolt measured 4 on Japan's seismic intensity scale of zero to 7.

The agency issued a tsunami advisory for Fukushima, Miyagi and Iwate prefectures.

The agency observed a 20 centimeter high tsunami at 5:19 AM in Ishinomaki City, Miyagi Prefecture but lifted its tsunami advisory about two hours later.

Tokyo Electric Power Company says there are no reports of irregularities at the Fukushima Dai-ichi Nuclear Power Plant that was crippled by a major earthquake and tsunami in 2011.

July 16, 2014

## No evacuation plans for nuclear accidents

### Nursing facilities, hospitals lack evacuation plans for nuclear disasters

<http://mainichi.jp/english/english/newsselect/news/20140716p2a00m0na007000c.html>

Many nursing care facilities and hospitals located within Japan's nuclear power plant evacuation zones have yet to establish evacuation plans, the Mainichi Shimbun has learned.

The finding comes as the Nuclear Regulation Authority on July 16 approved the new safety features of Sendai Nuclear Power Plant in a step toward its restart.

Of the 875 nursing care facilities in Japan located within a 30-kilometer radius of a nuclear power plant, 621, or 70 percent, do not have any predetermined destinations for evacuation in the event of a nuclear crisis. Likewise, 633 hospitals, or 75 percent of the 838 hospitals within 30 kilometers of a nuclear plant, have not secured evacuation facilities.

The Mainichi Shimbun sent questionnaires between June and July to 21 prefectural governments and 125 municipalities within 30 kilometers of a nuclear plant, excluding the 10 municipalities where evacuation orders remain in place due to the ongoing Fukushima No. 1 Nuclear Power Plant crisis. All but one of the surveyed municipalities responded.

The government's new nuclear emergency guidelines, set after the onset of the Fukushima disaster, require evacuation plans for residents within 30 kilometers of a nuclear plant -- expanded from the original designation of eight to 10 kilometers from a plant. According to the new rules, prefectural and municipal disaster plans require operators of institutions and hospitals to devise evacuation strategies.

The Mainichi survey showed that 40 percent of the surveyed municipalities -- a total of 49 -- had yet to lay down evacuation plans. In Miyagi, Ibaraki, Niigata, Shizuoka and Toyama prefectures, where 40 of these municipalities are located, none of the 377 care facilities and 412 hospitals had secured places for their staff and patients to evacuate.

Municipalities in Kagoshima Prefecture, where the Sendai nuclear plant is located, and Aomori, Ishikawa, Shiga, Ehime and Nagasaki prefectures have finished designing evacuation plans for residents, but with a few exceptions, care facilities and hospitals have not found evacuation sites.

Officials with the Kagoshima Prefecture city of Satumasendai, which hosts the Sendai plant, said that because areas beyond the 30-kilometer radius of the plant are under the jurisdiction of other municipalities, the city cannot organize evacuation sites for care facilities and hospitals on its own. Ehime Prefecture officials likewise said that evacuation plans are too difficult for facility operators to organize on their own, and that it's an issue that requires the cooperation of various administrative offices.

Meanwhile, seven prefectures including Fukui, where Kansai Electric Power Co.'s Oi Nuclear Power Plant is located, said that evacuation sites for all of its 231 care facilities and 202 hospitals have been secured.

However, care facilities and hospitals in Shimane Prefecture and some parts of Hokkaido will first be evacuated to hotels and other accommodation facilities designated by the respective municipalities, and from there, prefectural officials will be responsible for coordinating their relocation.

Ken Takagi, the secretary general of the Reconstruction Committee of the Fukushima Ward Council on Social Welfare -- who at the time of the Fukushima disaster's onset operated a day service for the elderly in the Fukushima Prefecture town of Naraha, and evacuated with clients to Ichihara, Chiba Prefecture -- knows firsthand the difficulties of evacuation.

"In reality, it's hard for care facilities and hospitals to find evacuation sites on their own, because it imposes a heavy burden on host facilities," Takagi says. "The national government should listen to the needs of local communities and take the initiative so that the elderly and hospital patients can be evacuated smoothly to facilities similar to their own."

### **Lack of evacuation destinations poses problem for care facilities near nuclear plants**

<http://mainichi.jp/english/english/perspectives/news/20140716p2a00m0na012000c.html>

## **As nuclear plant heads towards reactivation, disaster evacuees fear repeat of history**

<http://mainichi.jp/english/english/features/news/20140716p2a00m0na014000c.html>

### **Be prepared to use judgement and be flexible**

#### **Judgement key in serious nuclear accident**

[http://www3.nhk.or.jp/nhkworld/english/news/20140716\\_17.html](http://www3.nhk.or.jp/nhkworld/english/news/20140716_17.html)

Before the Fukushima nuclear crisis, Japanese believed a serious accident would never happen at the country's nuclear plants. A potential loss of power to cool the reactors was inconceivable.

Safety guidelines at the time left responsibility for dealing with accidents up to each individual plant operator.

Under the new guidelines, the Nuclear Regulation Authority requires operators to prepare for severe accidents in advance.

When automatic safeguards are no longer operating, human judgment and quick response becomes key.

Workers may have to operate power and pumping devices manually.

Power utilities have detailed manuals several thousand pages long for plant workers to use in emergencies. They also hold emergency response drills.

Experts say it is essential that the utilities train their workers to respond flexibly to unexpected situations. They say nurturing the judgment capabilities of plant chiefs is even more crucial.

### **Evacuation plans: An ongoing issue**

#### **Disaster plans outstanding issue in plant restart, critics say**

<http://www.japantimes.co.jp/news/2014/07/16/national/disaster-plans-outstanding-issue-plant-restart-critics-say/#.U8bd5LHi91s>

by Kazuaki Nagata

The Sendai nuclear plant in Kyushu may have cleared a major hurdle toward its restart on Wednesday, but anti-nuclear groups warn it's far from ready to go online.

Improved evacuation plans and a better understanding of the possible impact of a volcanic eruptions in southern Kyushu are among the unresolved issues for Kyushu Electric Power Co., the operator of the plant in Kagoshima Prefecture, critics say.

“A major flaw (with the evacuation plans) is that there is no specific plan to evacuate people who are deeply dependent on others, such as the elderly, those in the hospital or at care facilities, and where to take them,” the Citizens’ Commission on Nuclear Energy, a Tokyo-based anti-nuclear group, said in a statement released after the Nuclear Regulation Authority effectively gave the green light for restarting the Sendai plant.

Speaking at a news conference, group member Kanna Mitsuta said the plans were especially inadequate regarding the evacuation of people living farther than 10 km from the plant.

Citing a simulation by a private firm, she said the Kagoshima Prefectural Government’s evacuation plan is not based on a detailed model of the possible radioactive fallout from the plant. Residents forced to evacuate to the southeast might be exposed, depending on the prevailing winds, she said.

Anti-nuclear groups also faulted the NRA for not adequately evaluating the impact of potential volcanic activity on the two reactors it evaluated for safety.

According to Kyushu Electric, there are 39 volcanos, including Sakurajima, within a 160-km radius of the Sendai plant. The activists say a huge eruption could bring disaster to the plant.

Kyushu Electric has insisted that there is only a very small chance of a major eruption in the near future.

But a group that monitors the NRA said it appears no volcano experts were consulted throughout the review process and such experts have been quoted in the media as saying it’s hard to predict when a volcano will erupt.

### **Back to the future with Japan's nuclear village**

<http://m.greenpeace.org/international/en/high/news/Blogs/nuclear-reaction/back-to-the-future-with-japans-nuclear-villag/blog/49931/>

Blogpost by **Kazue Suzuki**

The decision of the Nuclear Regulatory Authority (NRA) to approve the draft assessment for the two Sendai nuclear reactors in Kyushu is a clear and dangerous signal that Japan's nuclear village – industry, regulators and government – is deliberately and cynically ignoring the lessons of the Fukushima nuclear disaster. The approval of the assessment is the first step in restarting the Sendai reactors.

The two Sendai reactors have been shutdown since 2011. These are old reactors – 29 and 30 years respectively. Nuclear reactors, no matter what age, are inherently at risk of an accident, but the older the plant the greater the risk. A car designed four decades ago and operating for 30 years in no way can meet safety standards of the present day. Fukushima has shown again that nuclear reactors have the potential to devastate a region and its people.

The citizens of Japan know that the Sendai reactors are not safe to operate. When the NRA announced it was putting the reactors at the top of the list for review, 6000 people demonstrated in Kagoshima near the plant. According to an opinion poll by Greenpeace Japan, less than 10% of the people living within a 30km radius of the Sendai nuclear power plant think they can evacuate without being exposed to radiation if a severe nuclear accident were to occur.

Last week, Aira city councillors voted 23 to 1 against restarting the Sendai reactors. Aira, in Kagoshima Prefecture, lies only 30km from the Sendai nuclear reactors, and is a designated evacuation point in the event of a severe accident.

The regulators have accepted the view of Kyushu Electric Power Company, the Sendai operator, that the seismic and tsunami risks are low at the site. This is despite a warning from independent seismologists that the science of earthquakes is such that it is not possible to predict where an event will happen and its strength. No tsunami sea wall has been built at the Sendai plant.

The major issues of concern at Sendai include: no effective evacuation plan for the populations in the region, no functioning emergency response centre protected against radiation, and the failure of Kyushu Electric and the NRA to conduct robust assessments on volcano risk.

Like many nuclear plants in Japan, Sendai is close to an active volcano – in this case, Sakurajima, one of the most active volcanoes in the world, and one of the few that are at present in constant (persistent) activity. This volcano is about 70km from the Sendai nuclear plant. Ongoing, typical activity ranges from strong strombolian (low-level eruptions) to large ash explosions every 4-24 hours.

The Sakurajima volcano is of major concern to many experts, including vulcanologists, with the threat that in the event of an eruption, it could take out offsite electric power to the plant. The same eruption could clog the air intakes of diesel generators, the only source of ongoing power if the offsite power is



taken out of service. A station blackout was what led to the loss of cooling function at Fukushima and the subsequent reactor meltdowns.

The nuclear village in Japan was one of the principal reasons why the Fukushima accident took place. While the Abe administration and nuclear industry may prefer to forget the lessons of 2011 the people of Japan will not. They are determined to stop the planned restart of Japan's nuclear reactors.

As we approach the one year birthday of no nuclear-powered electricity in Japan (the last of the country's remaining 48 reactors were shutdown in September 2013) it is clear that Japan can function as a society without risking catastrophic nuclear accidents, while rapidly growing its renewable energy sector and embracing efficiency. The NRA decision may make headlines around the world but Japan is a long long way from restarting its large nuclear program – and the people of Japan are determined to make its future energy path a very different one from its past.

*Kazue Suzuki is a Nuclear and Energy Campaigner at Greenpeace Japan.*

July 19, 2014

## Q & As about reactor safety screenings

### **News Navigator: How are nuclear plants determined to be safe?**

<http://mainichi.jp/english/english/perspectives/news/20140719p2a00m0na006000c.html>

The Mainichi answers common questions readers may have about the safety of nuclear power plants as Sendai Nuclear Power Plant takes a step toward reactivation as it clears a provisional safety assessment.

**Question:** It appears Kyushu Electric Power Co.'s Sendai Nuclear Power Plant is going to be the first power station to clear the Nuclear Regulation Authority's new safety regulations. How are nuclear power plants evaluated for safety?

**Answer:** Based on lessons from the Fukushima nuclear disaster, in July 2013 the Nuclear Regulation Authority (NRA) created new safety regulations that incorporate beefed-up earthquake and tsunami measures, as well as anti-terrorist measures. The NRA assesses whether power companies' safety measures meet the new criteria, and if they do, the power station is given a green light.

Q: Is a power plant safe if it meets the criteria?

A: For the first time, the new regulations require that measures against severe disasters such as core meltdowns be implemented in all nuclear plants. If the contents of the criteria are updated, they will be retroactively applied to existing nuclear plants.

However, even NRA Chairman Shunichi Tanaka has said, "We cannot say that a disaster will never happen. The regulations cannot guarantee safety."

Q: So there's no way to make nuclear plants completely safe?

A: In the case of Fukushima No. 1 Nuclear Power Plant, there were many opportunities to adopt anti-disaster measures, but both the regulatory authorities and plant operator Tokyo Electric Power Co. kept postponing doing so. Since the disaster broke out, however, the idea of "defense in depth" has gained more traction, and more efforts are being made to prevent disasters, and to keep damage at a minimum in the case of a disaster.

Q: What is defense in depth?

A: It's a way of thinking about the safety of nuclear facilities set forth by the International Atomic Energy Agency. Safety measures are divided into five successive levels of defense, based on the degree of an incident's severity. Regulatory authorities in Japan prior to the Fukushima disaster only required utilities to clear three levels of defense: prevention of abnormal operation and failures, control of abnormal operation and detection of failures, and control of accidents within the design basis. Since the Fukushima disaster, however, level 4 -- control of severe plant conditions including prevention of accident progression and mitigation of severe accident consequences -- has been made part of the criteria. However, level 5 -- mitigation of radiological consequences of significant off-site releases of radioactive materials -- has not been incorporated into the NRA's regulations.

Q: Is the NRA responsible for checking everything?

A: In the safety assessments, the NRA primarily checks the facilities to determine whether level 1-4 measures have been implemented. Meanwhile, the Basic Act on Disaster Control Measures stipulates that municipalities lay out their respective disaster prevention plans, so they are not subject to the NRA's assessment.

Q: Not having an evacuation plan is worrisome, isn't it?

A: The NRA's new guidelines on nuclear disasters expanded the zone required to have evacuation plans in place from areas within eight to 10 kilometers of a nuclear power plant to areas within up to 30 kilometers of a nuclear plant. Many municipalities have yet to finish devising evacuation plans according to the new rules, and this is recognized as a problem. Even if nuclear power plants are given the go-ahead according to new NRA regulations, we still face many challenges in ensuring the safety of the plants. (Answers by Shimpei Torii, Science & Environment News Department)

## Koizumi: NRA's decision (Sendai) "absurd"

### **Ex-PMs Koizumi, Hosokawa criticize NRA for deeming nuke plant meets safety standards**

<http://mainichi.jp/english/english/newsselect/news/20140719p2a00m0na005000c.html>

Former prime ministers Junichiro Koizumi and Morihiro Hosokawa have criticized the government's Nuclear Regulation Authority (NRA) for deeming that the Sendai Nuclear Power Plant in Kagoshima Prefecture meets the new safety standards.

Koizumi described as "absurd" the NRA's approval of a draft report stating that the No. 1 and 2 reactors at the power station, run by Kyushu Electric Power Co., meet the new safety standards set following the Fukushima nuclear accident in 2011. The move effectively paved the way for the utility to restart the reactors.

Hosokawa also urged the NRA to reconsider its decision. "I'd like those concerned to make an appropriate decision before something irreparable occurs."

The two former prime ministers made their remarks in talks with reporters after attending a July 18 Tokyo session of the Japan Assembly for Nuclear Free Renewable Energy that they head.

July 21, 2014

## What about Kashiwazaki-Kariwa's safety?

## Safety of Niigata power plant worries locals

<http://www.japantimes.co.jp/news/2014/07/21/national/locals-still-concerned-about-safety-of-kashiwazaki-kariwa-nuclear-plant/#.U806qLHi91s>

***Despite improvements, assurances by Tepco, Kashiwazaki-Kariwa facility still cause for concern***

Jiji

KASHIWAZAKI, NIIGATA PREF. – Seven years have passed since the massive Chuetsu Offshore Earthquake hit Niigata Prefecture, but residents around Tokyo Electric Power Co.'s Kashiwazaki-Kariwa nuclear plant still worry about how safe it is.

When the magnitude-6.8 quake struck on July 16, 2007, a transformer at the nuclear plant caught fire and a tiny amount of radioactive substances leaked out.

The plant — the largest nuclear facility in the world — generated no power until four of its seven reactors were brought back online starting in 2009. They were deactivated again for regular inspections and maintenance, and been idle since the Fukushima crisis erupted in 2011.

Ahead of the restart of the reactors, Tepco has applied for safety checks by the Nuclear Regulation Authority. But Niigata Gov. Hirohiko Izumida has maintained a cautious stance, saying, "It's too early to get the reactors back online."

A local organization comprising residents, commerce and industry associations and a citizens' group in the city of Kashiwazaki and the village of Kariwa visited the plant in June and were briefed by Tepco officials on safety measures.

Putting aside the broad issue of whether to allow nuclear power generation, the group regularly holds discussions with Tepco on the plant's safety using data provided by the company and the government.

During the group's visit, Tepco officials tried to win their consent to the restart by stressing that new breakwaters have been built, vehicles with generators and firetrucks have been added, and employees have undergone enhanced training.

Masayuki Sato, the 70-year-old deputy chief of the group, was not won over.

“Although various response measures seem to have been taken, it is hard to predict what kind of disaster will happen,” he said. “No one could (have) forecast the 2007 quake.”

Group chief Yoshiko Arano, 63, however, said she liked some of Tepco’s changes.

“Though it has yet to be seen whether the (anti-earthquake) facilities introduced at the plant can really work, the company’s efforts are clearly seen,” she said.

Asked about his view on restarting the plant, Gov. Izumida always replies that it should come after the Fukushima accident has been fully examined.

After the 2007 temblor, the Niigata Prefectural Government temporarily lost contact with the Kashiwazaki-Kariwa plant’s control room because a damaged door blocked workers from entering.

The prefecture pointed out problems concerning the emergency liaison system at the time of the quake during a meeting with the industry ministry about two weeks later.

In March this year, Izumida told a local disaster prevention meeting that unless the prefectural government highlighted the problems, the Fukushima No. 1 plant would have had no earthquake-proof office, which served as the base to cope with the accident.

“I will keep insisting that it is essential to review Fukushima accident-related problems as problems common to all humankind and take countermeasures,” Izumida said.

July 24, 2014

## Accidents can happen (US report on Fukushima)

### **NAS Fukushima report: Accidents will happen**

<http://america.aljazeera.com/blogs/scrutineer/2014/7/24/nas-fukushima-reportaccidentswillhappen.html>



by Gregg Levine @GreggJLevine

More than three years after the start of the Fukushima crisis, nuclear regulators and industry still lag on implementing upgrades.

If there is one message to take from the National Academy of Sciences report, *Lessons Learned From the Fukushima Nuclear Accident for Improving the Safety of U.S. Nuclear Plants*, released today, it is that accidents can happen, and it is essential for nuclear plant operators, regulators and public safety responders to all have plans for what to do when one does.

The congressionally mandated report, the result of over two years of work, looked at the responses at Japanese nuclear facilities after the Great East Japan Earthquake and tsunami of 2011, and found the outcomes indicate some obvious actions going forward.

Foremost in both the lengthy report and at the press conference with its authors: Emergency managers, regulators, and most pointedly, nuclear plant operators need to pay better attention to what are called “beyond design basis events” (BDBEs).

The nuclear industry will tell you that its reactors are designed with a degree of redundancy — that there are backup systems, should primary essential safety and monitoring equipment fail. But critics ask a follow up: What if the backup systems fail or are inadequate?

This scenario was very much in evidence at Fukushima Daiichi after the March 11, 2011 earthquake. The plant had backup generators to handle the loss of station power triggered by the quake, but those generators were knocked out by the tsunami. At that point, Fukushima's crew was left with no obvious disaster mitigation protocol.

The same could be said for emergency responders, who presented with severely damaged infrastructure, had limited access to the plant, limited tools for monitoring external contamination, and no effective plan to evacuate residents both inside and beyond a previously determined quarantine zone.

These "X+1" scenarios have long been the focus of industry watchdogs, and though the NAS will couch their recommendations in terms of better evaluating risk, the strong emphasis in their report makes clear the risk of these BDBEs has not been adequately assessed.

The report's authors seemed to stress that there exists more and better information on the type of risks to the stability and security of nuclear power plants than is currently considered by operators and regulators. "It is not to say that risks haven't been considered," said one of the report's authors, it is just that the "opportunity exists to expand the breadth and depth of the analysis."

### **The light water paradox**

Take, again, what happened at Fukushima Daiichi.

The disaster has, at its root, something I've previously called "The Light Water Paradox." As I explained in response to a prior Fukushima study:

Return for a moment to something discussed here last summer, The Light Water Paradox: "In order to safely generate a steady stream of electricity, a light water reactor needs a steady stream of electricity." As previously noted, this is not some perpetual motion riddle—all but one of Japan's commercial nuclear reactors and every operating reactor in the United States is of a design that requires water to be actively pumped through the reactor containment in order to keep the radioactive fuel cool enough to prevent a string of catastrophes, from hydrogen explosions and cladding fires, to core meltdowns and melt-throughs.

Most of the multiple calamities to befall Fukushima Daiichi have their roots in the paradox. As many have observed and the latest Japanese report reiterates, the Tohoku earthquake caused breaches in reactor containment and cooling structures, and damaged all of Fukushima's electrical systems, save the diesel backup generators, which were in turn taken out by the tsunami that followed the quake. Meeting the

demands of the paradox — circulating coolant in a contained system — was severely compromised after the quake, and was rendered completely impossible after the tsunami. Given Japan's seismic history, and the need of any light water reactor for massive amounts of water, Fukushima wouldn't really have been a surprise *even if scientists hadn't been telling plant operators and Japanese regulators about these very problems for the last two decades.*

In the case of Japan, Fukushima operator TEPCO did not account for known seismic and tsunami risks, and, even if they had, they still did not have a plan of action for the total station blackout (known as an SBO) — that X+1 scenario or beyond design basis event.

In the months (and even years) after the beginning of the Fukushima crisis, advocates for American nuclear power commonly downplayed the implications of Japan's experience, arguing it was a freak "one-two punch." The NAS report appears to frown on that kind of blinkered assessment. As a case study for U.S. facilities — and the NAS study is meant to inform management of the U.S. nuclear fleet — analysis of the Fukushima disaster says that the earthquake and tsunami were far from unforeseeable, that there were experts that saw it, and that even if that specific chain of events was surprising, the consequences of it should still be considered and prepared for.

Evaluating risk in this more sophisticated (one might even say "honest") fashion led the NAS panel to make several concrete recommendations — or, as the report tends to phrase things, the panel "recommends particular attention" be paid to "improving the availability, reliability, redundancy, and diversity of specific nuclear plant systems." Among them, DC backup power for instrumentation and safety systems, tools for monitoring plant status during an SBO, methods for removing heat, depressurizing reactors and venting built up gases, improved heat, hydrogen and radiation monitoring, and better real-time communications.

All are sound conclusions, and ones that have been more or less echoed in previous studies of the crisis, but the gap between saying "attention must be paid" and seeing activity on the part of nuclear regulators and operators still appears wide.

### **'100 percent failure'**

Case in point: vents.

The GE Mark I Boiling Water Reactor, the design of the damaged reactors at Fukushima Daiichi, and similar Mark IIs, were built with very small containment vessels, making them vulnerable to over-pressurization, and without vents to relieve the pressure in an emergency. This problem was actually recognized by some engineers in the 1970s; still, it took until 1989 for the U.S. Nuclear Regulatory Commission recommended adding the most basic vents to older reactors. (And, even today, one currently operating U.S. reactor — Fitzpatrick in upstate New York — still does not meet those requirements.)



The basic vents were back-fit to the Fukushima reactors prior to the 2011 earthquake.

But well before the 1989 NRC rule, some nuclear watchers, based on observations after the 1979 Three Mile Island accident, suspected the type of vents in the NRC recommendation would not be sufficient in accidents where the nuclear fuel was damaged. So-called “hardened vents,” designed to operate under more adverse conditions, with filtration systems engineered to remove some of the radiation from the released gas, would be necessary to respond quickly and minimize environmental contamination.

There is still some debate on exactly how the vents at Fukushima failed and what role they played in the hydrogen explosions that so severely damaged containment buildings at Daiichi, but there has been little argument that the design modification recommended for all U.S. boiling water reactors failed the test.

The system “demonstrated a 100 percent failure rate for Mark I over-pressurization events,” said Paul Gunter, director of the Reactor Oversight Project at Beyond Nuclear, a nuclear industry watchdog.

The need to retrofit the 23 Mark I and eight Mark II reactors still operating in the U.S. with “sever accident capable” vents and high-capacity filtration systems was a common finding in several post-Fukushima reports. Indeed, just such an upgrade was the firm recommendation of the NRC’s own Japan Lessons Learned Task Force.

But in March 2013, with the Fukushima disaster starting its third year, the Nuclear Regulatory Commission bowed to industry objections, ignored its own task force’s findings and voted 4 to 1 to reject ordering the installation of the robust vents and filtrations systems on the ancient GE reactors.

### **‘Tragic’ lack of independence**

It was an example of “regulatory capture,” said Gunter, which represents the “fundamental problem” with nuclear regulation. “Industry essentially rules the regulators.”

It is a problem the NAS panel seemed to recognize, even if their report failed to recommend any solutions. “The NRC and industry must maintain a strong safety culture,” said Dr. Emilie Roth, a cognitive psychologist and a member of the NAS Fukushima committee, adding that to do this, “the NRC must maintain its independence.”

When asked if these conclusions were based on any specific examples in either Japan or the U.S., Roth said they were not, but restated the necessity of regulators to represent interests separate from those of the nuclear industry.

It is a sentiment shared by industry watchdogs and good government advocates, but it is not a reality according to Gunther. While he praised the NAS for recommending plant regulations take into account BDBEs, he noted that under the current regulatory regime, “plants are not even in compliance with their design basis, let alone beyond design basis” considerations.

It is fine for the NAS report to recommend enhanced risk analysis, said Gunter, but at present regulators make rules based on a cost-benefit analysis keyed to “industry production costs, not to public health and safety.”

As an example, Gunter returned to the vents. In Japan, reactors now seeking to restart must install state-of-the-art vents and filtration systems. Such equipment has already been installed at the Kashiwazaki Kariwa facility, a demonstration, said Gunther, that the technology already exists.

The incestuous nature of government and industry in Japan is much documented, and regulatory capture was oft cited as a contributing factor to the Fukushima crisis. But even in Japan, its Nuclear Regulatory Agency has been able to require a “lessons learned” upgrade that seems beyond the reach of the U.S. NRC.

The story illustrates in detail the problem the NAS report alludes to by impression: A nuclear industry resistant to learning from the past, uninterested in planning for the future, and virtually impervious to oversight.

“It is tragic in a post-Fukushima world,” said Gunter.

July 25, 2014

## **"Think about unthinkable disasters" (US report)**

### **US scholars release report on Fukushima accident**

[http://www3.nhk.or.jp/nhkworld/english/news/20140725\\_14.html](http://www3.nhk.or.jp/nhkworld/english/news/20140725_14.html)

A US report on Fukushima's nuclear accident has pointed out measures that need to be taken in the future to protect residents from a serious nuclear disaster.

The National Academy of Sciences released the report on Thursday. It follows debates by a panel of experts that began in 2012 on the lessons from the Fukushima crisis.

The report notes that poor communication between the central government and local governments, as well as a lack of clear standards about radiation levels that require decontamination, led to public distrust in the government.

It says that the US government and nuclear operators should examine the way information is being given to residents of surrounding communities, as well as means of protecting the ill, elderly, and children.

It also notes that an assessment should be made of the impact of long-term evacuation on the lives of those affected.

The report will be submitted to Congress as a reference for the creation of future safety measures in a nuclear crisis.

### **U.S. Fukushima report: Think about unthinkable disasters**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201407250027>

THE ASSOCIATED PRESS

WASHINGTON--A U.S. science advisory report says Japan's Fukushima nuclear accident offers a key lesson to the nation's nuclear industry: Focus more on the highly unlikely but worst case scenarios.

That means thinking about earthquakes, floods, tsunamis, solar storms, multiple failures and situations that seem freakishly unusual, according to the National Academy of Sciences report released on July 24. Those kinds of things triggered the world's three major nuclear accidents.

"We need to do a soul searching when it comes to the assumptions" of how to deal with worst case events, said University of Southern California engineering professor Najmedin Meshkati, the panel's technical adviser. Engineers should "think about something that could happen once every, perhaps 1,000 years" but that's not really part of their training or nature, he said.

"You have to totally change your mode of thinking because complacency and hubris is the worst enemy to nuclear safety," Meshkati said in an interview.

The report said the 2011 Japanese accident, caused by an earthquake and tsunami, should not have been a surprise. The report says another Japanese nuclear power plant also hit by the tsunami was closer to the quake's fault. But the Onagawa plant wasn't damaged because quakes and flooding were considered when it was built.

Onagawa had crucial backup electricity available for when the main power went down, as opposed to Fukushima which had emergency generators in a basement that flooded. Onagawa's operators had "a different mindset" than the executives who ran Fukushima, Meshkati said.

The other two nuclear accidents--at Pennsylvania's Three Mile Island and Ukraine's Chernobyl--were caused by multiple system failures.

Lee Clarke, a Rutgers University risk expert and author of the book "Worst Cases," criticized the academy's report as too weak. He said the tone of the report made it seem like the accident was unpredictable and caught reasonable people by surprise "and it shouldn't have." But the report itself said the "the Fukushima accident was not a technical surprise."

David Lochbaum of the activist group Union of Concerned Scientists said the problem is that federal law financially protects the U.S. nuclear industry from accidents and gives utilities little incentive to spend money on low-probability, high-consequence problems.

But Nuclear Energy Institute senior vice president Anthony Pietrangelo said the American nuclear industry has already taken several steps to shore up backup power and deal with natural disasters. "We cannot let such an accident happen here," he said in a statement.

Another issue the report raised was about how far radiation may go in a worst case accident. The U.S. Nuclear Regulatory Commission orders plants to have emergency plans for a zone of 10 miles around a nuclear plant. But the academy study said Fukushima showed that "may prove inadequate" if a similar accident happened in the U.S. People nearly 19 miles away in Japan needed protection from radiation. But the committee would not say what would be a good emergency zone.

## **U.S. Fukushima study: Think about unthinkable disasters**

<http://www.japantimes.co.jp/news/2014/07/25/national/science-health/u-s-fukushima-study-think-unthinkable-disasters/#.U9JQi7Hi91s>

AP

WASHINGTON – A U.S. science advisory report says the Fukushima nuclear accident offers a key lesson to America’s nuclear industry: Focus more on the highly unlikely but worst case scenarios.

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Another issue the report raises is about how far radiation may go in a worst case accident.

The U.S. Nuclear Regulatory Commission orders plants to have emergency plans for a zone of 10 miles (16 km) around a nuclear plant. But the academy study said Fukushima No. 1 showed that “may prove inadequate” if a similar accident happened in the U.S.

People 30 km away in Fukushima needed protection from radiation. But the committee would not say what would be a good emergency zone.

July 27, 2014

## **Iodine tablets for Kagoshima Pref. residents**

### **Kagoshima residents near Sendai nuclear plant given iodine tablets**

<http://www.japantimes.co.jp/news/2014/07/27/national/kagoshima-residents-near-sendai-nuclear-plant-given-iodine-tablets/#.U9Ty-bHi91s>

Kyodo

Local authorities in Kagoshima Prefecture on Sunday started handing out iodine tablets to residents living within 5 km of the Sendai nuclear power plant, which may be restarted in the fall.

It is the first time iodine tablets have been distributed under guidelines instituted by the Nuclear Regulation Authority, which was set up in the wake of the 2011 Fukushima nuclear disaster. Iodine tablets help people protect their thyroid glands from radiation.

The move by the Kagoshima prefectural and Satumasendai municipal governments came after Kyushu Electric Power Co.'s Sendai plant cleared a key safety hurdle for restarting operations earlier this month.

About 2,700 of the roughly 4,700 residents over 3 who live within the 5-km radius were given a supply of tablets after hearing an official briefing, submitting medical interview sheets and receiving the green light from doctors, according to prefectural officials.

Briefings for the remaining residents will resume in September, they said.

A total of 39 residents declined to receive the tablets. Children under 3 will receive the equivalent at shelters in the event of a nuclear accident, the officials said.

### **Iodine distributed to residents near nuclear plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140727\\_15.html](http://www3.nhk.or.jp/nhkworld/english/news/20140727_15.html)

Government officials in communities near the off-line Sendai nuclear power plant in Kagoshima Prefecture have distributed iodine tablets to residents. Preparations are underway to restart the plant.

A disaster preparedness plan developed by Kagoshima Prefecture says about 4,700 people aged 3 or older living within 5 kilometers of the Sendai plant should take iodine tablets in the event of a nuclear accident. Iodine helps prevent the thyroid gland from absorbing radioactive substances.

The governments of Kagoshima Prefecture and Sendai City distributed iodine tablets to 2,661 people on Sunday.

Residents were given permission to take the medicine after consulting with a doctor as iodine can cause side effects.

Residents visiting a facility in Sendai City received background information about iodine from a pharmacist before being given the medicine.

A 64-year-old man said he feels reassured because the medicine is being distributed in advance. He said he won't need to take it unless there's an accident at the plant, so he hopes there won't be one.

This is the first time iodine is being distributed under new safety guidelines drawn up by Japan's Nuclear Regulation Authority.

Prefectural and municipal authorities are planning to distribute iodine to other residents after holding a public meeting on the matter in September or later.

July 31, 2014

## Check the maths

### **Tsunami projections for nuclear plant to be redone**

[http://www3.nhk.or.jp/nhkworld/english/news/20140801\\_04.html](http://www3.nhk.or.jp/nhkworld/english/news/20140801_04.html)

The operator of a nuclear power plant in central Japan has been found to have miscalculated the simulated maximum height of a tsunami that could hit the complex.

The Nuclear Regulation Authority once approved tsunami projections submitted by Kansai Electric Power Company for the now-offline Takahama plant in Fukui Prefecture.

The estimates include tsunami heights and tremor intensity associated with earthquakes of the largest conceivable magnitude in the area.

The authority is now examining an application from Kansai Electric to restart the No.3 and No.4 reactors at the plant.

But at a screening meeting on Thursday, Kansai Electric was found to have incorrectly entered data involving the expected duration of a continuous undersea landslide that could happen in the event of a major quake. The cause of the error is unknown.

The utility now needs to use correct data to recalculate the predicted height of the tsunami.

The authority discovered tsunami projections for the Takahama plant to be inadequate immediately after screening began in July of last year.

Kansai Electric later raised its maximum tsunami estimate to 5.7 meters, up about 3 meters from the initial simulation. The company is currently building a 6.5-meter wall to safeguard the plant against tsunami.

Observers say the result of the recalculation might force Kansai Electric to increase its maximum tsunami projection again and overhaul its countermeasures. The process, if necessary, could delay the authority's screening and completion of a tsunami wall.

Kansai Electric officials say they want to review the tsunami estimates and report the results as soon as possible.

All the nuclear reactors in Japan are currently offline. In July of this year, the authority approved a draft safety plan for restarting reactors at the Sendai nuclear plant in Kagoshima Prefecture, Kyushu, southwestern Japan.

August 04, 2014

## Volcanoes will erupt, even in Kagoshima Pref.

### **Volcano in Kagoshima erupts for 1st time in 34 years, no injuries reported**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201408040039](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201408040039)

YAKUSHIMA, Kagoshima Prefecture--A volcano on one of the Osumi Islands in Kagoshima Prefecture erupted around midday on Aug. 3, marking the first eruption of Mount Shindake in 34 years.

Located on Kuchinoerabujima island, the volcano erupted at 12:24 p.m. Its plume of volcanic ash reached a height of more than 800 meters above the mountain's crater. No injuries or damage were reported.

The Kagoshima Meteorological Office issued a warning that a similar eruption could occur again. Kuchinoerabujima island is about 130 kilometers south of the prefectural capital Kagoshima and is administered by the town of Yakushima.

The last such eruption of the 600-meter-high Mount Shindake took place in September 1980. The Japan Meteorological Agency raised the alert level from 1 to 3 on the scale of 1-5. Level 3 means that restrictions are in place on approaching the mountain.

It was the first time that the alert level was raised to level 3 since a period between October 2008 and March 2009. It also marked the second such issuance since the agency introduced the five-level scale in December 2007.



The town of Yakushima designated a 2-kilometer radius no-entry zone around the volcano's crater and issued an evacuation preparation notice to the island's entire population of 77 households and 135 residents.

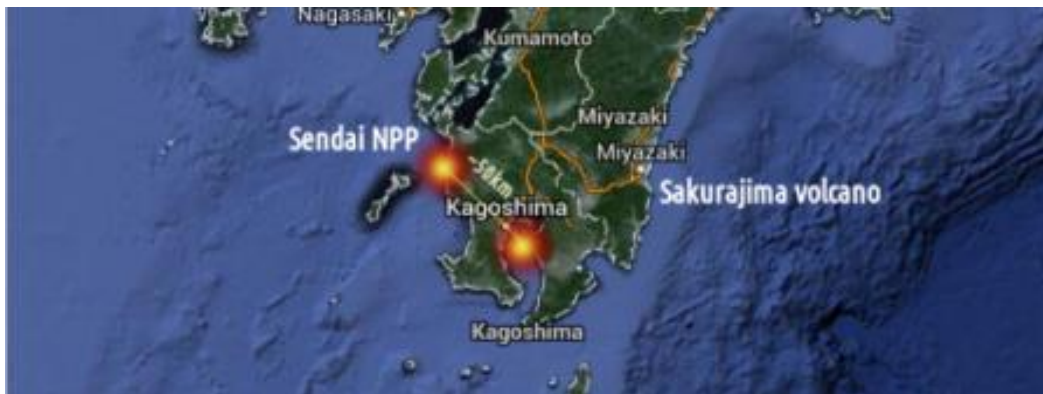
Yakushima officials said 33 residents had evacuated voluntarily to shelters as of 7:30 p.m. on Aug. 3.

See older (May 2014) articles on the subject:

## Volcanoes and nuclear plants

**There is an ongoing battle between the Sakurajima volcano and 50-km-away Sendai nuclear power plant in Kyushu, southwestern Japan.**

<http://theboldcorsicanflame.wordpress.com/2014/05/13/there-is-an-ongoing-battle-between-the-sakurajima-volcano-and-50-km-away-sendai-nuclear-power-plant-in-kyushu-southwestern-japan/>



**There is an ongoing battle between the Sakurajima volcano and 50-km-away Sendai nuclear power plant in Kyushu, southwestern Japan. While the operator of the power plant aims to restart its idle nuclear reactors, a new strong eruption brings our attention back to issue of how safe our nuclear power plants are from the dangers posed by volcanoes.**

Japan's new safety standards set by Nuclear Regulation Authority (NRA) in 2013 now require electric power companies to consider possible influences from volcanoes located within a radius of 160 kilometers from nuclear power plants. Because of this, Sendai operators examined the

**effects of eruptions from 39 volcanoes in what is called Japan's first serious evaluation of the safety of nuclear power plants from the standpoint of the danger posed by volcanoes.**

**As far as the volcanic ash is considered, the evaluation concluded that it is sufficient to take measures based on the assumption that ash from Sakurajima volcano in Kagoshima Prefecture would accumulate in the compound of the Sendai nuclear power plant to a height of up to 15 centimeters...**

**However, as noted by Asahi Shimbun, "will those measures really work given the possibility that accumulation of volcanic ash to a height of only several millimeters will seriously impede workers and vehicles? If the intake of water to cool nuclear reactors is also impeded, the reactors will be immediately plunged into dangerous situations."**

**\_It is assumed that catastrophic eruptions in Japan occur about once every 6 000 - 10 000 years but no one can exactly say when or where the next one will happen. On the other hand, it is known that when they do happen the pyroclastic flows can bury an area of over 100 kilometers from the volcano.**

**Such massive eruptions can cover the entire Japan and all surrounding countries in thick volcanic ash and should such event occur while the plant is operating, the control over the station would definitely be lost.**

**"The major pyroclastic currents produced by Kumamoto Prefecture's Mount Aso about 90 000 years ago burned down the entire northern half of Kyushu and traveled across the ocean to what are now Yamaguchi and Ehime prefectures. Pyroclastic flows caused by Kagoshima Prefecture's Mount Aira 26 000 to 29 000 years ago completely destroyed southern Kyushu. Such eruptions are particularly common in Kyushu and Hokkaido." (Mainichi)**

**In earthquake vs the nuclear power plant scenario that took place in 2011, the earthquake definitely won. Such strong quakes are considered to happen once every 1 000 years but can science really say that Japan (and the rest of the world) is safe for the next 1 000 years?**

**Sakurajima erupts several hundred times per year.**

**EDITORIAL: Threat posed by volcanic eruptions to nuclear plants must be carefully examined**

<http://ajw.asahi.com/article/views/editorial/AJ201405120021>

Now is the time to rethink the risk of operating nuclear power plants in Japan, which is one of the most volcanically active countries in the world.

Kyushu Electric Power Co. is currently aiming to restart the operations of idled reactors in its Sendai nuclear power plant in Kagoshima Prefecture. However, in the Nuclear Regulation Authority's inspection process on whether to permit the restarts, the possible consequences of volcanic eruptions in surrounding areas is attracting attention.

Based on the new safety standards worked out in 2013, the NRA is examining the threat posed by eruptions and the effectiveness of measures to deal with them. To tell the truth, it is the first time that Japan has seriously evaluated the safety of nuclear power plants from the standpoint of the danger posed by volcanoes.

In the March 2011 accident at the Fukushima No. 1 nuclear power plant, people in charge had to reflect on the insufficient measures to deal with tsunami. However, disasters at nuclear power plants could be caused not only by tsunami but also by volcanic eruptions and even terrorists. Given the seriousness of disasters caused by these factors, it is a matter of course to think seriously about the risks posed by them, which have been made light of so far.

The new safety standards require electric power companies to consider possible influences from volcanoes located within a radius of 160 kilometers from nuclear power plants. Therefore, Kyushu Electric examined the effects of eruptions from 39 volcanoes. As a result, it concluded that it is sufficient to take measures based on the assumption that ash from Sakurajima volcano in Kagoshima Prefecture would accumulate in the compound of the Sendai nuclear power plant to a height of up to 15 centimeters.

As one of the measures, the utility will stockpile fuel for emergency generators in preparation for a situation in which power transmission lines were severed due to the weight of volcanic ash. Another measure is that it will clean filters for air ventilation equipment or emergency generators or replace the filters with new ones if they become clogged.

However, will those measures really work given the possibility that accumulation of volcanic ash to a height of only several millimeters will seriously impede workers and vehicles? If the intake of water to cool nuclear reactors is also impeded, the reactors will be immediately plunged into dangerous situations.

The influences from these mid-scale eruptions must be fully examined as realistic threats.

It is more difficult to assess risks from catastrophic eruptions whose frequency of occurrence is low.

In those eruptions, the pyroclastic flow, which consists of hot gas and rock, travels more than 100 kilometers, causing devastating damage in surrounding areas. In the areas around the Sendai nuclear power plant, there are several calderas, or bowl-shaped depressions, that were formed by the collapse of land caused by catastrophic eruptions.

Kyushu Electric assessed that, given those calderas, catastrophic eruptions have occurred at an interval of about 60,000 to 90,000 years. Based on the assessment, it says, "Not much time has passed since the latest catastrophic eruption occurred. Therefore, the possibility is extremely low that the next catastrophic eruption will take place within the coming several decades when the nuclear power plant is operating. There will be no problems if we continuously monitor the signs of eruptions."

However, some experts offer contrasting views, saying that forecasts of the intervals of eruptions are not reliable and that it is uncertain whether the signs of an eruption can really be foretold.

Nuclear power plants are not the only facilities that would suffer devastating damage from catastrophic eruptions. If those nuclear plants are destroyed, however, radioactive materials will continue to be scattered throughout the world. It is a challenge not only for the Sendai nuclear power plant but also for many other nuclear power plants in Japan.

Methods to assess the possible impact of eruptions have yet to be established in the world. The NRA bears responsibility for conveying the potential consequences, including the limits of human knowledge as to forecasting eruptions, to the public in an easy-to-understand manner.

August 7, 2014

## A lot of people to evacuate ...

### **Accident at Tokai nuke plant could force 520,000 to evacuate outside Ibaraki Pref.**

<http://mainichi.jp/english/english/newsselect/news/20140807p2a00m0na015000c.html>

A serious nuclear accident at the Tokai No. 2 Power Station in Ibaraki Prefecture could result in about 520,000 people living within 30 kilometers of the plant taking shelter in other prefectures, according to a prefectural evacuation draft.

Some 960,000 people live within the urgent protective action planning zone (UPZ) within a 30 kilometer radius of the plant in Tokai, Ibaraki Prefecture. Of these, some 520,000 would likely take shelter in five neighboring prefectures, while the remaining 440,000 would evacuate to other areas within Ibaraki Prefecture, according to the draft released on June 6 by the Ibaraki Prefectural Government.

Cities, towns and villages are expected to devise concrete evacuation plans to respond to a serious nuclear accident, but the large number of evacuees is expected to make it difficult to formulate plans securing places for them to stay while avoiding confusion.

"Evacuation within the prefecture alone is impossible," Ibaraki Gov. Masaru Hashimoto said. "I want to have other prefectures accept people."

The UPZ spans 14 cities, towns and villages including the Ibaraki prefectural capital of Mito (268,750 people) and Hitachinaka (157,060 people). Under the prefectural government's draft, roughly 440,000 people would evacuate to areas in Ibaraki Prefecture outside the UPZ, while another 52,000 would evacuate to Fukushima, Tochigi, Gunma, Saitama and Chiba prefectures. The prefectural government says that in the future, it will make arrangements with municipalities on the number of people who would evacuate to each of the five surrounding prefectures and how they would get there.

However, there remain many outstanding issues, such as where to place screening stations to remove radioactive materials from people's bodies.

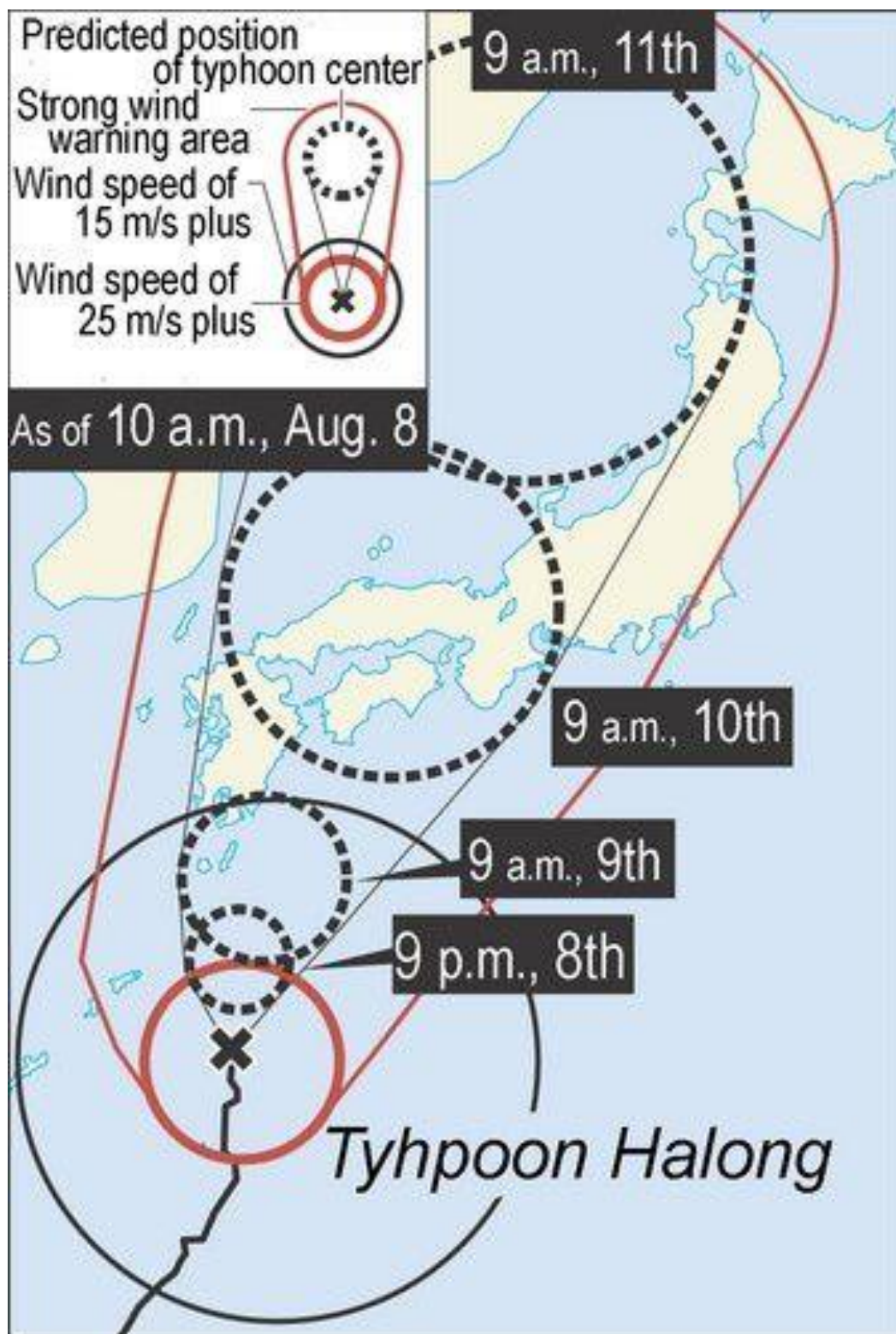
"I get the impression that the prefectural government has just divided up places to evacuate people," commented Tokai village assembly member Kazumasa Aizawa. "**Paper plans alone are meaningless.**"  
August 07, 2014(Mainichi Japan)

August 8, 2014

## Typhoon threat

### Powerful typhoon heading toward western Japan

<http://mainichi.jp/english/english/newsselect/news/20140808p2a00m0na005000c.html>



Powerful Typhoon Halong may hit western Japan on Aug. 9 and 10, the Japan Meteorological Agency said.

The agency has warned of strong winds, high waves, heavy rain and landslides as the typhoon is approaching mainland Japan.

As of 10 a.m. on Aug. 8, the typhoon, this year's 11th, was situated about 230 kilometers east-southeast of Amami Oshima Island in Kagoshima Prefecture, and was moving north. The atmospheric pressure at its center was 945 hectopascals and it was packing winds up to 40 meters per second at its center. The maximum instantaneous wind speed was 55 meters per second.

Agency officials said the typhoon may approach southern Kyushu on Aug. 9 and hit Shikoku and western Honshu.

Moist air around the typhoon has flowed into western Japan, bringing over 50 millimeters of rain per hour to areas along the Pacific coast on Aug. 8. It may bring over 80 millimeters of rain in some areas of western Japan on Aug. 9.

Eastern Japan areas along the Pacific coast may also see heavy rain on Aug. 9, the agency warns. In some areas of the Kanto-Koshin region, there may be 200 to 300 millimeters of rain over a 24-hour period up to 6 a.m. on Aug. 10.

August 9, 2014

### **Powerful typhoon approaches southern Kyushu, 400 flights cancelled**

<http://mainichi.jp/english/english/newsselect/news/20140809p2g00m0dm040000c.html>

TOKYO (Kyodo) -- A powerful typhoon is approaching southern Kyushu, bringing heavy rain, strong winds and high waves, the Japan Meteorological Agency said Saturday.

Typhoon Halong is expected to head toward the Shikoku and Chugoku regions in western Japan, which have already been hit by heavy rain earlier this week, according to the agency.

Airlines, including Japan's two major carriers Japan Airlines Co. and All Nippon Airways Co., have cancelled about 400 flights, affecting passengers planning to return to their hometowns or travel in the summer vacation season.



At 11 a.m., the typhoon was located around 250 kilometers south-southwest of Cape Ashizuri in Kochi Prefecture and was heading north-northeast with an atmospheric pressure of 955 hectopascals at its center and packing winds of up to 198 km per hour.

Rainfall in the 24 hours to 6 a.m. Sunday is expected to reach 700 millimeters in Shikoku, 600 mm in the Kinki and Tokai regions, 400 mm in northern Kyushu and 300 mm in southern Kyushu.

The typhoon is expected to cause waves of as high as 12 meters, the agency said.

## **Typhoon Halong projected to plow through western Honshu on Sunday**

<http://www.japantimes.co.jp/news/2014/08/09/national/typhoon-halong-projected-plow-western-honshu-sunday/#.U-cTjWPi91s>

JJIJ

Typhoon Halong is expected to cross western Honshu from south to north on Sunday, the Meteorological Agency said Saturday.

Typhoon Halong is expected to cross western Honshu from south to north on Sunday, the Meteorological Agency said Saturday.

The nation's 11th typhoon of the year was projected to rumble across the Chugoku region on its way to the Sea of Japan after making landfall on Shikoku early Sunday, the agency said.

As of 3 p.m. Saturday, the typhoon had a central atmospheric pressure of 960 hectopascals and was traveling north-northeast some 160 km south-southwest of Cape Ashizuri in Kochi Prefecture at 15 kph. The maximum sustained wind speed near its center was 126 kph.

The typhoon spread heavy rain and wind from Kyushu to the Kii Peninsula on Saturday, prompting many towns and cities to issue evacuation orders or advisories.

Evacuation orders were issued in Yamaguchi Prefecture, part of the Chugoku region, in and Tokushima and Kochi on Shikoku, affecting some 2,700 residents from more than 1,300 households. Many other municipalities opted to take less urgent steps in areas ranging from Kyushu to the Kinki region, affecting more than 140,000 residents.

The typhoon also disrupted public transportation just as many families were preparing for the Bon holidays next week.

Airlines decided to cancel more than 400 flights, mainly those linked to Shikoku and Kyushu. Railways in the two regions canceled some train services.

The bad weather also delayed the start of the annual high school baseball tournament at Koshien Stadium in Hyogo Prefecture until Monday. It was the first postponement since the competition began in 1915.

August 10, 2014

## **M6 quake in Aomori**



## **M6.1 quake hits Aomori, no tsunami alert issued**

<http://mainichi.jp/english/english/newsselect/news/20140810p2g00m0dm001000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 6.1 struck off the coast of Aomori Prefecture on Sunday, jolting northeastern Japan areas and Hokkaido, but no tsunami alert has been issued, according to the Japan Meteorological Agency.

The 12:43 p.m. quake, which originated around 50 kilometers under the seabed off Aomori, registered lower 5 on the Japanese seismic scale of 7 in Shichinohe in the prefecture, the agency said.

Tohoku Electric Power Co. said it has received no reports of abnormalities at its Higashidori nuclear plant in Aomori. Bullet train services on the Tohoku Shinkansen Line were temporarily suspended, according to East Japan Railway Co.

## **Typhoon finally moves to Sea of Japan**

### **Powerful typhoon moves to sea after pounding western Japan**

<http://mainichi.jp/english/english/newsselect/news/20140810p2g00m0dm031000c.html>

TOKYO (Kyodo) -- A powerful typhoon moved to the Sea of Japan after making landfall in western Japan on Sunday, bringing heavy rain and strong winds across wide areas of the country, the Japan Meteorological Agency said.

Typhoon Halong, which landed in Kochi Prefecture early in the morning, was located over waters around 60 kilometers northwest of Kanazawa, Ishikawa Prefecture, as of 5 p.m., heading north-northeast at a speed of 40 km per hour with an atmospheric pressure of 975 hectopascals at its center and packing winds of up to 162 kph.

Rainfall brought by the season's 11th typhoon exceeded 1,000 millimeters in Umaji and 900 mm in Niyodogawa, both in Kochi Prefecture.

Torrential rain was also recorded in Tokushima and Mie prefectures, but with the passage of the typhoon, the agency lifted a special torrential rain alert issued for Mie.

More than 320 flights were cancelled Sunday, while bullet train services on the Tokaido and Sanyo Shinkansen Lines were partially suspended.

In Gifu Prefecture, central Japan, a man swept away in a river the previous day was confirmed dead Sunday.

A Kyodo News tally showed a total of six people died in accidents related to Typhoon Halong.

The Tokai, Kanto-Koshin and other regions were drenched, with hourly rainfall on Sunday reaching 71.5 millimeters in Tonosho, Chiba Prefecture, and 69.0 mm in Motosu, Gifu Prefecture.

The agency urged continued vigilance against heavy rain and strong winds in northern and eastern Japan.

### **Powerful typhoon heads north after hitting Shikoku region**

<http://mainichi.jp/english/english/newsselect/news/20140810p2g00m0dm002000c.html>

TOKYO (Kyodo) -- A powerful typhoon began heading north after making landfall in Kochi Prefecture in western Japan's Shikoku region and hitting Hyogo Prefecture on Sunday, the Japan Meteorological Agency said.

Typhoon Halong bringing heavy rain and strong winds across wide areas of Japan including those centered on Tokyo and Nagoya is expected to travel through western Japan toward the Sea of Japan later in the day, the weather agency said.

Rainfall brought by this typhoon has exceeded 1,000 millimeters in Umaji and 900 mm in Niyodogawa, both in Kochi Prefecture. Torrential rain was also recorded in Tokushima and Mie prefectures.

More than 200 flights have been cancelled and bullet train services on the Tokaido and Sanyo Shinkansen lines were partially suspended.

In central Japan's Gifu Prefecture, a man who was swept away in a river the previous day was confirmed dead Sunday, while a surfer was reported missing at a beach in Wakayama Prefecture.

Rainfall in the 24 hours to 6 a.m. Monday is expected to reach 400 mm in the Tokai region, 300 mm in the Kanto-Koshin, Shikoku and Kinki regions and 250 mm in Tohoku, according to the agency.

As of 11 a.m., the season's 11th typhoon was located at around Himeji in Hyogo, heading north-northeast at a speed of 30 kilometers per hour with an atmospheric pressure of 975 hectopascals at its center and packing winds of up to 162 kph.

## **Typhoon Halong heads north after hitting Shikoku; at least one dead**

<http://www.japantimes.co.jp/news/2014/08/10/national/typhoon-halong-heads-north-after-hitting-shikoku-at-least-one-dead/#.U-cUGmPi91s>

Kyodo

A powerful typhoon began heading north after making landfall in Kochi Prefecture in western Japan's Shikoku region and hitting Hyogo Prefecture on Sunday, the Japan Meteorological Agency said. [...]

August 11, 2014

## **Nuclear evacuees not wanted**

### **Municipalities not prepared to accept nuclear evacuees**

<http://mainichi.jp/english/english/newsselect/news/20140811p2a00m0na012000c.html>

Only 13 percent of municipalities around Japan that are supposed to accept evacuees in the event of a nuclear disaster have concrete plans in place for such a situation, a survey by the Mainichi Shimbun has found.

This is much lower than the around 60 percent of municipalities within 30 kilometers of nuclear plants that have plans in place for emergency evacuation of their residents.

The survey was conducted in June and July on 362 municipal governments that are specified in the evacuation plans of municipalities around 16 nuclear plants in Japan as locations for their residents to evacuate. Survey responses were received from 333 of the municipalities.

Only 47 of the municipalities responded that they had established plans for taking on the evacuees.

Ninety-three said they were in the process of making such procedures, but 179 said they have not and are not making such plans. Many municipalities blamed the delay on the time required to work things out with the prefectural and other municipal governments, but one municipality, Kamo in Niigata Prefecture, complained, "It would be almost impossible to accept a number of evacuees equivalent to 43 percent of our population."

For 10 nuclear plants -- Tomari in Hokkaido, Higashidori in Aomori Prefecture, four in Fukui Prefecture, Shimane in Shimane Prefecture, Ikata in Ehime Prefecture, Genkai in Saga Prefecture and Sendai in Kagoshima Prefecture -- all the municipalities within a 30-kilometer radius have set up evacuation plans for their residents. However, the percentages of the municipalities that are supposed to accept these residents that have plans in place to accept them are all low -- none for the Tomari plant, 33 percent for Higashidori, 13 percent for the Fukui Prefecture plants, 18 percent for Shimane, 5 percent for Ikata, 20 percent for Genkai and 11 percent for Sendai.

While the national government's nuclear disaster response policy calls on municipalities within 30 kilometers of nuclear plants to make evacuation plans, it does not call on the municipalities that would accept these evacuees to make plans. This lack of support from the government is behind the low number of destination municipalities with plans in place, and another reason thought to be responsible is that municipal governments have had little involvement with many of the decisions on where evacuees would be sent -- many of these decisions were made under the direction of prefectural governments or the Union of Kansai Governments.

Naomi Kamioka, an expert on evacuating residents from nuclear disasters, says, "In the Fukushima No. 1 Nuclear Power Plant disaster, evacuees were forced to stay long-term at their evacuation destinations. Without making plans for the acceptance of evacuees together with the evacuation plans, (the plans that have been made so far) are nothing more than a reshuffling of residents, and lack substance."

The national government has not investigated how many municipalities have plans for accepting nuclear disaster evacuees, so this survey marks the first time that the situation has come to light.

August 12, 2014

## **Anti-tornado facilities at Takahama plant**

### **Anti-tornado facilities at nuclear plant unveiled**

[http://www3.nhk.or.jp/nhkworld/english/news/20140812\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20140812_27.html)

The operator of a nuclear plant in central Japan has unveiled anti-tornado facilities that it says could protect its operation from gusts stronger than any ever recorded in the country.

Kansai Electric Power Company on Tuesday showed media the facilities for the 2 reactors at its Takahama plant in Fukui Prefecture.

They are designed to protect seawater pumps that cool the reactors using 4-centimeter-thick steel plates on the sides of the pumps and double metal nets over them to protect against falling objects.

The country's nuclear regulator had pointed out the pumps' vulnerability to tornados.

Officials of the firm say the facilities can withstand gusts of 360 kilometers per hour. They say they're also taking steps to keep power vehicles from being blown away by tornadoes.

The regulator is also urging the operator to strengthen measures against earthquakes and tsunamis.

Kansai Electric was recently found to have miscalculated the maximum height of tsunami waves that could hit the plant. The firm must now heighten an embankment under construction.

The regulator is conducting thorough safety screening of the reactors toward a possible restart. All of Japan's nuclear reactors are offline.

August 14, 2014

## Still smoking



Mount Shindake spews ash on Kuchinoerabujima island in Kagoshima Prefecture on Aug. 12. (Takaharu Yagi)

## Volcano in Kyushu still smoking; town remains on alert

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201408140002](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201408140002)

By TAKAYUKI KOZAKI/ Staff Writer

YAKUSHIMA, Kagoshima Prefecture--Smoke continues to billow out of a large, deep crack created by the volcanic eruption of Mount Shindake on Kuchinoerabujima island earlier this month.

Photos taken by The Asahi Shimbun on Aug. 12 showed a forest withered in ash and discolored by gas below the new crack on the southwestern side of the crater. Cinders were scattered around the side of the mountain, which lies west of the World Heritage site of Yakushima island.

The Aug. 3 eruption of Mount Shindake was the first in 34 years.

Smoke was also rising from other locations, according to the Japan Meteorological Agency's Fukuoka Regional Headquarters.

All of the JMA's seismographs near the crater were destroyed within seconds or minutes of the eruption.

JMA officials say the devices may have been directly hit by cinders or other ejected matter.

The alert level for the area within a 2-kilometer radius of the crater remains at 3 on the scale of 5, meaning entry to the area is restricted.

The town government of Yakushima, which administers the volcanic island, has urged all 135 residents on Kuchinoerabujima to remain alert and prepare for a possible evacuation in the event the cinders or pyroclastic flows reach their homes.

August 17, 2014

## But is it safe?

### Scientist weighs homecoming risks in Fukushima

<https://www.japantimes.co.jp/news/2014/08/17/national/science-health/scientist-weighs-homecoming-risks-fukushima/>

When scientist Junko Nakanishi stepped into radiation-contaminated towns and villages in Fukushima Prefecture 10 months after the nuclear power plant meltdowns of 2011, she realized how difficult the job of decontamination would be.

Decontamination is the biggest issue when thinking of Fukushima's future, because it determines when, or even if, residents will be able to return home, she said.

Three years on, however, the government is still stumbling toward a realistic decontamination goal, leaving thousands of evacuees in limbo, she said.

The central government is responsible for decontaminating evacuation zones in 11 municipalities where dosage readings exceed 20 millisieverts per year. But many areas remain untouched or in the midst of decontamination, with their 80,000 residents still displaced as of April 1, by government order.

"The longer their evacuation period gets, the more residents will miss the timing to return home," said Nakanishi, a fellow at the National Institute of Advanced Industrial Science and Technology. "It's about time to think of ways to live under a certain level of risk."

The government did not set a specific radiation goal for decontamination but settled on a threshold instead. The main condition for lifting an evacuation order is that the annual radiation dose must be 20 millisieverts or less.

An annual dose of 1 millisievert has meanwhile been set as a “long-term goal” for decontamination, without a specific time frame.

Nakanishi said that the 20 millisievert threshold is too high for many residents to accept and that the 1 millisievert figure is unrealistic in heavily contaminated areas, given the limits and cost of decontamination technology. As an alternative, she proposes a maximum exposure level of 5 millisieverts per year as a target for decontaminating evacuation zones, based on her assessment of the various risk factors.

“Somebody has to find a common ground where people can return to their homes as early as possible. We need to set a goal for radiation. . . . But no politician, bureaucrat or expert seems to make such suggestions,” she said. As a scientist, Nakanishi said it’s her job to find that magic number.

Since the 1970s, Nakanishi has studied the environmental and health risks of such toxic chemicals as dioxin and mercury. At the core of her research is the concept of risk trade-off, which means reducing one risk while allowing another to rise.

For example, chlorinating the drinking water of a population would reduce its risk of contracting an infectious disease. But it would also increase the risk of cancer. Nakanishi searches for the best mix of acceptable risks when trying to reduce overall risk.

Nakanishi looked at health factors, technological limits, cost and time to assess the tainted areas in Fukushima and concluded that an annual radiation exposure of 5 millisieverts or less would be the best goal for repopulating them.

According to her calculations, a 5-millisievert goal would allow some 65,000 residents to return home in another one to two years and cost around ¥1.8 trillion to execute.

A resident would be exposed to around 38 millisieverts over 15 years, a risk that, when compared to the average risk of exposure to a chemical like dioxin, is not high, Nakanishi said. The dose would drop to less than 1 millisievert a year after 15 years due to natural radioactive decay and land erosion from rain and wind, she said.

According to the International Commission on Radiological Protection, an annual dose of 100 millisieverts increases the risk of dying by cancer by 0.5 percent over one’s lifetime. Below that, the risks are too small to distinguish from the effects of other cancer risks, such as smoking and an unbalanced diet.

“The risk is not zero, but we need to think about the amount we can tolerate,” Nakanishi said. “It’s difficult, but that’s the reality. It’s more honest to say that the risk is not zero rather than it is safe.”

For areas with annual radiation readings over 50 millisieverts, residents need to give up on returning and relocate, with financial support from the state, she said.

Nakanishi also emphasized that there is a need for the government to financially back those who want to relocate even if an annual radiation dose drops to less than 5 millisieverts a year. Given Japan’s experience with the atomic bombings of Hiroshima and Nagasaki, some find it extremely hard to prevent horrific images of the aftermath from entering their minds when they hear the word radiation, she said.

“For a long time, I’ve been analyzing the risk of chemicals, and through the research I have come to realize that Japan has never set a goal for regulating chemicals by itself. It was always based on decisions made by international organizations or other countries,” she said.

“(In Japan, people are) not used to finding a mutually acceptable common ground by considering different conditions and risks,” Nakanishi said. “(Fukushima) was a very unfortunate nuclear disaster. But I see it as a chance for Japan to learn to strike a balance of risks, and find risk levels that we can accept.”

August 20, 2014

## Shika safety screening on hold

### Reactor safety screening on hold until fault study

[http://www3.nhk.or.jp/nhkworld/english/news/20140820\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20140820_27.html)

Japan's nuclear regulator says it will put safety checks of a reactor in central Japan on hold until it determines the stability of geologic faults under the facility.

The Nuclear Regulation Authority on Wednesday made the decision on the Shika plant reactor in Ishikawa Prefecture on the Sea of Japan coast.

The plant's operator, Hokuriku Electric Power Company, last week applied for a government safety review of the No. 2 reactor as a step toward resuming its operation.

But an expert panel of the authority has been discussing whether the faults could shift.

Officials say they should have a unified view on the matter before full-scale screening.

But they agreed to let Hokuriku Electric join discussions with other utilities on safety measures common to reactors under screening. The measures include testing computer programs to verify preparedness for serious accidents.

The authority earlier decided on the same step for the Higashidori plant in northern Japan. Tohoku Electric Power Company applied for a safety review of the facility in June.

## NRA will revisit current safety guidelines

### Nuclear body to study measures outside 30km zone

[http://www3.nhk.or.jp/nhkworld/english/news/20140820\\_25.html](http://www3.nhk.or.jp/nhkworld/english/news/20140820_25.html)

Japan's nuclear regulator plans to revise its current safety guidelines concerning accidents. It says it will study measures for cases of radioactive materials spreading beyond the 30-kilometer zone around nuclear plants.

The current guidelines were compiled after the Fukushima Daiichi accident. They call for people within roughly 30 kilometers of a nuclear plant to leave or seek shelter indoors in the case of an accident.

But measures beyond that zone remain an issue for the regulator. Experts pointed out the possibility of residents suffering internal radiation exposure from plumes that spread beyond the 30-kilometer area.

The Nuclear Regulation Authority on Wednesday decided to begin a study on which areas outside the 30-

kilometer zone should be issued with warnings to stay indoors or take other safety measures. It will also discuss criteria for such measures.

The nuclear body also decided to set evacuation zones for nuclear fuel recycling facilities on a case-by-case basis, rather than setting a uniform standard.

The revision of NRA's safety guidelines could increase the number of municipalities that are required to prepare nuclear safety measures.

August 25, 2014

### **NRA safety plan over volcano eruptions questioned**

[http://www3.nhk.or.jp/nhkworld/english/news/20140825\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20140825_32.html)

Experts on volcanoes are posing questions about the safety guidelines of Japan's nuclear regulator in dealing with volcanic eruptions.

The Nuclear Regulation Authority, or NRA, guidelines require nuclear power plant operators to take specific actions if volcanic activity could affect operations. The actions include taking nuclear fuel out of the facilities.

The NRA approved a draft safety plan to restart two reactors at the Sendai Nuclear Power Plant which is located about 50 kilometers from an active volcano, Mt. Sakurajima, in Kagoshima Prefecture, southwestern Japan. The plant operated by the Kyushu Electric Power Company.

On Monday, the regulator held its first meeting with volcanologists. They discussed volcanic surveillance and criteria for determining eruption levels.

Volcano experts are raising doubts about the NRA's safety measures in dealing with eruptions. One scientist said there is usually advance warning of major eruptions. But he says it takes years to remove nuclear fuel and this would not leave enough time for removal. Another cited the absence of standards for determining what kind of phenomena indicate the possibility of a major volcanic eruption.

NRA Commissioner Kunihiko Shimazaki expressed his intention to undertake safety measures with a major eruption in mind.

NRA officials said the views of experts will be reflected in the safety measures. The officials added that Kyushu Electric will likely be required to undertake additional safety measures to restart its reactors at the Sendai plant.



Over 20m-tsunami could hit Sea of Japan

August 26, 2014

## More debate needed over volcanoes

### Experts want more debate on risks of volcanoes near nuclear plant

<http://mainichi.jp/english/english/newsselect/news/20140826p2g00m0dm036000c.html>

TOKYO (Kyodo) -- As Japan gets closer to the first restart of a nuclear plant under new tighter regulations, experts said Monday it is difficult to predict volcanic hazards and called for more debate on the risks of volcanic eruptions on facilities.

Last month, the Nuclear Regulation Authority said the risks of volcanic eruptions around the Sendai plant -- located in a region of active volcanic sites in southwestern Japan -- are negligible during its lifespan.

It was an effective safety nod based on its operator Kyushu Electric Power Co. continuing to monitor the state of volcanoes and taking appropriate measures if any signs of change are observed.

At Monday's expert panel meeting, however, scientists said there are no established ways to predict future volcanic eruptions, and even when signs of changes are noted, their interpretation is still open to debate.

"It is extremely difficult to predict the timing and the scale of massive volcanic eruptions" with current knowledge in volcanology, said Setsuya Nakada, professor at the Volcano Research Center of the Earthquake Research Institute at the University of Tokyo.

Another academic claimed the primary overseas study cited by Kyushu Electric and the NRA to support their arguments only covers a specific caldera volcano, and it cannot be generalized and applied to other volcanoes.

"It is extremely risky" to conclude that the possibility of volcanic eruptions around the Sendai complex is small enough "only on the basis of one study," said Toshitsugu Fujii, honorary professor of volcanology at the University of Tokyo.

The Sendai plant, on the island of Kyushu, is some 50 kilometers away from Mt. Sakurajima, an active volcano. There are a total of five calderas around the complex.

The odds of an eruption that give rise to a caldera, or a large crater formed by the collapse or explosion of a volcano, are said to be rather slim, but the potential damage could be devastating.

The NRA could order the operator to close down the plant or move fuels out in the event of emergency, but what measures should be taken on what criteria remains uncertain.

NRA Commissioner Kunihiro Shimazaki said at the meeting the regulator will "cope with the matter with responsibility."

On July 16, the NRA decision-making panel approved a draft report on the outcome of safety screenings on the Nos. 1 and 2 reactors at the Sendai nuclear station.

The regulator is expected to release the final version of the document possibly this month. The reactors would be the first among Japan's 48 idled commercial units to meet the new regulations introduced following the accident at the Fukushima Daiichi nuclear plant.

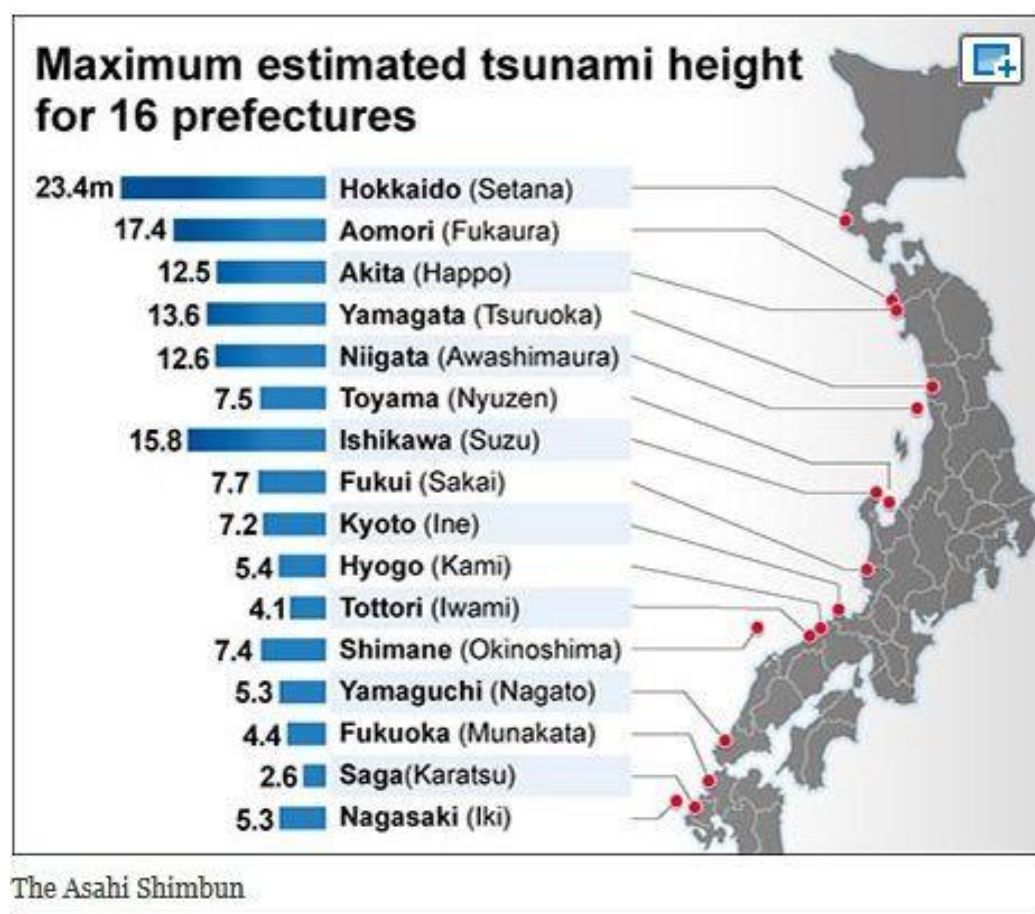
The two-unit Sendai plant is set to go back online after undergoing some other checks and once local consent has been obtained, but the restart is not expected before this winter.

The expert panel on volcanoes will continue discussion on how to monitor possible signs of volcanic hazards, but it will not affect the results of the safety screening, an NRA official said.

August 27, 2014

### Tsunami risk in Sea of Japan region just as high as Pacific coastline

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201408270056](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201408270056)



A panel of experts has found that the previously unexamined Sea of Japan region is just as vulnerable to devastating tsunami in a big earthquake as the Pacific Ocean coastline on the opposite side of the country. The study was undertaken in light of the March 11, 2011, Great East Japan Earthquake that generated tsunami in Pacific waters, turned parts of the Tohoku region into a wasteland and triggered a triple meltdown at the Fukushima No. 1 nuclear power plant.

The experts said tsunami as high as 23.4 meters could strike Setana in western Hokkaido. Estimates were calculated for 173 municipalities in 16 prefectures facing the Sea of Japan.

Tsunami heights were also estimated for areas that host nuclear power plants.

The maximum height of one projected to hit the Tomari plant in Hokkaido was 5.8 meters.

A 3.8-meter-high tsunami was expected to reach the Shika nuclear plant in Ishikawa Prefecture, while one of 3.4 meters was projected for the Kashiwazaki-Kariwa plant in Niigata Prefecture.

The estimates were all below the expected tsunami heights previously announced by electric power plants for the 11 nuclear plants, including those under construction and covered by the latest study.

A panel member said: "Faults are shallower on the Sea of Japan side in comparison to the Pacific side, and the angle of movement is sharper so tsunami heights become larger in comparison to the scale of the quake. Tsunami also reach land more quickly because the faults are closer to land."

In some areas, it was calculated that tsunami would arrive just one minute after the earthquake struck.

The panel of experts, which was brought together by the land ministry, the Cabinet Office and science ministry, selected 60 major faults in the Sea of Japan and estimated the effects of earthquakes ranging in magnitude from 6.8 to 7.9.

The members simulated 253 tsunami patterns on the basis of location, angle and length of the fault.

Estimates were then made of the maximum tsunami height for 50-meter squares drawn up along the coastal area extending from the Shiretoko Peninsula of Hokkaido to Hirado, Nagasaki Prefecture.

According to the estimates, the other area where a tsunami exceeding 20 meters would likely hit was Kamoenai, Hokkaido. The maximum height was put at 20.3 meters.

A total of 30 municipalities in six prefectures were expected to be hit by tsunami exceeding 10 meters.

The panel also released estimates for areas that could be considered ordinary residential districts located within 200 meters or so from the coast and with an elevation of under 8 meters.

The highest estimate was for Okushiri, Hokkaido, where the maximum tsunami height was calculated to be 12.4 meters.

The region from Hokkaido to Fukui was expected to be hit by tsunami ranging in height between 5 to 12 meters, while the region from Kyoto to northern Kyushu was likely to see tsunami between 3 to 4 meters high.

Calculations were also made on how quickly tsunami of at least 30 centimeters would strike after the quake.

The tsunami would reach 15 municipalities in six prefectures within a minute after the quake. Among those municipalities are Okushiri and Sakata, Yamagata Prefecture. The tsunami was expected to reach 82 municipalities in 14 prefectures within 10 minutes.

Tsunami was expected to reach the city of Niigata in seven minutes and Fukuoka in eight minutes.

No calculation was made on how quickly the maximum estimated tsunami would reach a particular location because panel members said the speed would differ depending on the quake.

## **Over 20-meter tsunami could hit Sea of Japan coast: gov't panel**

<http://mainichi.jp/english/english/newsselect/news/20140827p2g00m0dm036000c.html>

TOKYO (Kyodo) -- A tsunami of over 20 meters could hit a town on the Sea of Japan coast, a government panel on large-scale earthquakes said Tuesday.

The town of Setana in Hokkaido faces the biggest potential tsunami hitting coastal areas on the Sea of Japan at 23.4 meters high, according to the panel, which studied heights of possible tsunamis covering 16 prefectures from Hokkaido in the north to Nagasaki in the southwest.

The largest possible tsunami to hit flat land areas would be 12.4 meters high in the town of Okushiri in Hokkaido, according to the study.

The first study on tsunami on the Sea of Japan coast will be used by prefectural governments for estimating inundation and designating warning zones.

The government is expected to ask municipal governments to bolster their safety measures as faults in the Sea of Japan tend to be close to land areas, possibly causing relatively high tsunamis to hit the coast quickly.

As for 11 nuclear power stations on the coast, a 5.8-meter tsunami could reach an area near Hokkaido Electric Power Co.'s Tomari nuclear power plant while a 3.8-meter tsunami could hit an area near Hokuriku Electric Power Co.'s Shiga nuclear plant in central Japan, the panel said.

The study showed relatively higher tsunamis could be observed in northern parts of the coastline compared with other parts and some areas could be hit by a first tsunami wave about a minute after an earthquake.

The study selected 60 faults on the seabed where an earthquake with a magnitude of 7 to 8 could be triggered. It was compiled after legislation was established to strengthen measures against tsunamis following the 2011 earthquake and tsunamis that devastated northeastern Japan.

August 28, 2014

## **Countermeasures against tsunami in Sea of Japan not to be taken lightly**

### **Editorial: Step up efforts to take countermeasures against Sea of Japan tsunami**

<http://mainichi.jp/english/english/perspectives/news/20140828p2a00m0na001000c.html>

A panel of experts set up by the Land, Infrastructure, Transport and Tourism Ministry has announced estimates on the height of tsunami generated by major earthquakes that could occur in faults below the Sea of Japan.

Up to 23-meter-high tsunami are expected to hit Setana, Hokkaido, while five- to 12-meter-high tsunami are estimated in areas along the eastern to northeastern Sea of Japan coast from Hokkaido to Fukui Prefecture. Some three- to four-meter-high tsunami could hit areas along the western Sea of Japan coast from Kyoto Prefecture to Kyushu.

Although experts do not think there is a seismic source in the Sea of Japan that could trigger a huge temblor, like the Nankai Trough in the Pacific Ocean south of the Japanese archipelago, earthquakes

whose focal points are situated on the bottom of the Sea of Japan are estimated to cause higher tsunami despite their smaller seismic scales.

National and local governments are slow to work out countermeasures against Sea of Japan earthquakes as compared with responses to possible temblors in the Pacific Ocean. This is the first time that the national government has estimated the height of tsunami in each municipality along the Sea of Japan coast. By fully utilizing the estimates, the national government and local bodies concerned should take all possible measures to protect residents and their neighborhoods along the Sea of Japan coast from tsunami.

Massive tsunami that caused casualties have hit areas along the Sea of Japan coast in the past. The magnitude-7.7 central Sea of Japan earthquake in 1983 caused a tsunami that killed about 100 people, while a tsunami generated by a temblor with a magnitude of 7.8 in the southwest off Hokkaido in 1993 left 230 people dead or missing.

However, there are far fewer records of earthquakes in the Sea of Japan than those in the Pacific Ocean and little progress has been made on a geological survey on the seabed of the Sea of Japan. Legislation aimed at encouraging local bodies to step up countermeasures against tsunami, which came into effect following the March 2011 Great East Japan Earthquake and tsunami, requires prefectural governments to estimate the areas that are likely to be submerged by tsunami. However, prefectural governments have previously struggled to make estimates due to a lack of specific assessments of earthquake and tsunami on the Sea of Japan coast. As such, the panel of experts recently conducted analyses.

Based on data on past earthquakes and the crustal structure, the panel reportedly examined 60 underwater faults from Hokkaido to Nagasaki, assumed that these faults could trigger magnitude-6.8 to 7.9 temblors and then estimated the height of tsunami that could be generated by such quakes.

Experts say such relatively small earthquakes could trigger higher tsunami because these faults below the seabed of the Sea of Japan are relatively shallow. Since the faults are close to the archipelago, tsunami generated by earthquakes occurring in these faults could reach the archipelago in a short period of time. The panel estimates that tsunami waves could hit some areas within a minute after a quake, and that at least 30-centimeter-high waves, which could sweep away people, might hit 82 municipalities within 10 minutes.

Based on these estimates, prefectural and municipal governments in areas along the Sea of Japan coast are required to review their disaster-prevention plans. Top priority should be placed on safely evacuating local residents. A panel of experts within the government's Central Disaster Management Council recommended in September 2011 that all regions be rebuilt to make sure that residents can walk to safe locations within about five minutes after tsunami hit. The panel made the recommendation on the assumption that a huge earthquake could hit areas along the Pacific coast. **However, similar countermeasures should be taken in areas along the Sea of Japan coast. Both national and local governments along the Sea of Japan coast should designate evacuation routes and regularly conduct evacuation drills in preparation for deadly tsunami, while implementing all possible measures to lessen damage caused by such disasters.**

**The panel also announced its estimates of the height of tsunami that could hit 11 nuclear power stations along the Sea of Japan coast, but the estimated figures were below those by the plant operators. Still, there is a possibility that the estimates could change as seismological research progresses.** As such, it is only natural that authorities should strictly examine the safety of each nuclear plant.

September 2, 2014

## **NRA to study possible volcano eruptions**

[http://www3.nhk.or.jp/nhkworld/english/news/20140902\\_38.html](http://www3.nhk.or.jp/nhkworld/english/news/20140902_38.html)

Japan's nuclear regulator is set to work on criteria for determining levels of volcanic eruptions that would affect nuclear power operations.

The Nuclear Regulatory Authority, or NRA, requires nuclear power plant operators to take specific measures if volcanic activity could affect operations. The measures include removing nuclear fuel from the facilities.

The NRA held a meeting on Tuesday with volcanologists to discuss how to deal with what might be seen as signs of massive volcanic eruptions.

NRA officials pointed out the need for the authority to fulfill its responsibility to determine unusual phenomena as signs of volcanic eruptions.

One of the volcanologists said the nuclear regulator or utilities alone cannot determine any such signs, stressing the need for cooperation with local volcanic observatories and government agencies.

Another expert said criteria should be established on multiple items so that they can be implemented in an uncompromising manner.

NRA Commissioner Kunihiro Shimazaki said it's necessary to formulate new criteria by reflecting the latest achievements in studies on volcanic activity.

The regulators agreed to consider concrete criteria to be established in about a year.

September 3, 2014

## **Safety drill at Shika plant**

### **Nuclear disaster drill at Shika plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20140903\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20140903_29.html)

Japan will conduct a nuclear accident preparedness drill in November. The assumption of the drill will be that an accident has occurred at the Shika nuclear power plant on the Sea of Japan coast following an earthquake.

About 70 organizations including government ministries, agencies and municipalities, within a 30-kilometer radius around the plant will participate in the 2-day event.

The prime minister's official residence in Tokyo, the plant's off-site emergency operation facility, and the plant will be linked via videoconference to share information.

Residents in a 5-kilometer radius area will be immediately evacuated when the possibility of a release of radioactive substance arises.

Elderly patients at nursing home will be quickly moved into air-tight rooms on the premises.

At the time of the Fukushima Daiichi nuclear power plant accident in 2011, it took a lot time to evacuate hospital patients. They suffered as a result and some died.

The head of the country's Nuclear Regulation Authority, Shunichi Tanaka, says he hopes the planned drill will help identify various problems.

## **Questions remain over how to handle huge volcanic eruptions near nuclear plants**

<http://mainichi.jp/english/english/newsselect/news/20140903p2a00m0na019000c.html>

The Nuclear Regulation Authority (NRA)'s expert panel on Sept. 2 released the "draft of basic views" designed to help prepare for huge volcanic eruptions around nuclear power plants in Japan.

The nuclear regulator will order the operator of a nuclear power plant to stop running the facility when it detects signs of abnormal volcanic movements, among other measures. But because the NRA leaves monitoring work to detect such signs up to the operators of nuclear power stations, the question is likely to be raised over whether the nuclear regulators will in fact be able to make proper judgments.

The NRA presented the draft proposal to its panel in which experts were taking part. According to the proposal, when the operator of a nuclear power plant observes abnormal movements that could lead to a caldera eruption or a huge volcanic eruption, the NRA will order the operator of the nuclear power station to stop the operation of the facility and remove nuclear fuel, among other steps. Acknowledging that "there is a limit to detecting abnormality through monitoring," the draft proposal says that measures which take into account the possibility of a volcanic eruption should be taken while being prepared for the possibility of such predictions turning out to have been off the mark. It also says, "The NRA will responsibly judge (whether a huge volcanic eruption will occur)."

Nevertheless, Setsuya Nakada, professor at the University of Tokyo, said, "It is unreasonable to leave all of the monitoring work to plant operators. A framework should be created at the national level." Hiroshi Shinohara, chief researcher at the National Institute of Advanced Industrial Science and Technology, said, "It does not clarify who will decide the criteria for determining volcanic eruptions and how they will be set."

Kunihiro Shimazaki, acting chairman of the NRA, acknowledged that there was more work to be done about the criteria, saying, "We are not sure to what extent, but it is necessary to set it."

The NRA has effectively judged that the measures against volcanic eruptions being taken by Kyushu Electric Power Co., the operator of the Sendai Nuclear Power Plant in Kagoshima Prefecture, are compatible with its new nuclear regulations. During the NRA's screening of the nuclear power station, which is seen as the first among the country's idled nuclear plants to go back online, suggestions emerged that there was a high possibility that pyroclastic flows triggered by volcanic eruptions in the past had reached the area where the nuclear complex currently sits. Therefore, the question has been raised about the credibility of the screening.

Furthermore, with respect to measures against volcanic eruptions at Mount Fuji, Chubu Electric Power Co. applied for safety assessments of its Hamaoka Nuclear Power Station in Shizuoka Prefecture in a bid to restart the facility, saying, "Even if Mount Fuji were to erupt, it would not damage the safety functions of the power station." The NRA is to examine whether the power station is capable of withstanding such volcanic hazards.

September 8, 2014

## Japan & volcanic eruptions

### **Editorial: Volcanic threat no light matter for Japan's nuclear plant operators**

<http://mainichi.jp/english/english/perspectives/news/20140908p2a00m0na010000c.html>

The Nuclear Regulation Authority (NRA) has released a "basic concept" for dealing with major volcanic eruptions threatening the nation's nuclear power plants. If abnormal volcanic activity posing a threat is detected near a nuclear plant, the regulatory body will ask the power company in charge to halt the plant's reactors and remove nuclear fuel -- even if it might turn out to be a false alarm. The NRA is set to convene a meeting of experts to determine standards for taking such action.

Experts are aligned on the view that the No. 1 and 2 reactors at Kyushu Electric Power Co.'s Sendai Nuclear Power Plant in Kagoshima -- recently judged by the NRA to meet new safety standards -- together face the greatest risk of being damaged in a major volcanic eruption. This should have been considered before the plant underwent safety screenings. Japan is one of the most volcanic countries in the world, and neither the NRA nor the nations' power companies should make light of the threat of eruptions.

The landscape around the Sendai plant is marked by calderas -- cauldron-like geographical features that form when a large amount of magma spews out from under the ground, causing it to collapse. Mount Aso and Kagoshima Bay are two examples. In Japan, a major caldera-forming eruption is said to occur about once every 10,000 years.

Nuclear safety regulations established last year require power companies to conduct surveys on the possible effects of eruptions of volcanoes located within 160 kilometers of any nuclear power plant. Under the regulations, if there is a chance that an eruption could occur while the plant is in operation and produce a pyroclastic or lava flow that reaches the plant, then the land will be deemed unfit for nuclear power generation, and the plant will not be able to operate.



Kyushu Electric Power Co. has said the chance of such an eruption occurring while reactors at the Sendai plant are in operation is "sufficiently low." It says the plant could endure an eruption of the Sakurajima volcano that produced 15 centimeters of volcanic ash. Additionally, it says that even if a major eruption were to occur, then magma would build up several decades in advance, and if changes in the earth's crust were observed, then officials could perceive the danger.

In its safety evaluation, the NRA basically accepted Kyushu Electric Power Co.'s arguments. However, during a subsequent meeting of experts, it was pointed out that it is difficult to predict the size and timing of a major eruption. An opinion was also put forward that measures should not be left entirely in the hands of power companies but be addressed at the national level.

There are many nuclear facilities around Japan that could be affected by volcanic eruptions. The Sendai Nuclear Power Plant is a benchmark for those facilities in measures against eruptions.

NRA Commissioner Kunihiro Shimazaki, who currently serves as acting chairman of the regulator, says he doesn't know how far the body can go in setting standards for decisions pertaining to major eruptions. But unless officials remain on the safe side when forming standards, there could well be confusion when responding to an abnormality. Of course, if a major eruption does occur, it could threaten Japan's very existence.

In May last year, a Cabinet Office panel advised that monitoring be stepped up and evacuation plans quickly formulated, due to fears that volcanic activity could increase as a result of the March 2011 Great East Japan Earthquake. At the same time, delays in research on major eruptions have been pointed out. To avoid an "unexpected event" such as the Fukushima nuclear disaster, we hope officials will take NRA's planned formulation of standards for its decisions as an opportunity to promote research and countermeasures against major volcanic eruptions.

## Can't count on luck

September 12, 2014

### Editorial: Nuclear plants cannot rely on luck

<http://mainichi.jp/english/english/perspectives/news/20140912p2a00m0na003000c.html>

A document detailing testimony by the late former head of the tsunami-hit Fukushima No. 1 Nuclear Power Plant conveys the terror of the serious accident at the atomic power station that occurred 3 1/2 years ago.

The record of the government fact-finding panel's hearing of Masao Yoshida, former head of the power plant, over the accident has been released along with those on interviews with 18 others.

The document quotes Yoshida as saying, "Nobody came to help us," "Necessary supplies didn't reach us," and "there was a wide perception gap between the plant, the Tokyo Electric Power Co. (TEPCO) headquarters and the prime minister's office."

Both power companies including TEPCO and the government should pay close attention to Yoshida's testimony and clarify whether each problem he pointed out has been improved.

When the nuclear disaster broke out, the biggest challenge Yoshida and other workers encountered was to inject water into the plant's reactors, and they were asking for outside help. However, no one extended substantive or effective assistance to the plant. A lot of equipment that plant workers needed, such as power-supply vehicles, batteries, fire engines and diesel fuel, reached a nearby supply depot, but there was nobody who was able to transport the supplies to the power station. As a result, workers at the plant

were forced to come to the depot to pick up the supplies despite a serious shortage of personnel at the power station. Such a frustrating situation is apparently attributable to high radiation levels inside the plant.

Power companies are primarily responsible for dealing with any accident at power plants they operate. Regardless, it is imperative to address in advance how to support workers at a nuclear power plant where radiation levels have surged in case of a serious nuclear accident and how the national and local governments, the Self-Defense Forces and firefighters should cooperate in responding to the accident. During the hearing, Yoshida repeatedly pointed out a perception gap between plant workers, the TEPCO headquarters and the prime minister's office. The headquarters and the prime minister's office did not understand the situation of the plant at the time of the accident. As such, the headquarters ordered plant workers to stop injecting sea water in the reactors at the strong urging of the prime minister's office, obstructing worker's efforts to bring the crisis under control instead of extending support to the workers. The central government and utilities should clearly show whether they have implemented remedial measures to prevent a recurrence of such a problem.

The government stiffened regulatory standards for nuclear plants following the accident but emphasis is primarily placed on the hardware aspect. It is necessary to verify how far countermeasures in the software aspect, such as information and personnel, the flow of supplies and the chain of command, have been taken.

Yoshida, who faced a difficult response to the crisis in which the plant's No. 1 to 4 reactors fell into critical condition, pointed out problems involving the concentration of nuclear plants in small areas. However, Japan still faces risks arising from multiple nuclear plants in many areas, and it is necessary to seriously consider how to rectify the situation.

Yoshida's testimony suggests that the Fukushima No. 1 plant barely evaded a further catastrophe thanks to good luck.

Recalling the critical situation in which workers had been unable to inject water into the No. 2 reactor over an extended period, Yoshida was quoted as saying, "We were afraid that all radioactive substances would leak and spread. We visualized all of eastern Japan being devastated."

Keeping in mind that the worst-case scenario cannot be prevented by good luck, the government and power suppliers that are aiming to reactivate idled nuclear plants should learn lessons from the Yoshida testimony and all documents released by the government's fact-finding panel.

September 19, 2014

## No more quake expert in NRA

### NRA loses sole quake expert in mandatory reshuffle

Kyodo

The seismological expert credited with ensuring that Japan would embark a careful and methodical return to atomic power by demanding rigorous adherence to safety checks has left the decision-making panel of the Nuclear Regulation Authority after completing his two-year stint.

Kunihiko Shimazaki, the sole seismologist on the five-person panel, is to be replaced by a strong advocate of nuclear power.

A second commissioner whose term also expired Thursday is Kenzo Oshima, a former ambassador to the United Nations. He will be replaced geologist and Tohoku University professor Akira Ishiwatari.

The three remaining commissioners, including the chairman, comprise a radiologist and two engineers.

Nuclear power plant operators hope the reshuffle of the five-member NRA panel will make it easier to bring their idled reactors back online. However, anti-nuclear campaigners fear the move could compromise the independence of the fledgling regulator and lead to an overly hasty return to atomic power.

Shimazaki oversaw the rigorous safety screenings, a process that dimmed utilities' hopes for getting back to business.

One of the incoming commissioners, Satoru Tanaka, is considered a controversial choice because he has close ties to the nuclear industry. Pro-nuclear Prime Minister Shinzo Abe's team called him the best person for the job.

A former chairman of the Atomic Energy Society of Japan and a University of Tokyo professor, Tanaka has received payments and donations from a range of bodies in the sector, including one linked to Tokyo Electric Power Co., the operator of the disaster-hit Fukushima No. 1 power plant. He has also spoken out in support of nuclear power as a central component of Japan's electricity generation in future.

The second incoming commissioner is geologist and Tohoku University professor Akira Ishiwatari.

With all of the country's 48 reactors currently offline, utilities are desperate to fire them up and limit the ongoing damage to earnings being caused by fossil fuel imports, which grow more expensive as the yen weakens. Shimazaki had consistently pushed for stringent observance of safety regulations and in some cases ruled against power companies.

In one case, a panel led by Shimazaki ruled in May last year that a fault line under the No. 2 reactor at the Tsuruga nuclear complex on the Sea of Japan coast was active. The reactor is likely to be scrapped.

He has also urged utilities to reassess the possible impact of stronger-than-expected tsunami and earthquakes, and to hike safety measures at the plants accordingly.

Paying tribute to Shimazaki on Wednesday, NRA Chairman Shunichi Tanaka said he "played a significant role" in establishing the framework of a new regulatory body, after the Nuclear and Industrial Safety Agency, which used to oversee the nuclear industry, was dismantled after the 2011 Fukushima nuclear crisis.

**Observers say the first reshuffle of the NRA's panel since its establishment in 2012 could mark a turning point to see if the regulator can remain fair and independent.**

September 20, 2014

## New Govt nuclear disaster office

### Govt. to set up new nuclear disaster relief office

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The Japanese government plans to create a dedicated nuclear disaster relief office next month **to help local authorities draw up evacuation plans.**

A Cabinet Office team reviewing the Nuclear Regulation Authority has proposed appointing dozens of full-time workers to the job.

The new office would replace a group of about 80 officials assigned to work on nuclear disaster preparation. All of them also work for other ministries and agencies.

Some officials who work for the industry ministry traveled to Kagoshima Prefecture this month following a decision by nuclear regulators.

The regulators said measures for the Sendai power plant compiled by its operator meet new government regulations, in a decision that could pave the way for the operator to restart reactors.

Local authorities are calling for support from the national government, as new regulations require them to draw up evacuation plans for wider areas than before.

September 21, 2014

## How to evacuate Miyagi island?

### Residents of Miyagi island seek evacuation plan in case of nuclear plant disaster

<http://mainichi.jp/english/english/newsselect/news/20140919p2a00m0na007000c.html>

ONAGAWA, Miyagi -- The national government is preparing a temporary nuclear evacuation shelter on an island offshore of this town, which houses a nuclear power station, as the island has no access to the mainland to evacuate. Local residents, however, have expressed concern over the lack of evacuation plans in case of a nuclear emergency.

Izushima Island was home to some 500 people before the March 2011 earthquake and tsunami. The island measures some 14 kilometers in circumference. While the shortest distance between the island and the mainland is only about 200 meters, there is no bridge connection. When tsunami hit the island on March 11, 2011, following the magnitude-9 earthquake, it knocked out power and the water supplies, and residents spent the night isolated from the mainland.

If the Onagawa nuclear power plant, some 5 kilometers southwest of the island, was battered by the disaster, Izushima residents "could have been abandoned on the island," said Izushima Ward chief Minoru Sakai.

There is a sea route between the island and the mainland, and boats make three roundtrips a day. However, as the port was damaged in the disaster, boats could not reach the shore. As a result, Izushima residents were stuck on the island until Self-Defense Force personnel rescued them in helicopters the day after the disaster.

All Izushima residents evacuated following the disaster, but the number of those who has come back in the past three years is less than 100. As local elementary and junior high schools were integrated into

schools in the mainland, households with children have left the island to settle elsewhere, and now most of the island population is made up of residents who are in their 60s and older.

While many of the residents travel between the island and the mainland on fishing boats during the day, transportation becomes unavailable in times of bad weather and during the night.

"It will be difficult to evacuate all of the elderly in times of emergencies," Sakai said.

Parts of a now-vacant school building are being remodeled into a temporary evacuation shelter in case of nuclear emergency. The shelter, equipped with radiation removal filters and airlock rooms that block outdoor air, is planned to be completed by the end of fiscal 2014. It will store enough food for some 70 people to survive for three days.

The cost for the shelter, as well as a gym planned to be built on another island within Onagawa, is estimated to be around 400 million yen, which will be covered by the government. Sakai, however, says the shelter is only meant to be used for temporary evacuation. "We would eventually have to flee the island, but I wonder if anyone would be willing to rescue us if radiation surrounds the island."

According to Onagawa officials in charge of nuclear management, the town's evacuation plan is to house Izushima residents in the shelter, and then rescue them with helicopters. However, details of the plan have not been set as the town must rely on Self-Defense Forces or the Miyagi Prefectural Government when arranging helicopters and pilots.

In addition, while the Onagawa Municipal Government is working on mapping out evacuation plans for residents living within 30 kilometers of the nuclear plant by the end of the year, it has not reached agreement with municipalities that are willing to accept evacuees.

While groups of Izushima residents, including Terama Ward head Kikuo Suda, 65, are requesting the Onagawa government to build a bridge between the island and the mainland, the construction cost is estimated to be around 9.2 billion yen. When Land, Infrastructure, Transport and Tourism Minister Akihiro Ota visited the town in August, he told Onagawa Mayor Yoshiaki Suda that he would "consider supporting the construction of the bridge."

**Even if the government approves construction of the bridge, however, it would take at least eight years from the start of the construction to its completion.**

"We cannot wait for the government to help us. I want to evacuate on my own," Suda said.

September 23, 2014

## Radiation fears & world heritage

### Schools avoid Iwate Pref. world heritage site over radiation fears

<http://mainichi.jp/english/english/newsselect/news/20140923p2a00m0na007000c.html>

HIRAIZUMI, Iwate -- Work to remove radiation from the Fukushima No. 1 Nuclear Power Plant disaster has not been permitted at the Hiraizumi world heritage site, one of the main tourist destinations for northeastern Japan, and fewer school field trips are being made here.

Hiraizumi is known for the golden Konjikido building in its temple Chuson-ji, and the fine garden at Motsuji Temple. The temples and other structural remains in the area trace back to the Oshufujiwara Clan, which was in power during Japan's Heian Era.

In June 2011, three months after the Great East Japan Earthquake, sites in the area were registered as world heritage monuments under the name "Hiraizumi." However, in December that year, the town of Hiraizumi was designated an area requiring radiation monitoring, due to having at least 0.23 microsieverts of radiation per hour.

At the former site of Kanjizaio Temple, one of the sites included in the world heritage designation, radiation levels were measured in June 2012 at 0.30 microsieverts per hour. This led the Hiraizumi Municipal Government to contact the Agency for Cultural Affairs, saying it wanted to remove the turf and top soil at the site to lower radiation levels, but the agency turned this idea down for the reason that a national cultural asset should not be tampered with in such a way.

In the end, the municipal government was unable to conduct decontamination work at the Hiraizumi sites, but due to rain and other natural factors, the radiation levels at the former site of Kanjizaio Temple were down to 0.16 microsieverts per hour in October 2013.

Come March this year, the municipal government finally finished its two-year decontamination plan that covered the town as a whole. Katsuyoshi Sugawara, head of the town's radiation-response department, says, "The radiation levels are within national limits. There is no need for tourists to worry."

In 2012, Hiraizumi had 2.64 million tourists, the most on record, due to a boost from its registration as a world heritage site. In 2013 there were 2.14 million visitors, still more than the around 2 million a year who visited pre-earthquake. However, for 2012 and 2013, each year there were only around 35,000 junior high and high school visitors, about 70 percent of the pre-disaster level. In particular, student visitors from Hokkaido, who had made up over 40 percent of visiting students pre-disaster, were down to around 40 percent of those levels in 2013.

"It pains us because we have a long friendship with Hiraizumi, but many parents are worried about the radiation levels, and we have to cater to them," says the vice principal of one Sapporo junior high school that canceled its visits.

The Hiraizumi Municipal Government, local tourism association and Iwate Prefectural Government have worked together to visit travel companies and junior high and high schools in Sapporo to promote Hiraizumi as safe, but they have been unable to erase people's concerns.

Jin Onodera, senior managing director of the "Hiraizumi Kanko Rest Center" souvenir shop at Chuson-ji says, "It is important that junior high and high schools students visit and see what is good about our temple, so they will continue to visit us long into the future."

September 27, 2014

## Nowhere near enough buses...

### **Not nearly enough buses for mass exodus after nuclear accident**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201409270012](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201409270012)

The gargantuan task of moving residents in a nuclear crisis will fall on chartered buses, according to the local governments' evacuation plans.

The problem is there may not be nearly enough vehicles to move huge numbers of people to safety.

Some prefectures already realize they would be lucky to assemble just half the number of buses for the job.

There is also opposition from bus companies, which say they will not subject their drivers to hazardous radiation risks.

**In a 10-kilometer radius of Kyushu Electric Power Co.'s Sendai nuclear power plant in Kagoshima Prefecture, which has passed safety checks for a restart, surveys show that local governments can charter only one-fourth of buses that would be needed to evacuate residents.**

Although the prefecture plans to sign an agreement with the prefectural association of bus companies to preferentially charter vehicles, a local bus drivers' union said it will oppose the plan unless safety measures for drivers are mapped out.

According to evacuation plans submitted by Satsuma-Sendai, the city hosting the nuclear plant, and surrounding municipalities within a 30-km radius of the plant, people who need nursing care and others without family cars will have to evacuate by bus.

In response to the prefectural government's inquiries, authorities in Satsuma-Sendai and Ichiki-Kushikino said they would need 415 buses that can accommodate 30 to 50 passengers each to evacuate all residents from a 10-km radius of the nuclear plant.

The two cities own only a handful of buses, and would rely on chartered private buses in the event of a serious accident.

The number of buses owned by about 80 companies of the Kagoshima bus association totaled around 2,200 at the end of last year. Most of these buses, however, are route buses, which are not suitable for evacuating residents.

Association officials said that they can only dispatch about 100 buses in the area. In order to evacuate all residents in nine municipalities in a 30-km radius of the plant, it will require far more buses.

During an earlier session at the prefectural assembly, officials said they plan to sign an agreement with the Kagoshima bus association, but no progress in that regard.

**In addition to the lack of buses, the void of safety measures to prevent bus drivers from being exposed to radiation during an evacuation casts a shadow on plans by local governments to use chartered buses.**

Central government guidelines stipulate that ordinary people such as bus drivers must not be exposed to more than 1 millisievert of radiation annually in normal situations. However, there are no measures in place to deal with those who are exposed to higher readings.

**In addition, rules for distributing potassium iodide tablets to protect against thyroid cancer due to radiation have yet to be devised.**

"Unless measures to ensure the safety of bus drivers are put in place, we will not dispatch our bus drivers," said Shuichi Morita, chairman of a labor union for workers of private railway companies in Kagoshima Prefecture. "Even if the prefectural government reaches an agreement with the Kagoshima bus association, it is up to each bus company to decide whether to dispatch their drivers."

Tetsuro Kawahara, an executive director of the Kagoshima bus association, said all its member companies must be in agreement if a deal is to be reached with the prefecture. Officials acknowledged that prospects of reaching an agreement quickly are uncertain.

During a meeting in July in Saga Prefecture of prefectural governors from across Japan, Tottori Governor Shinji Hirai said more than 1,000 buses would be needed to evacuate residents in the event of an accident at Chugoku Electric Power Co.'s Shimane nuclear power plant in Matsue.



"We can only prepare 500 buses, even if we gather every bus in Tottori Prefecture," the governor said. As many as 470,000 people live in a 30-km radius of the plant in Shimane and Tottori prefectures.

**To evacuate all residents from the area, Shimane Prefecture alone will need more than 5,000 buses,** according to estimates.

But the number of buses available in the prefecture totals around 500.

"We cannot arrange that many buses within this prefecture," said a Shimane prefectural official. "We have requested that the central government negotiate with industry groups to provide the necessary vehicles." During an Aug. 29 news conference, Niigata Governor Hirohiko Izumida asked if it is realistic for residents to rely on chartered private buses in a case of a nuclear disaster. The prefecture hosts Tokyo Electric Power Co.'s Kashiwazaki-Kariwa nuclear power plant.

"Is it possible to make drivers from private bus companies work in areas that are highly contaminated with radiation?" Izumida asked.

Officials at Fukushima Prefecture's Nuclear Power Safety Division said they had not confirmed reports that bus companies refused to send vehicles due to concern for drivers' safety during evacuation procedures for the Fukushima nuclear disaster.

But some trucks transporting relief goods did refuse to enter areas that were highly contaminated with radiation, according to the officials.

"A private company can face legal charges if its employees are exposed to radiation because of work orders," said an official of Niigata Prefecture. "Even if we sign an agreement with bus companies, it will not ensure the efficacy of such an evacuation plan."

(This article was written by Masanobu Higashiyama and Hiroki Koike.)

September 29, 2014

## What is a hospital "designated" to treat radiation?

### Hospitals nominally designated for radiation treatment double from 2011

Kyodo

<http://www.japantimes.co.jp/news/2014/09/29/national/science-health/japan-more-than-doubles-the-number-of-hospitals-designated-as-radiation-treatment-centers/#.VCkUkBanp1s>

The number of hospitals locally "designated" to treat radiation exposure has grown to 201 from 83 before the Fukushima nuclear disaster, a survey says.

But the survey, conducted by Kyodo News, also showed that the so-called designated hospitals, as of August, were **still struggling with shortages of skilled personnel and equipment as central government pushes to restart dozens of idled reactors, many of them old.**

The hospitals were designated by local governments as medical institutions that will provide emergency treatment for radiation exposure if nuclear accidents occur. **But there are no requirements for receiving the designation — including number of doctors specialized in radiation treatment.**

This step was advised through a report compiled by the now-defunct Nuclear Safety Commission after the deadly 1999 criticality accident at a uranium-processing plant in the village of Tokai, Ibaraki Prefecture.



The Nuclear Regulation Authority is reviewing medical preparedness for nuclear disasters as part of a package of initiatives introduced in response to the Fukushima nuclear disaster but has not hammered out any specifics.

The survey was conducted from July to September, 15 years after the criticality accident at JCO Co. in Tokai on Sept. 30, 1999, which killed two people.

Responses were received from all 24 prefectural governments selected for their proximity to nuclear facilities.

September 30, 2014

## **We should not accept reactor restarts**

### **Former Tokai mayor says Japan is sleep-walking toward further nuclear disasters**

Kyodo

Speaking to around 350 people at a public meeting there Sunday, Tatsuya Murakami said the nation glossed over the Tokai disaster and upheld a “myth” about the safety of nuclear power.

“Japan was caught up in a safety myth, that a serious nuclear accident would not happen in this country,” he said.

The accident at a nuclear fuel reprocessing plant in the village occurred on Sept. 30, 1999. It left two people dead.

He said the safety myth and failure to clarify exactly why the accident took place led to mistakes that resulted in the Fukushima debacle.

The accident in Tokai, about 130 km northeast of Tokyo, killed two employees of operator JCO Co. and exposed more than 600 residents to radiation. The critical state lasted around 20 hours, through the next day.

Six JCO employees and the company itself were faulted for the accident. Workers using buckets had poured too much uranium solution into a processing tank, which led to a nuclear fission chain reaction. Focusing on the use of buckets and calling it “an unexpected problem,” the government and the nuclear industry placed the responsibility for the accident solely on JCO.

The former mayor said what officials should have done was “determine the problems of a nuclear-dependent society as a whole.”

Murakami stepped down as mayor a year ago after 16 years in office and now works as a co-representative of Mayors for a Nuclear Free Japan, a body that comprises nearly 100 former and current mayors who campaign to phase out nuclear power.

When the Tokai accident occurred, the local and central governments seemed unable to take the lead in responding. Murakami stepped in, taking a unilateral decision to evacuate residents within 350 meters of the JCO compound.

After the Fukushima disaster, the then-government of the Democratic Party of Japan declared that the nation would aim to phase out nuclear power by 2040.

But the current government, under Prime Minister Shinzo Abe of the Liberal Democratic Party, decided this year to support the continued use of nuclear power and upheld commitment to the nation's spent-fuel recycling projects.

"To some extent, the DPJ government was reflecting public opinion. But the Abe government has refused to hear what the people say," Murakami said. "In such circumstances I fear another nuclear disaster may happen."

Another speaker addressing the meeting was Keiko Oizumi, a former worker at a factory near the JCO plant. She and her husband filed for compensation against JCO and parent company Sumitomo Mining Co. for damage to their health, but in 2010 the Supreme Court threw the case out.

Oizumi spoke of how she sometimes gets to meet evacuees from Fukushima. She also described how she still sees mental-health specialists.

"I have suffered general malaise, depression, sleeplessness and other symptoms, and I still see psychiatrists," Oizumi said. "I always think I could have lived a normal life if it were not for nuclear power. . . . The JCO accident completely changed my life."

She said she feels the pain of Fukushima evacuees as her own.

"People do not bleed if they are exposed to radiation, but they bleed in their hearts," she said.

Oizumi urged supporters to take their demands to those in power.

"We should not accept reactor restarts," she said. "Now is our only chance to terminate nuclear power."

## Mount Ontake eruption raises questions

### Volcanic eruption fires concern about Kagoshima reactor restarts

Staff Writer

Saturday's eruption of Mount Ontake is likely to set back plans to restart nuclear reactors in Kagoshima Prefecture and possibly elsewhere, as local governments and residents start debating how safe the plants would be in the event of a nearby volcanic eruption.

Concern is especially high in Kagoshima, home to 11 volcanos classified as active by the Meteorological Agency.

From January to March 2011, eruptions at Shinmoedake, part of the Mount Kirishima chain, closed four railroad lines and forced the evacuation of hundreds of residents.

Last month, the Nuclear Regulatory Authority signed off on the safety of reactors 1 and 2 at Kyushu Electric Power Co.'s Sendai plant in Satsumasendai, Kagoshima Prefecture, a major step toward their planned restart.

The decision came after months of concern in Kagoshima about what would happen to the plant in the event of a volcanic eruption, but Kyushu Electric says Mount Ontake will not change its plans for Sendai. "The scale of the eruption at Mount Ontake was small, whereas in our safety measures we looked at the possibility of large eruptions. So we don't think there will be any effect on the plans to restart the Sendai reactors," Kyushu Electric spokesman Yuki Hirano said Tuesday.

But pressure on the utility and pro-nuclear politicians in both Kagoshima and Tokyo to delay, or halt, the road to a Sendai restart is growing. On Sunday, organizers said an estimated 7,500 people gathered in the city of Kagoshima to protest the restart of the Sendai reactors, the largest demonstration of its kind the prefecture has ever seen.

“Concern about what would happen to the Sendai reactors in the case of a volcanic eruption is growing rapidly in the wake of the Ontake eruption,” said Yoshitaka Mukohara, head of Antinuclear Kagoshima Network.

Ardent pro-nuclear Kagoshima Gov. Yuichiro Ito has said the only two local government heads that need to agree to a restart of the reactors are himself and Satsumasendai Mayor Hideo Iwakiri, a strong advocate of turning the reactors back on.

Since 1974, Satsumasendai, a city of about 100,000 people, has received more than ¥23 billion in nuclear power subsidies.

But a rush by Ito to restart the reactors could prove politically difficult. There are nine other cities within 30 km of the nuclear plant, and some of them are opposed.

Ichikikushikino, a city of 31,000 residents 10 km from the plant and where opposition to the restart is strong, passed a resolution Tuesday calling on Ito to seek the agreement of local governments around the plant, especially those within 30 km of the reactors.

## Kawauchi residents wary about lifting of evacuation order



Chika Akimoto, the only sixth-grader at Kawauchi Elementary School in Kawauchi, Fukushima Prefecture, receives instruction in September 2014. (Mainichi)

## Gov't to lift evacuation order for Fukushima village, but residents wary

<http://mainichi.jp/english/english/newsselect/news/20140930p2a00m0na005000c.html>

The Japanese government is poised to lift an evacuation order for part of the Fukushima prefectural village of Kawauchi within 20 kilometers of the disaster-struck Fukushima No. 1 Nuclear Power Plant on Oct. 1, setting most parts of the municipality free of restrictions.

The lifting of the evacuation order will almost set the stage for Kawauchi, the first local government that declared its administration will "return home" after the outbreak of the nuclear disaster, to make good on the plan 3 1/2 years after its evacuation. But residents of the village remain wary.

Kawauchi will be the second municipality within 20 kilometers of the crippled nuclear power station to have its evacuation order rescinded after the lifting in April of an evacuation order for the Miyakoji district of Tamura, its neighboring city to the north.

The population of Kawauchi is about 2,800. People have been allowed to live in the western part of the village, which is located at least 20 kilometers away from the nuclear power plant, since its designation as an emergency evacuation preparation zone was lifted six months after the outbreak of the disaster.

According to the Kawauchi Municipal Government, about half of Kawauchi residents have moved the basis of their livelihoods to the village. With the planned lifting of the evacuation order, the designation of the eastern part of the village within 20 kilometers of the nuclear plant as an "emergency evacuation preparation zone" will be lifted, making it possible for 139 households, or 275 residents, to return to live there. An area of 54 residents in 18 households in the eastern part of the village will be reclassified as an evacuation preparation zone from a "residence restriction zone."

Seishu Ono, 53, whose house sits within 20 kilometers of the nuclear power plant, has been taking shelter in a rental housing unit provided by the Fukushima Prefectural Government in the Fukushima prefecture city of Iwaki. His 3-year-old son, Masahiro, who was born after the nuclear disaster, has never been to his father's hometown. "The Kawauchi of old was surrounded by nature and the elderly men and women of the village watched over children. It was the best place for raising children, but it is different now," said Ono.

An incineration facility for contaminated waste is scheduled to be built near Ono's house, and there are also multiple storing facilities nearby for contaminated soil which was produced in the process of decontamination. The term of his rental housing unit will expire in March 2016, but Ono plans to find a new job in Iwaki as he lost his employment in the wake of the nuclear disaster, as well as find a day-care center for Masahiro in the same city and continue to live there.

Genzaburo Owada, 79, and his 77-year-old wife Roku restarted their life at their old home in a zone within 20 kilometers of the crippled nuclear power station in June. "With our house right before our eyes, we couldn't just abandon our hometown," said Genzaburo. But they are still reluctant to relinquish their temporary housing unit where they took shelter in the western part of the village. That's because before the disaster, Genzaburo used to stop by a supermarket in Futaba near the nuclear power station on his way home from work. But today, they can rely only on a mobile store that visits the temporary housing complex twice a week. Genzaburo said, "Young people will not come back because it has become inconvenient. Someday, Kawauchi will really disappear."

Some residents are opting to stay in a temporary housing complex in the Fukushima prefecture city of Koriyama where many Kawauchi villagers live. A 46-year-old woman returned to a temporary housing unit after going back to the village and suffering a brain hemorrhage there. She now commutes to a hospital in Koriyama once a week for outpatient treatment. "Before the nuclear accident, there were hospitals equipped with facilities for inpatients and emergency care in the towns of Tomioka and Okuma. ... But now there is only a clinic in the village," she said, while rubbing her still-paralyzed left arm.

Chika Akimoto, 12, is the lone sixth-grader at Kawauchi Elementary School, the only elementary school in the village. In the summer of 2013 her classmate who evacuated outside of Fukushima Prefecture said, "I

want to return to Kawauchi, but my father and mother say 'no.'" Chika decided to accept the fact that children must listen to what adults say. According to the elementary school, the number of its students dropped to 28 from the pre-disaster total of 114. No additional students are expected to return to the school in October when the evacuation order is lifted, the school says.

The central government says that it is not "compulsory" for local residents to return to the village. But 100,000-yen monthly compensation payments for psychological distress will be terminated one year after the lifting of the evacuation order. Atsushi Shida, who heads a non-profit organization that supports residents in temporary housing in Koriyama, said, "Kawauchi village used to depend on coastal towns for education and medical services. I wonder if its former residents can really live there now even if they are urged to return to the village, with the coastal areas yet to be rebuilt."

## Koizumi about volcanic eruption

### **Koizumi points to Mt. Ontakesan eruption as another reason to end nuclear dependence**

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201409300025](http://ajw.asahi.com/article/behind_news/politics/AJ201409300025)

Former Prime Minister Junichiro Koizumi used the deadly Sept. 27 eruption of Mount Ontakesan in central Japan to renew his call to move the nation away from its dependence on nuclear energy.

"Even experts say they never expected Mount Ontakesan to erupt. Unexpected incidents can occur at any time," Koizumi said Sept. 29, when talking with reporters. "Earthquakes, tsunami and eruptions occur all over Japan so it must not have nuclear power plants."

Koizumi made the comments while attending an anti-nuclear concert in Tokyo organized by musician and activist Ryuichi Sakamoto.

He addressed the concert audience along with Morihiro Hosokawa, another former prime minister. They both stressed the need to create a nation free of nuclear power.

Koizumi also said he will not get involved in the Fukushima prefectural gubernatorial election scheduled for Oct. 26. Dealing with the aftermath of the accident at the Fukushima No. 1 nuclear power plant, which was triggered by the March 11, 2011, Great East Japan Earthquake and tsunami, is expected to be a major election issue.

Hosokawa said that he would also stay out of the gubernatorial race there.

"Everyone in Fukushima understands even without being told that Japan should move away from nuclear energy," Hosokawa said. "Even without saying 'no' to nuclear energy, they know what the problem is."

## Japan still caught in the "safety myth" of nukes

### **Former Tokai mayor says Japan is sleep-walking toward further nuclear disasters**

<http://www.japantimes.co.jp/news/2014/09/30/national/former-tokai-mayor-says-japan-sleep-walking-toward-nuclear-disasters/#.VCruYxanp1s>

by Keiji Hirano

Kyodo

TOKAI, IBARAKI PREF. – The Fukushima nuclear disaster reflects a failure by the government to learn from Japan's first deadly nuclear accident 15 years ago in Tokai, Ibaraki Prefecture, according to the village's former mayor.

Speaking to around 350 people at a public meeting there Sunday, Tatsuya Murakami said the nation glossed over the Tokai disaster and upheld a "myth" about the safety of nuclear power.

"Japan was caught up in a safety myth, that a serious nuclear accident would not happen in this country," he said.

The accident at a nuclear fuel reprocessing plant in the village occurred on Sept. 30, 1999. It left two people dead.

He said the safety myth and failure to clarify exactly why the accident took place led to mistakes that resulted in the Fukushima debacle.

The accident in Tokai, about 130 km northeast of Tokyo, killed two employees of operator JCO Co. and exposed more than 600 residents to radiation. The critical state lasted around 20 hours, through the next day.

Six JCO employees and the company itself were faulted for the accident. Workers using buckets had poured too much uranium solution into a processing tank, which led to a nuclear fission chain reaction. Focusing on the use of buckets and calling it "an unexpected problem," the government and the nuclear industry placed the responsibility for the accident solely on JCO.

The former mayor said what officials should have done was "determine the problems of a nuclear-dependent society as a whole."

Murakami stepped down as mayor a year ago after 16 years in office and now works as a **co-representative of Mayors for a Nuclear Free Japan, a body that comprises nearly 100 former and current mayors who campaign to phase out nuclear power.**

When the Tokai accident occurred, the local and central governments seemed unable to take the lead in responding. Murakami stepped in, taking a unilateral decision to evacuate residents within 350 meters of the JCO compound.

After the Fukushima disaster, the then-government of the Democratic Party of Japan declared that the nation would aim to phase out nuclear power by 2040.

But the current government, under Prime Minister Shinzo Abe of the Liberal Democratic Party, decided this year to support the continued use of nuclear power and upheld commitment to the nation's spent-fuel recycling projects.

"To some extent, the DPJ government was reflecting public opinion. But the Abe government has refused to hear what the people say," Murakami said. "In such circumstances I fear another nuclear disaster may happen."

Another speaker addressing the meeting was Keiko Oizumi, a former worker at a factory near the JCO plant. She and her husband filed for compensation against JCO and parent company Sumitomo Mining Co. for damage to their health, but in 2010 the Supreme Court threw the case out.

Oizumi spoke of how she sometimes gets to meet evacuees from Fukushima. She also described how she still sees mental-health specialists.

"I have suffered general malaise, depression, sleeplessness and other symptoms, and I still see psychiatrists," Oizumi said. "I always think I could have lived a normal life if it were not for nuclear power. . . . The JCO accident completely changed my life."

She said she feels the pain of Fukushima evacuees as her own.

**"People do not bleed if they are exposed to radiation, but they bleed in their hearts,"** she said.

Oizumi urged supporters to take their demands to those in power.

"We should not accept reactor restarts," she said. "Now is our only chance to terminate nuclear power."

October 1, 2014

## Kawauchi : Evacuation order lifted

### Evacuation advisory lifted for part of Fukushima village of Kawauchi

<http://www.japantimes.co.jp/news/2014/10/01/national/radiation-evacuation-advisory-lifted-part-fukushima-village-kawauchi/#.VCvidhanp1s>

JJI

KAWAUCHI, FUKUSHIMA PREF. – The government lifted its evacuation advisory Wednesday for the eastern part of Kawauchi, which is located within 20 km of Tokyo Electric Power Co.'s disaster-stricken Fukushima No. 1 nuclear power plant.

The eastern Kawauchi area became the second place to see the advisory lifted in the former no-go zone set up in Fukushima Prefecture after the start of the triple meltdown at the Tepco power plant, triggered by the 9.0-magnitude earthquake and tsunami in March 2011. The advisory for the Miyakoji district of Tamura, in the same prefecture, was removed in April.

The restricted residential area in Kawauchi was also realigned as a zone preparing for the evacuation advisory to be lifted.

About 275 residents from 139 families will be affected by the advisory's lifting, while the zone realignment will affect 54 residents from 18 families, according to data as of June 1.

Only those who have been temporarily living in their own houses under a long-stay program for the preparation zone are expected to make a swift return. The number of such people totaled 48, from 22 families, as of Thursday. The other residents would likely refrain from returning home soon, partly because living conditions remain difficult.

The central government and the municipal government of Kawauchi plan to invite supermarket operators to open stores by the end of next March.

In April 2012, the eastern Kawauchi area, which had been part of the no-go zone within a 20-km radius of the crippled nuclear plant, was realigned into preparation and restricted residential zones, depending on radiation levels.

In both zones, displaced residents were allowed to visit their homes during the daytime. But on April 26 of this year, residents in the preparation zone were allowed to stay there for three months, which the government attributed to progress in decontamination work.



## Evacuation order lifted in Fukushima village

[http://www3.nhk.or.jp/nhkworld/english/news/20141001\\_13.html](http://www3.nhk.or.jp/nhkworld/english/news/20141001_13.html)

The Japanese government has lifted an evacuation order for part of Kawauchi Village near the crippled Fukushima Daiichi nuclear power plant.

The measure -- for the eastern part of the village in Fukushima Prefecture -- took effect on Wednesday at midnight. It affects 274 residents in 139 households.

The government says decontamination has been completed in the area. The roads and other infrastructure have been rebuilt, and utility services are up and running.

This is the second time an evacuation order has been lifted since the 2011 accident, after the Miyakoji district in Tamura City in April.

Residents can now stay in their homes and reopen restaurants or other businesses.

But some have expressed concern that a drop in radiation levels is not sufficient for a return to their former lives. Others complain that shopping and medical services are inconvenient.

Because of this, not all former residents are expected to return to the village.

Also on Wednesday, the government re-designated some areas of the village where overnight stays had been prohibited as zones preparing for the return of residents.

An evacuation order is still in place for 10 municipalities around the Daiichi plant more than 3 and a half years after the accident, affecting some 80,000 people. Entry or overnight stays are limited in some areas.

The government has designated evacuation zones in 3 categories according to radiation levels. Evacuation orders are to be lifted after decontamination is complete.

## Nuclear Risk Research Center calls for change in mindset

### Nuclear risk center chief urges change in mindset

[http://www3.nhk.or.jp/nhkworld/english/news/20141001\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20141001_37.html)

The head of **Japan's newly established Nuclear Risk Research Center** has urged everyone involved with nuclear energy to change their mindset.

The center opened on Wednesday as part of the Central Research Institute of Electric Power Industry, which is run jointly by Japanese power companies.

Center chief George Apostolakis served on the US Nuclear Regulatory Commission until June. He



specializes in analyzing risks at nuclear plants.

The center's aim is to pinpoint such risks, including those at plants that have met government requirements to restart, and to help power companies fix the problems.

Apostolakis said **Japan has been slow to introduce risk analysis, perhaps because most people think everything that meets government requirements is safe.** He added that such attitudes must change, to ensure safety.

## **NRA chief defends volcanic hazard measures**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The head of Japan's nuclear power regulator has defended its approval of volcanic hazard measures for a nuclear power plant in Kagoshima, southern Japan.

Shunichi Tanaka, the chairman of the Nuclear Regulation Authority, was speaking at a news conference on Wednesday.

His remarks follow the eruption of Mount Ontake in central Japan on Saturday without any detection of warning signs. Dozens of climbers died in the eruption.

The eruption prompted public concern over volcanic hazard measures for the Sendai plant in Kagoshima Prefecture operated by Kyushu Electric Power Company. There are active volcanoes in the prefecture. The utility had showed plans to remove nuclear fuel from the facility if it detects any signs of volcanic activity or tectonic plate movement around the plant.

The NRA officially approved the plans last month as part of its screening of measures proposed by the utility based on government requirements for the restart of offline reactors.

At Wednesday's news conference, the NRA chief said Ontake's hydro volcanic eruption is unlike any huge volcanic eruption that may occur around the Sendai nuclear power plant. He says discussing them as the same type of event is not scientific.

Tanaka said that before an enormous eruption, land movements and tremors appear much earlier than for the ongoing eruption of Mount Ontake.

The NRA has held 2 meetings with volcanologists since August. Participants pointed out the **difficulty of predicting volcanic eruptions using current knowledge and technology.**

October 2, 2014

## Experts' fears "unscientific", says Tanaka

### Nuclear safety chief counters experts over volcanic hazards

<http://mainichi.jp/english/english/newsselect/news/20141002p2g00m0dm042000c.html>

TOKYO (Kyodo) -- The chairman of the nuclear safety regulator on Wednesday countered volcanologists' claims that more discussion is needed before restarting idled reactors as it is impossible to predict volcanic hazards.

All reactors in Japan remain offline. But the Sendai plant, located in a region of southwestern Japan with active volcanoes, will restart soon after the Nuclear Regulation Authority gave a safety clearance to the facility in September based on new, tighter regulations.

NRA Chairman Shunichi Tanaka told a press conference that he disagrees with "arguments that we should stop all social activities because we never know when natural disasters happen," saying **there is a "gap" in perception between him and the volcanologists.**

The nuclear safety regulator judged in September that risks of massive volcanic eruptions around the two-reactor Sendai plant in Kagoshima Prefecture are negligible during the facility's lifespan.

Public debate about the safety of the Sendai plant has been further fueled by Saturday's eruption of Mt. Ontake in central Japan that killed about 50 people.

**The Sendai plant, on the island of Kyusu, is some 50 kilometers from Mt. Sakurajima, an active volcano. There are a total of five calderas around the complex.**

### NRA chairman calls concerns over safety of Sendai nuclear plant due to volcanoes 'unscientific'

<http://mainichi.jp/english/english/newsselect/news/20141002p2a00m0na009000c.html>

The chairman of Japan's nuclear watchdog has confirmed that the levels of safety screening on the idled Sendai nuclear power plant are appropriate, arguing that comparisons of the recent eruption of Mount Ontake and possible eruptions of volcanoes located near the nuclear plant are "unscientific."

Nuclear Regulation Authority (NRA) Chairman Shunichi Tanaka told a news conference on Oct. 1 that it is unscientific to compare the recent phreatic eruption on Mount Ontake in central Japan and possible volcanic eruptions in areas near the Sendai plant, arguing that the natural phenomena envisaged in the plant's safety measures are different from what has happened on Mount Ontake.

Concerns over safety measures against volcanic eruptions for the Sendai plant in Kagoshima Prefecture, whose No. 1 and 2 reactors recently passed the NRA's screening process and are waiting to be restarted, were further fueled by the Mount Ontake eruption on Sept. 27.

According to the Japan Meteorological Agency's liaison conference on the prediction of volcanic eruptions, the scale of the eruption on Mount Ontake is small as the amount of ejected matter stands at some 1 million metric tons. Meanwhile, the amount of volcanic ejecta from possible volcanic eruptions concerned in areas near the Sendai plant is estimated to be 1 million times greater than that of the Mount Ontake

eruption, and pyroclastic flows are predicted to reach at least 100 kilometers from the craters. If lava reached nuclear reactors under operation, the NRA or plant operator Kyushu Electric Power Co. would not be able to handle the situation.

For this reason, the NRA is set to beef up its surveillance system for volcanic activities and take necessary measures, such as stopping nuclear reactors and removing nuclear fuel, when signs of volcanic eruptions are detected.

Kyushu Electric has categorized 14 volcanoes located within 160 kilometers in diameter from the Sendai plant as mountains that "may become active in the future" and "cannot be ruled out over the possibility of becoming active volcanoes." The utility has judged that even if those mountains erupted, it would not affect the Sendai plant. It has set up measures for volcanic ash, based on its evaluation that as much as 15 centimeters of ash from Mount Sakurajima would fall on the premises of the plant. The NRA confirmed that the utility's evaluation was appropriate, and Tanaka said, "We have concluded that even larger eruptions than Mount Ontake would not affect the Sendai plant."

However, huge volcanic eruptions on the scale of the NRA's calculations are believed to occur only once every 10,000 years, and further research on such levels of eruption have not been successful.

The NRA has established a committee comprised of a group of volcanologists and begun drawing outlines of a system for volcano observations and for reading signs of volcanic eruptions. However, setting up a yardstick for predicting eruptions is a subject of future discussion as many volcanologists have argued that current studies on volcanoes fall short in predicting eruptions.

October 3, 2014

## Revising estimates about quakes

### Nuclear operator raises possible quake strength

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the Fukushima Daiichi nuclear power plant in northeastern Japan has increased by 50% its estimate of the strength of an earthquake that could hit the plant.

The utility had so far estimated the maximum strength of an earthquake that might hit Fukushima Daiichi at 600 gals and the possible height of a tsunami at 14 meters.

But in the 2011 earthquake and tsunami in northeastern Japan, the plant's area registered strength of up to 675 gals and the tsunami height was 15.5 meters.

The Nuclear Regulation Authority had instructed the Fukushima Daiichi plant's operator to consider revising its estimates.

It made the suggestion to prevent the reactors' containment vessels from being damaged or contaminated water from leaking. The vessels house melted nuclear fuel as a result of the 2011 nuclear accident.

At a meeting of experts called by the authority on Friday, the operator of the Fukushima Daiichi suggested raising the estimated strength of a possible earthquake from 600 gals to 900 gals.

They also increased the height of a possible tsunami to 26 meters.

The authority will shortly decide whether it will approve the figures presented by the utility.

October 4, 2014

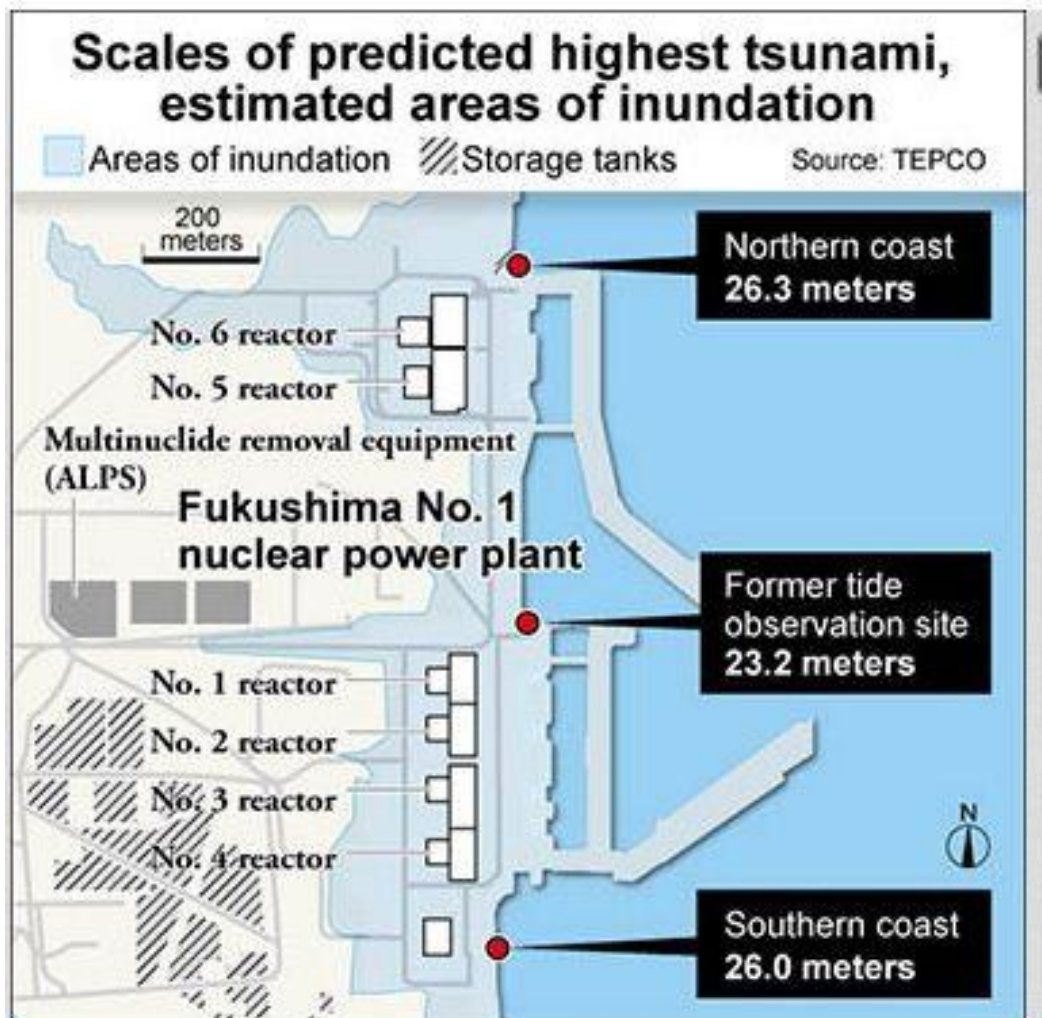
## Double previous tsunami estimate

### TEPCO doubles tsunami height in damage estimate for Fukushima plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201410040044>



A temporary levee constructed on the coastline at the Fukushima No. 1 nuclear power plant after the March 2011 Great East Japan Earthquake and tsunami (Asahi Shimbun file photo)



By TSUYOSHI NAGANO/ Staff Writer

A tsunami of 26 meters would inundate the already-stricken Fukushima No. 1 power plant, causing a huge amount of radioactive substances to spill into the sea, according to Tokyo Electric Power Co.'s updated estimates.

The crippled plant's operator told a Nuclear Regulation Authority commission Oct. 3 that **it raised its projected tsunami height to 26.3 meters--nearly double its previous estimate--**and increased the scale of the largest potential earthquake by 1.5 times.

According to the new estimate, if such a towering tsunami struck the facility, hundreds of trillions of becquerels of cesium-137 could be released into the ocean from the basements of reactor buildings. Currently, nuclear plant operators across Japan are making efforts to receive permission to resume operations of reactors that have remained or were put offline after the nuclear crisis started in March 2011.

Other utilities have been raising the scale of the highest possible tsunami for individual plants to meet stricter safety standards introduced following the Fukushima disaster. But TEPCO had not revised its



height estimate for tsunami because the new safety standards do not apply to the Fukushima No. 1 plant reactors, which are scheduled to be decommissioned.

However, due to the unique risk factors at the plant, including destroyed reactor buildings and accumulating contaminated water, the NRA demanded that TEPCO review its tsunami forecast and countermeasures.

TEPCO's latest estimate assumed a scenario in which a tsunami of 26.3 meters triggered by an earthquake of 900 gals struck the coast at the north end of the facility. A gal is a unit of gravitational acceleration. TEPCO's previous report assumed a strongest possible quake of 600 gals.

Some of the plant's reactors are at the southern part of the plant, where the elevation is 10 meters above sea level. Reactors in the north lie on land 13 meters above sea level.

Tsunami of 15.5 meters struck the southern coastal area following the magnitude-9.0 earthquake in 2011. Projecting a succession of smaller tsunami at a maximum height of 14 meters may inundate the nuclear power plant, TEPCO erected 14-meter-tall temporary levees at some areas in the south following the disaster.

**However, the latest estimate shows that the highest potential tsunami exceeds the height of the land and levees. Such a deluge would thus swamp the reactor buildings, where highly contaminated water has accumulated, causing the release of radioactive substances.**

In the new forecast, TEPCO said storage tanks for radioactive water would not be affected by such a tsunami because they are situated on higher ground. It also said damaged reactor buildings could withstand the potential strongest quake of 900 gals.

**To minimize the impact of the estimated 26.3-meter tsunami, TEPCO said it will reduce the vast quantity of radioactive water accumulating on site instead of raising the height of the levees to block tsunami.**

According to TEPCO officials, the amount of tainted water estimated to spill into the ocean could be reduced to 30 percent by filling in trenches near reactors, where a large quantity has accumulated. The NRA is not expected to demand TEPCO raise the height of levees, as there is no equipment around the reactor buildings that could cause critical damage in the event of inundation. However, the nuclear watchdog plans to check the appropriateness of TEPCO's latest estimate and proposed countermeasures.

## **Fukushima No. 1 at risk of 26-meter tsunami: Tepco**

<http://www.japantimes.co.jp/news/2014/10/04/national/fukushima-no-1-at-risk-of-26-meter-tsunami-tepc/#.VC-9SRanp1s>

JJI

Tokyo Electric Power Co. has warned its stricken Fukushima No. 1 nuclear plant in Fukushima Prefecture could be hit by tsunami as high as 26.3 meters.

The deluge would likely cause seawater to mingle with the radiation-tainted water accumulating in the basements of the reactor buildings at the six-unit plant, allowing 100 trillion becquerels of cesium to escape, according to an estimate that the utility, known as Tepco, revealed Friday at a meeting of the Nuclear Regulation Authority.

Tepco said a tsunami of that size occurs once every 10,000 to 100,000 years.

The Fukushima No. 1 plant, more than 40 years old, was crippled by the March 2011 earthquake and tsunami after waves as high as 15.5 meters inundated the facility, knocking out all power and disabling the vital backup cooling systems for reactor Nos. 1 to 4, triggering three core meltdowns. Tepco also said the nearby Fukushima No. 2 nuclear plant, which is nearly as old as Fukushima No. 1, could be hit by tsunami of up to 27.5 meters, but that its idled reactors and fuel pools would not be damaged by the event.

October 5, 2014

## Volcanic risks and nukes

### Difficulties remain in protecting nuclear plants from volcanic eruptions

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201410050034](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201410050034)

THE ASAHI SHIMBUN

The deadly eruption of Mount Ontakesan in central Japan has rekindled concerns about whether Japan's nuclear power plants, such as the Sendai plant in Kagoshima Prefecture, have adequate safeguards for dealing with such a disaster.

Government officials insist that the size and nature of the Sept. 27 eruption that killed at least 51 people in the deadliest volcanic upheaval in the postwar era differ from possible eruptions at mountains located near nuclear plants.

"Safety will be secured because strict screenings have been conducted based on conditions of much larger eruptions than the recent one at Mount Ontakesan," Prime Minister Shinzo Abe said at an Oct. 2 Upper House plenary session, offering assurances of the Sendai plant's safety.

Kyushu Electric Power Co., which operates the plant, is working to resume operations there sometime early next year.

Active volcanoes are located near the Sendai plant, with Mount Sakurajima about 50 kilometers away and Mount Kirishima about 60 km away.

In the past, huge volcanic eruptions have led to the formation of large calderas and pyroclastic flows in the area.

Major eruptions occur in Japan about once every 10,000 years. However, nuclear plants have to implement measures depending on the risk even if the frequency of an event is low.

**Nuclear plants are not designed to withstand pyroclastic flows at high temperatures.** For that reason, if such flows should reach a facility, the consequences could be disastrous.

Kyushu Electric insists that the possibility of an eruption while the Sendai plant is operating is sufficiently low. The utility also says it would be possible to capture signs of a major eruption and remove nuclear fuel beforehand.

The Nuclear Regulation Authority has supported Kyushu Electric's position.

**The removal of the nuclear fuel from the reactors is expected to take several years.**

However, the Mount Ontakesan eruption once again demonstrated the limits to accurately predicting volcanic eruptions.

Concerns about the safety measures at the Sendai plant were raised at a Sept. 30 session of a special committee of the Kagoshima prefectural assembly. Some members raised doubts about whether early signs of an eruption could be detected. Others criticized Kyushu Electric's position.

Such concerns have not changed the policy set by Kyushu Electric and the NRA.

"The event expected to occur is totally different," said NRA Chairman Shunichi Tanaka. "It is unscientific to discuss the different events at the same time."

The recent eruption at Mount Ontakesan was of a phreatic type in which groundwater was heated by magma. That is different from a massive volcanic eruption that would spew large amounts of molten lava.

At the same time, **there is no difference in the difficulty of predicting the two types of eruptions.**

There is the possibility of observing a rise in magma levels by monitoring earthquakes and changes in the mountain size. However, it is difficult to predict what level of unusual activity will lead to a certain scale of eruption in the absence of accumulated observational data.

A study group of volcanologists set up by the NRA said that it would be difficult to make a judgement about a possible eruption based on observations alone.

"Current predictions are based on experience," said Toshitsugu Fujii, chairman of the central government's coordinating committee for prediction of volcanic eruptions. **"Because we have never observed a huge eruption, there are many more factors that we do not understand** in comparison to the phreatic eruption that occurred at Mount Ontakesan."

Volcanic eruptions were not even considered a major issue in nuclear plant safety until 2013, when new standards called for taking into account eruptions at mountains lying within a 160-km radius of a nuclear plant.

Rather than huge eruptions or pyroclastic flows, one possibility that nuclear plants have addressed is falling volcanic ash.

**If ash should accumulate on transmission lines, the weight could cut the lines and the ash could also cause corrosion. Such developments could cut off external power sources to a nuclear plant.**

**There are also concerns that volcanic ash could lead to clogging of filters attached to ventilation equipment and cause malfunctioning of emergency power generators.**

If accumulated ash severs transportation routes, nuclear plants face the possibility of isolation.

At the Sendai plant, assumptions have been made that as much as 15 centimeters of volcanic ash could collect should a major eruption occur at Sakurajima. To deal with such a contingency, plans call for using heavy equipment to remove the ash, and replacement filters will also be prepared.

Because even 2 centimeters of ash could cut off overland routes for supplies, the plant is also considering possible sea routes for access. In addition, a week's supply of food and fuel will be stockpiled at the plant.

**"Daily life will be seriously affected with even an accumulation of 5 centimeters of volcanic ash,"** said Setsuya Nakada, a professor of volcanology at the University of Tokyo. "In addition to measures within a nuclear plant, there will also be a need to think about the issue on a nationwide scale, including the possible conditions facing residents living near such plants."

(This article was written by Takeshi Nakashima and Chikako Kawahara.)

October 9, 2014

## Supertyphoon arriving



## Vongfong, supertyphoon rivaling Haiyan, roaring toward Japan

AFP-JIJI

A supertyphoon on course to hit Japan over the weekend is as powerful as the deadly storm that ripped through the Philippines in 2013 killing thousands of people, meteorologists said Wednesday. The monstrous storm, named Vongfong, was picking up speed as it churned through the far west of the Pacific Ocean.

"Its strength is very much similar to Haiyan," which ravaged the Philippines in November, said a meteorologist at the Meteorological Agency.

Haiyan left nearly 8,000 people dead or missing when gusts of around 300 kph (190 mph) tore through the country, generating giant waves that swamped coastal communities.

Vongfong was registering gusts of the same strength, according to the Japanese agency.

Satellite images of Supertyphoon Vongfong show a perfectly formed eye in the middle of a gigantic swirling disc of cloud that appears to be sucking up weather systems from across the Tropics.

Its present course will see it smash into Japan some time over the weekend, just days after another typhoon whipped through the country, leaving 11 people dead or missing and causing travel chaos.

Vongfong is expected to continue strengthening over the next 24 hours but could lose some steam as it heads north.

"Normally, typhoons are strongest when they are in the Tropics. They start to gradually weaken as they move into the subtropical region and the temperate zone," the meteorologist said.

## Japanese volcanoes & "acceptably low" risk

### EDITORIAL: Risk to nuclear plants from volcanic eruptions cannot be underestimated

<http://ajw.asahi.com/article/views/editorial/AJ201410090021>

The eruption of Mount Ontakesan has raised questions about the ability of nuclear power plants to operate safely in the vicinity of active volcanoes.

The Sept. 27 disaster claimed more than 50 lives. It was a grim reminder that Japan, with 48 nuclear reactors, is studded with 110 active volcanoes. Several reactors are to be decommissioned. There are fears their nuclear fuel could leak if the facilities were damaged in a volcanic eruption.

**Not enough attention has been given to this risk in assessing whether certain sites are suitable for the construction of a nuclear reactor or the safety standards concerning the structure and operations of nuclear facilities.**

Given the current level of volcanology, there is no way to accurately predict volcanic eruptions.

Some nuclear plants are located in high-risk areas, such as the Sendai nuclear power plant in Kagoshima Prefecture. It is surrounded by volcanoes with a history of massive eruptions.

The safety of these plants should be carefully reassessed to determine whether they should continue operating.

The catastrophic accident at the Fukushima No. 1 nuclear power plant in 2011 underscored the fact that Japanese nuclear plants were not prepared to withstand a battering by towering tsunami.

The triple meltdown at the Fukushima plant prompted the Nuclear Regulation Authority to reassess the safety of nuclear reactors against all sorts of natural disasters and revised the regulatory standards

accordingly. The new standards require operators of nuclear power plants to take appropriate safety measures commensurate with the risk of an accident caused by volcanic eruptions.

The actions taken by the nuclear regulator are reasonable in themselves.

The eruption of 3,067-meter Mount Ontakesan was actually quite minor. Even so, it aroused a lot of anxiety.

Volcanic eruptions can result in a magmatic explosion or create a caldera, a cave-in formed by the collapse of land. This, clearly, could be a major problem. **Volcanic ash or massive pyroclastic flows could render nuclear plants uncontrollable.**

Shunichi Tanaka, chairman of the Nuclear Regulation Authority, referred to safety concerns raised by the Mount Ontakesan eruption during a news conference, saying, "It is unscientific to discuss different events at the same time."

He was pointing to the differences between the Mount Ontakesan eruption and huge volcanic events that could be more predictable.

**Still, the fact remains that it is next to impossible to accurately predict the timing and scale of any volcanic eruption. This is the essence of the risk posed by volcanoes with regard to the safety of nuclear power plants.**

Volcanoes are believed to remain active for several hundreds of thousands of years. The modern science of observing volcanic eruptions spans only a few decades, or roughly one-10,000th of the period during which some volcanoes are active.

Despite these facts, Kyushu Electric Power Co. is pushing to resume operations of its Sendai nuclear power plant. The utility has expressed confidence in the safety of the facility.

It insists that the possibility of a huge eruption while the Sendai plant is operating is **acceptably low**. The company also says it would be possible to detect signs of a major eruption and remove the nuclear fuel beforehand.

The nuclear watchdog has supported the utility's position.

Using the human analogy, what the utility says can be likened this way: After observing a person, who is expected to live to be 80 years old, for only three days, during which you have not seen the person sneeze, you could state, "Considering the degree and frequency of his past sneezing, we can say he will not sneeze for the time being. We will certainly know in advance when he actually sneezes."

A lot more scientific research is needed to understand volcanoes. But we should not put too much hope on such research in preparing for volcanic disasters.

It is said that major eruptions have occurred in the Japanese archipelago about once every 10,000 years. When the next big eruption will occur is anybody's guess.

**If a nuclear power plant is seriously damaged by such an eruption, the entire world, not just Japan, would be exposed to a grave threat.**

## **SPEEDI definitely out**

### **SPEEDI radiation forecasting dropped by NRA as primary alert system**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201410090062>

By TOSHIO KAWADA/ Staff Writer

Japan's nuclear watchdog has decided to scrap a warning system to alert residents to evacuate in an emergency **because it didn't function properly when there was a nuclear disaster**.

The Nuclear Regulation Authority made the decision Oct. 8 after local governments across the country called on the body to explain how data offered by the SPEEDI radioactive fallout-forecasting system should be utilized.

The municipalities are responsible for compiling evacuation plans for residents in their areas.

The System for Prediction of Environmental Emergency Dose Information was designed to determine when local residents should be evacuated in the event of serious accidents at nuclear plants and other such facilities.

But a paucity of information in the immediate aftermath of the Fukushima No. 1 nuclear power plant disaster in 2011, such as the state of its reactors, hampered the ability of SPEEDI to forecast the spread of radioactive materials from the site.

As a result, the system was not used in making the evacuation decision as the Fukushima nuclear crisis unfolded, drawing nationwide criticism.

The NRA revised its nuclear emergency preparedness and response guidelines in February 2013.

The modified guidelines state that when a severe accident occurs, residents living within a five-kilometer radius of the disaster should evacuate immediately. Those living within 30 kilometers are urged to remain indoors and later decide whether to flee based on radiation levels measured by nearby monitoring posts. The revised guidelines downgraded the importance of the data provided by SPEEDI, now calling it just "reference information."

Still, even after the revision, the NRA did not clarify how SPEEDI data should be used in developing evacuation plans, which resulted in some local governments continuing to incorporate it into their evacuation strategies on the assumption that its predictions are still reliable.

The NRA said in its new SPEEDI operation manual released Oct. 8 that it will clarify how to best integrate the system's forecasting abilities in nuclear disaster management, though it would still not be used as the primary indicator on deciding when to evacuate.

The nuclear watchdog is, for example, expected to recommend that SPEEDI be utilized to estimate exposure to radioactive iodine and other materials after a nuclear accident.

## More details from Kyushu about volcanic risk

### Kyushu Electric submits measures for volcanic eruption to nuclear watchdog

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201410090043>

By TOSHIO KAWADA/ Staff Writer

Kyushu Electric Power Co. has submitted more details on its safety measures for a volcanic eruption affecting its Sendai nuclear power plant, which is located near active volcanoes in Kagoshima Prefecture. The measures submitted on Oct. 8 are an extension of the utility's application to restart two reactors at the plant in Satsuma-Sendai. The Nuclear Regulation Authority in September gave the operator permission to restart the plant based on new safety standards.

Anti-nuclear protesters have pointed to the risk of a volcano damaging the Sendai nuclear plant in light of the Sept. 27 eruption of Mount Ontakesan in central Japan that killed dozens of climbers.

The Sendai plant is located about 50 km from Mount Sakurajima, an active volcano that erupts frequently. Another active volcano, Mount Kirishimayama, is 60 km from the plant.

Kyushu Electric's safety measures that were approved in September had already taken into account the possibility of a volcanic eruption. Under those measures, the operator will halt the reactors and transport nuclear fuel from the facility if researchers see signs that a huge eruption could occur. The company estimates the entire process to remove all the fuel will take at least five years.

The details for the measures submitted on Oct. 8 said that the Kyushu Electric president will receive seismic and tectonic observations by researchers once a year after they consult with volcanologists and seismologists.

The utility plans to notify the NRA of the results as well.

Additionally, if the company section in charge of carrying out the measures observes possible signs of an eruption, they will report the situation to the president after consulting experts.

If Kyushu Electric concludes that the situation is indeed dangerous, the president will order the removal of the nuclear fuel from the plant.

However, a company official said specific measures on removing fuel rods and where they will be transported to will be "considered when we are actually given orders to do so."

October 12, 2014

## Broken cameras raise questions about management system

### 1/3rd of monitoring cameras at Monju reactor found broken

<http://mainichi.jp/english/english/newsselect/news/20141012p2g00m0dm007000c.html>

TSURUGA, Japan (Kyodo) -- Approximately a third of 180 monitoring cameras at the Monju prototype fast-breeder reactor were found to be broken during a safety inspection last month, a source familiar with the matter said Saturday, fueling concern about the reactor operator's safety management system.

In May last year, the Nuclear Regulation Authority effectively banned operation of the Monju reactor located on the Sea of Japan coast, after finding more than 10,000 pieces of equipment at the facility in Fukui Prefecture had not been properly inspected.

The broken cameras are among 180 installed to monitor the area surrounding coolant pipes in a secondary cooling system at the reactor building. The cameras were installed following a major fire in 1995 caused by the leakage of sodium used as coolant, and put into operation in 2007, according to the source.

Around a third were broken when the NRA conducted an inspection last month -- and some had been so for more than 18 months, the source said.

The Japan Atomic Energy Agency, which operates Monju, said it was aware of the problem but could not replace broken cameras with the same type as they were no longer being made.

Last month the operator said it will extend the period of intensive reform of the Monju management system by six months through March.

The JAEA seeks a lifting of the effective ban by the NRA on operating the reactor within fiscal 2014, which ends next March 31. But the latest finding could lead to a prolonged ban, the source said.

Since achieving criticality in 1994, Monju has remained largely offline due to a series of safety problems.

The reactor was developed to play a key role in Japan's long-standing nuclear fuel recycling policy, potentially pointing the way to energy independence for the world's third-largest economy.

October 14, 2014

## New nuclear accident preparedness section

### Nuclear accident preparedness section set up

[http://www3.nhk.or.jp/nhkworld/english/news/20141014\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20141014_21.html)

Japan's Cabinet Office has set up a new section dedicated to helping local municipalities prepare for accidents at nuclear power plants.

The section consists of 50 workers from the Secretariat of the Nuclear Regulation Authority and other relevant government ministries and agencies.

Minister of Nuclear Emergency Preparedness Yoshio Mochiduki told section members that it's needless to say public awareness for creating evacuation plans is high.

Mochiduki asked them to heed the lessons learned from the 2011 Fukushima nuclear accident, and to work closely with municipalities to draw up evacuation procedures.

Until now, the Cabinet Office has only given local governments advice about disaster preparedness. That system has been criticized as insufficient as no workers were assigned full-time to disaster risk management.

Attention has recently been on the communities around the Sendai nuclear plant in Kagoshima Prefecture. Reactors there were the first to meet nuclear regulators' new post-Fukushima requirements.

Municipalities around other plants will also need support from the Cabinet Office section. And officials will face the task of improving evacuation plans through detailed support that meets the needs of each area.

October 16, 2014



## Removing cover over reactor no.1



The cover over the No. 1 reactor building of the Fukushima No. 1 nuclear power plant in June 2014 (Asahi Shimbun file photo)

### Plans to remove cover over damaged Fukushima reactor draws concern

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201410160049>

Amid local concerns of the further spread of radioactive materials, Tokyo Electric Power Co. announced plans to start dismantling the canopy installed over the destroyed Fukushima No. 1 nuclear plant's **No. 1 reactor building**.

The operation, announced by TEPCO on Oct. 15, will remove the cover that was erected in October 2011 over the building to prevent radioactive materials from entering the atmosphere.

The structure's walls and roof were destroyed in a hydrogen explosion that occurred after the plant was struck by the 2011 Great East Japan Earthquake and tsunami.

**The process, which will begin Oct. 22, is a necessary step in removing the vast amounts of highly contaminated debris, rubble and dust that remain inside the building.**

However, as the work to clear debris at the plant's No. 3 reactor building in August 2013 spread radioactive materials in the area, the Fukushima prefectural government and experts are calling for careful measures to be taken in the dismantling.

The utility plans to monitor closely the radioactivity levels and dust within the plant's grounds during the operation.

**According to TEPCO, the company has informed the prefectural government and 13 nearby municipalities that it will release the detailed schedule for the work before actually dismantling the canopy.**

In the removal, the utility will drill 48 holes in the roof of the cover, each 30-centimeter squares. From the holes, synthetic resin will be sprayed as anti-scattering agents inside the building to minimize the possibilities of radioactive materials rising.

Starting from the end of this month, two of the six roof panels will be removed to **install a camera to monitor the status of the debris inside.**

Once the condition of the rubble is better understood, a specific schedule for the dismantling process will be created. **The utility plans to begin major operations in March 2015 in hopes of starting the removal of debris in fiscal 2016.**

## Do not restart until we have the answers

### More answers about Fukushima disaster needed before reactor restarts, Niigata governor says

[http://www.japantimes.co.jp/news/2014/10/16/national/niigata-governor-says-soon-reactor-restarts/#.VEC\\_xBanrIU](http://www.japantimes.co.jp/news/2014/10/16/national/niigata-governor-says-soon-reactor-restarts/#.VEC_xBanrIU)

AP

Niigata Gov. Hirohiko Izumida said Japan should not restart any nuclear plants until the cause of the Fukushima meltdowns is fully understood and nearby communities have emergency plans that can effectively respond to another major disaster.

Izumida, whose prefecture is home to Tokyo Electric Power Co.'s seven-reactor Kashiwazaki-Kariwa plant, said on Wednesday that regulators look at equipment but don't evaluate local evacuation plans. Prime Minister Shinzo Abe is pushing to restart two reactors in Kagoshima Prefecture that last month were the first to be approved under stricter safety requirements introduced after the Fukushima disaster started. Nuclear Regulation Authority Chairman Shunichi Tanaka has called the new standard one of the world's highest.

Abe has said he will restart all reactors deemed safe, reversing the previous government's policy of phasing out nuclear power.

Regulators are inspecting 18 other reactors, including two in Niigata operated by Tepco, which runs the Fukushima plant that experienced three meltdowns following the 2011 earthquake and tsunami. All 48 workable Japanese reactors are currently offline.

The nuclear authority's approval of the two Sendai reactors in Kagoshima paves the way for their restart within few months, considered a big boost for Japan's nuclear industry.

Its operator, Kyushu Electric Power Co., however, still faces an on-site operational inspection and must obtain the consent of local authorities. Residents are mainly concerned about five cauldron volcanos in the region, though regulators rule out a catastrophic eruption before the end of the reactors' functional lifespan of 30 years. Kagoshima's governor and town officials have generally welcomed a Sendai restart.

Izumida declined to comment on another prefecture's decision, but he said Tepco was responsible for the Fukushima crisis and has no qualifications to resume operating a nuclear plant in his region without fully clarifying unanswered questions about the disaster.

Resuming operations at the Kashiwazaki-Kariwa plant is crucial to Tepco, which is indebted and nationalized due to the astronomical cost of cleaning up Fukushima and compensating affected residents. But the safety inspection has been delayed due to a prolonged investigation into active seismic faults inside the compound, which experts say may affect safety.

Ensuring protection of nearby residents from radiation exposure as part of a multilayer safety measure is an international standard, but still not compulsory to pass safety inspection in Japan. Towns as far as 30 km from the plant, an expansion from the 20 km before the crisis, are now required to compile evacuation plans, but many have not. In some prefectures, the drills exposed that evacuating all residents from the no-go zones would take days. Niigata compiled its evacuation plan in June and is set to test it next month. "Protecting the residents' lives and safety is the most important task for me as governor," Izumida told reporters in Tokyo. "I don't even want to discuss a restart."

October 17, 2014

## Faulty cameras & sense of responsibility

### Shimomura criticizes Monju operator

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Science minister Hakubun Shimomura has criticized the operator of the Monju fast-breeder prototype reactor for its **failure to properly maintain equipment**.

It recently came to light that a number of monitoring cameras at the reactor are not working.

Shimomura told reporters on Friday that it is very regrettable that the operator, the Japan Atomic Energy Agency, **lacks a sense of responsibility**.

More than 50 cameras, or about one-third of those monitoring coolant pipes, were found to be broken when Monju was inspected in September.

Shimomura said reassuring the public about Monju's safety is the minimum requirement for restarting the experimental reactor.

He said the prototype reactor may be stopped forever if the operator's poor management continues.

The Japan Atomic Energy Agency began intensive reform of Monju's management system in October last



year, following a series of problems, including inadequate inspections.

The operator initially planned to complete the reforms in one year, but recently extended the deadline by 6 months.

Monju is located on the coast of Fukui Prefecture in central Japan.

## "Scientifically, they are not safe"

### Japan reactor near active volcanos called unsafe

[http://www.washingtonpost.com/world/asia\\_pacific/japan-reactor-near-active-volcanos-called-unsafe/2014/10/17/2b10d832-55e7-11e4-b86d-184ac281388d\\_story.html](http://www.washingtonpost.com/world/asia_pacific/japan-reactor-near-active-volcanos-called-unsafe/2014/10/17/2b10d832-55e7-11e4-b86d-184ac281388d_story.html)

By Associated Press

TOKYO — A prominent volcanologist disputed Japanese regulators' conclusion that two nuclear reactors were safe from a volcanic eruption in the next few decades, saying Friday that such a prediction was impossible.

A cauldron eruption at one of several volcanos surrounding the Sendai nuclear power plant in southern Japan could not only hit the reactors but could cause a nationwide disaster, said Toshitsugu Fujii, University of Tokyo professor emeritus who heads a government-commissioned panel on volcanic eruption prediction.

Nuclear regulators last month said two Sendai reactors fulfilled tougher safety requirements set after the 2011 Fukushima disaster. The regulators ruled out a major eruption over the next 30 years until the reactors' reach the end of their usable lifespan.

A surprise eruption of Mount Ontake in central Japan on Sept. 27 has renewed concerns about the volcanos in the region.

"It is simply impossible to predict an eruption over the next 30 to 40 years," Fujii said. "The level of predictability is extremely limited."

**He said at best an eruption can be predicted only a matter of hours or days.**

Studies have shown that pyroclastic flow from an eruption 90,000 years ago at one of the volcanos near the Sendai plant in Kagoshima prefecture reached as far as 145 kilometers (90 miles) away, Fujii said. He said a pyroclastic flow from Mount Sakurajima, an active volcano that is part of the larger Aira Cauldron, could easily hit the nuclear plant, which is only 40 kilometers (25 miles) away.

Heavy ash falling from an eruption would make it impossible to reach the plant, and could also affect many parts of the country including Tokyo, he said. Many nuclear power plants could be affected in western Japan, 1,000 kilometers (620 miles) southwest of the capital.

The two Sendai reactors are the first ones approved under the new safety requirement, which added resistance to volcanic eruption as part of safety evaluation. Prime Minister Shinzo Abe is pushing to restart the two, and any of the country's 46 other workable reactors that are deemed safe, saying nuclear power is stable and relatively cheap compared to other energy source and key to Japan's economic recovery.

Kyushu Electric Power Co., which operates the Sendai plant, promised taking measures to ensure access to workers in case of ash falls of up to 15 centimeters (6 inches), while installing a monitoring system to

detect changes to volcanic activities. The utility also promised to transfer fuel rods to safer areas ahead of time if signs of eruptions are detected — a time-consuming process that experts say is unrealistic.

**Fujii said ash falling as thick as 10 centimeters (4 inches) would make any vehicle, except for tanks, virtually inoperable. Power lines would be severed due to the weight of ash on them, causing blackouts and possibly cutting off electricity to the reactor cooling system.**

Only after approving the reactors' safety, the regulatory authority established a volcano panel to discuss the impact of eruptions and countermeasures. Fujii, a member of that panel, said experts are opposed to the regulators' views. Even though catastrophic eruption could occur only once in as many as 10,000 years, a likelihood of one cannot be ruled out either, he said.

"Scientifically, they're not safe," he said of the Sendai reactors. **"If they still need to be restarted despite uncertainties and risks that remain, it's for political reasons, not because they're safe, and you should be honest about that."**

October 20, 2014

## Takahama revised safety plans

### KEPCO to submit revised Takahama safety plan

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of a power plant on the Sea of Japan coast says it will submit revised safety measures to the country's nuclear regulator as early as next week.

Officials of Kansai Electric Power Company say they have completed recalculations of the potential maximum height of a tsunami that could hit the Takahama plant.

The Nuclear Regulation Authority, or NRA, had pointed out to the utility that it underestimated the height in its first assessment. The company was obliged to conduct tsunami simulations for 2 reactors at the plant.

The 2 reactor's structural resilience against major earthquakes and other safety measures have been cleared by tests that began in July of last year.

If NRA officials find no shortcomings in the revised measures, they will draft a preliminary regulation plan that will pave the way for resuming operations at the plant.

The plan will be made public by the end of this year.

Takahama will be the second plant to receive a preliminary regulation plan from the nuclear regulator, following the Sendai plant in Kagoshima Prefecture, southern Japan.

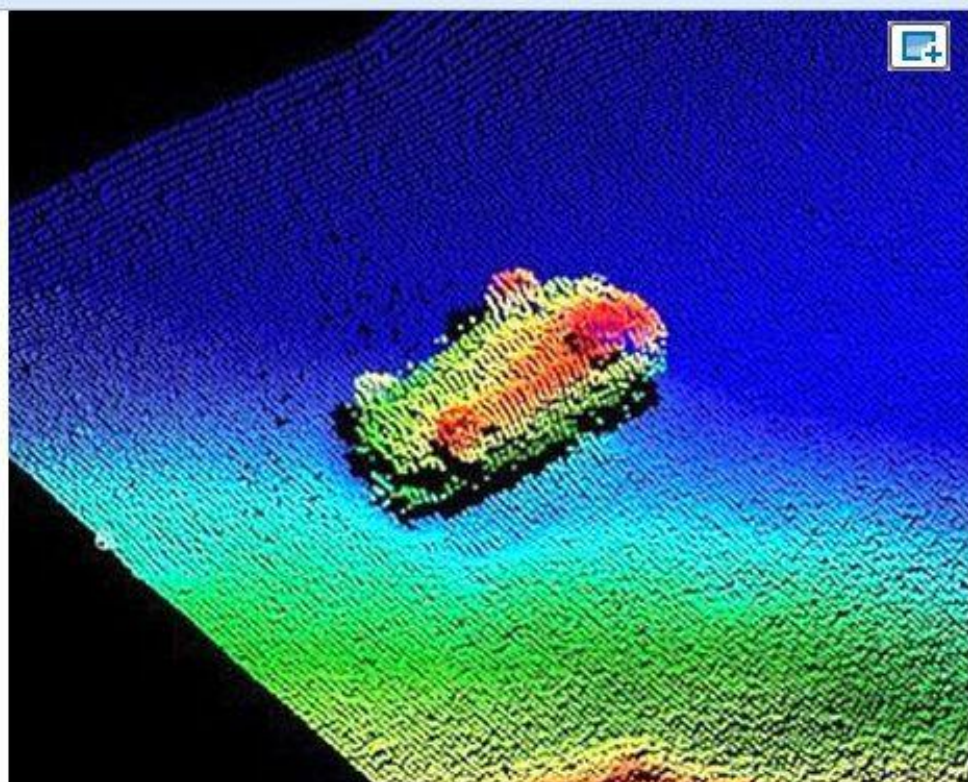
All of Japan's nuclear reactors are currently offline.

October 21, 2014

## Revising nautical charts after tsunami

### Nautical charts to be revised to reflect unprecedented changes caused by tsunami

<http://ajw.asahi.com/article/0311disaster/recovery/AJ201410210001>



This image, obtained during the Tenyo's seabed survey immediately following the Great East Japan Earthquake and tsunami, is believed to represent a submerged vehicle. (Provided by the Second Regional Coast Guard Headquarters)

By YURI IMAMURA/ Staff Writer

ONAGAWA, Miyagi Prefecture--About an hour into a Japan Coast Guard hydrographic survey mission, a crew member on lookout abruptly shouted for the dinghy to stop.

The starboard was about to touch a 200-meter-long rope floating about 1 meter beneath the sea surface near Onagawa Port, Miyagi Prefecture.

The rope was being used for an underwater operation to tie a work vessel to a buoy. The previous day, the crew discovered about 10 caissons, the gigantic concrete boxes that constitute the foundations of a breakwater, in the area.

The boxes, measuring 20 meters per side and each weighing several thousand tons, were dumped there by the tsunami three and a half years ago.

“Even those hefty caissons were swept up by the tsunami,” said Tsuyoshi Takaesu, the chief hydrographic surveyor of the main Tenyo survey vessel. “You will never know what you will encounter.”

The Japan Coast Guard continues to survey waters off the tsunami-affected Tohoku coast to revise nautical charts that take into account disaster-related rubble on the seabed, drifting objects and changing water depths that could pose a threat to safe navigation.

The mission primarily covers 24 ports and surrounding waters along the Pacific coast extending from Aomori Prefecture to Ibaraki Prefecture and is scheduled to be completed by the end of fiscal 2015.

The 2011 disaster caused changes to the seafloor on an unprecedented scale, Coast Guard officials said. And the mission so far has been full of surprises and potential dangers.

“A big mess would follow if (the rope) were to be caught in the dinghy’s propeller,” Takaesu said in a strained voice about the rope.

The dinghy’s crew approached carefully and used a pole to get the rope out of the way.

The compact dinghy, which is only 2 meters wide and 10 meters long, was deployed from the 430-ton Tenyo survey vessel on Sept. 17 to survey the shallow interior of the port.

The Tenyo, with a crew of 23 and Koichi Nishimura as captain, was surveying all parts of the harbor off the town of Onagawa for the first time in 32 years.

Takaesu, 50, has served in the post since immediately after the Great East Japan Earthquake triggered the tsunami on March 11, 2011.

The tsunami changed water depths significantly in nautical charts in at least one location for every harbor, according to officials of the Second Regional Coast Guard Headquarters, which oversees the coasts of the six Tohoku prefectures.

Nautical charts show water depths, coastal topography, locations of shoals and lighthouses, ocean flows and tide currents to ensure safe navigation of seafaring vessels and port use.

The new nautical charts will be used to set limits on the size of vessels and their cargo to ensure that seabed objects will not hit the ship bottoms.

Takaesu recalled the time he was in Kamaishi Port in Iwate Prefecture in May, when he came across a spot with a depth of only 1 to 2 meters, despite surrounding depths of 36 meters. When he hastily brought out measurement equipment, he saw something in the water that looked like Tokyo Tower.

“What’s this?” he thought, and returned to the same spot. He realized the object was a mess of entangled fishing nets.

“It gave me a shudder to realize that an object like that was still moving along,” Takaesu said. “Rebuilding efforts have proceeded visibly on land, but they probably still have a long way to go in the ocean.”

The dinghy can accommodate 10, but only five or six usually go on board because of the small interior.

A monitoring chamber in the center of the dinghy contains four computer monitors. A multi-beam sonar on the bottom measures the seafloor topography and produces graphical output.

The constant movement of the dinghy can induce sea sickness.

“I have yet to get accustomed,” said Kenta Kobayashi, a 21-year-old rookie who was assigned to do hydrographic surveys in spring.

The dinghy shuttled back and forth at a speed of 8-9 kph within a radius of about 100 meters near a tsunami breakwater under construction 1 km off Onagawa Port. It shifted its trajectory slightly to one side each time, just as you do when you wipe a floor with a cloth.

"We are passing by the caissons," Kobayashi said as the dinghy entered the waters where the objects had been spotted the previous day. When the depths became shallower, the computer screens shifted from deep blue to orange.

Koji Saito, a 25-year-old assistant hydrographic surveyor, said he was working for the Second Regional Coast Guard Headquarters in Shiogama, Miyagi Prefecture, when the quake and tsunami struck. He said he found a swept-up passenger car in Hachinohe Port, Aomori Prefecture.

"Whenever I am on a survey mission, I can't help but look for a car that may contain missing people," Saito said.

Tsunami breakwaters were destroyed in the ports of Ofunato and Kamaishi in Iwate Prefecture, where water depths lost a maximum of 10 meters. But in a July 2011 survey, the water was 15 meters deeper than indicated in the nautical chart at one location in Hachinohe Port, Aomori Prefecture. It is believed that the tsunami induced a big eddy that scooped out part of the seafloor.

Coast Guard officials said local governments that administer ports are in charge of surveying any small changes, such as those resulting from wharf construction. The Coast Guard uses those survey results to modify its nautical charts.

But the 2011 disaster created so many changes that the Coast Guard took the unusual step of conducting comprehensive surveys and republishing nautical charts for all 24 ports affected.

It takes workers two to eight weeks to survey a single harbor. They work in three shifts around the clock. Data analysis requires an additional six months to one year.

"There is a pressing need for port maintenance to help rebuilding efforts," said Hirokazu Mori, the 47-year-old chief of the hydrographic surveys division in the Second Regional Coast Guard Headquarters. "We hope to produce highly reliable nautical charts."

Japan's first nautical chart was created in 1872 by the navy and covered Kamaishi Port. Vessels of a certain dimension are legally obligated to equip themselves with nautical charts on a permanent basis.

October 22, 2014

## Work starts at reactor no.1

### Fukushima reactor cover dismantling begins

[http://www3.nhk.or.jp/nhkworld/english/news/20141022\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20141022_16.html)

The operator of the Fukushima Daiichi nuclear power plant has begun dismantling the cover of a reactor building to remove debris as part of preparations for removing the nuclear fuel from a spent fuel storage pool.

Tokyo Electric Power Company started the work on Wednesday at the No. 1 reactor building. The cover was installed after the 2011 accident to prevent the dispersal of radioactive materials.

Using a remote-controlled crane, workers made holes in the ceiling and sprayed chemicals to prevent

dust from spreading. The utility plans to make a total of 48 holes and to spray chemicals for about a week.

Then, starting around October 30th, they will remove part of the ceiling to see whether any dust comes off.

The operator hopes to begin full-scale dismantling of the cover in March and complete the task in about a year.

It expects to start clearing the debris in 2016.

**The operator says it will monitor the possible spread of radioactive materials and post the data on its website.**

The dismantling of the cover was initially due to start in July of this year. But the utility deferred the work to come up with ways to ensure that radioactive materials do not spread.

When debris from another reactor building was removed last year, some feared that radioactive materials might have dispersed and contaminated nearby rice paddies.

**The operator hopes to begin taking the fuel out of the storage pool at the No. 1 reactor building in fiscal 2017.**

## **Starting to remove cover at No.1**





Workers drill into a panel of a canopy covering the damaged No. 1 reactor building at the Fukushima No. 1 nuclear power plant on Oct. 22. (Provided by Tokyo Electric Power Co.)

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## **TEPCO starts removal work of cover over damaged Fukushima reactor building**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201410220043>

The operator of the crippled Fukushima No. 1 nuclear power plant started dismantling a canopy on Oct. 22 installed over the damaged No. 1 reactor building to prevent radioactive substances from entering the atmosphere.

Workers at the Tokyo Electric Power Co. plant started the operation shortly after 7 a.m. They used a crane-mounted drill to make eight 30-square-centimeter holes in one of the canopy's six massive panels. After drilling into the 40-meter-by-7-meter panel, the workers sprayed synthetic, anti-scattering resin inside the building to minimize the possibility of radioactive substances being stirred up into the air. Cameras will also be inserted into the building to survey the vast amount of debris inside.

The structure's walls and roof were severely damaged in a hydrogen explosion on March 12, 2011, after the plant was struck by the Great East Japan Earthquake and tsunami. The cover was erected in October 2011.

After dismantling the canopy, TEPCO plans to remove a large amount of the highly contaminated debris, rubble and dust that remain inside in fiscal 2016 and spent nuclear fuel rods stored in pools in fiscal 2017.

The canopy-removal operation will go into full swing after March 2015, as TEPCO is currently placing priority on the construction of frozen soil walls near the No. 1 reactor building to prevent groundwater from seeping in.

During work to clear debris from the plant's No. 3 reactor building in August 2013, radioactive substances spread and contaminated plant workers on site about 500 meters away.

To obtain consent from local governments for the project, the utility promised to closely monitor radiation levels during the canopy-removal work and provide them with such data.

## **Work begins toward dismantling building cover at Fukushima plant**

<http://mainichi.jp/english/english/newsselect/news/20141022p2g00m0dm072000c.html>

TOKYO (Kyodo) -- The operator of the crippled Fukushima Daiichi nuclear plant began preparatory work to dismantle the No. 1 reactor building's cover Wednesday as a first step toward removing melted fuel.

The cover shrouding the building, damaged by a hydrogen explosion in the 2011 nuclear crisis, was installed following the accident to keep radioactive materials from dispersing.

Tokyo Electric Power Co. plans to finish removing the cover around March 2016. It will then aim to begin cleaning up the debris from the hydrogen explosion and removing spent fuel stored in a pool in the building by the end of March 2018.

TEPCO said the work of removing the melted fuel inside the crippled reactor would begin in 2020 at the earliest, but said it has yet to gain a detailed grasp of the situation inside the reactor and consider the specifics of how the fuel is to be extracted.

On Wednesday morning, TEPCO started making holes in the roof of the building cover in order to insert antidispersal agents to prevent radioactive dust from being scattered. The actual dismantling of the cover will start in March 2015, the utility said.

TEPCO had initially sought to begin preparations to dismantle the building cover by last March, but the plan was delayed due to equipment failure. The plan was delayed again after local residents voiced concern that the company's debris cleanup work at the Fukushima plant may have contaminated rice crops in nearby areas.

## **Tepco gets ready to dismantle building cover at crippled Fukushima No. 1 reactor**

<http://www.japantimes.co.jp/news/2014/10/22/national/tepco-gets-ready-to-dismantle-building-cover-at-crippled-fukushima-no-1-reactor/#.VEe0yRanp1s>

Kyodo

Tepco began preparatory work on Wednesday to dismantle the cover on the reactor 1 building at the crippled Fukushima No. 1 nuclear plant, as a step toward eventually removing the melted fuel inside. [...]



## Tepco taking off cover (Nuclear Watch)

[http://www3.nhk.or.jp/nhkworld/english/news/20141022\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20141022_31.html)

## Fishing in Fukushima

### Nuclear watch : Fishing in Fukushima

[http://www3.nhk.or.jp/nhkworld/english/news/20141022\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20141022_31.html)

Fishermen in Fukushima are feeling the effects of the process of decommissioning the Fukushima Daiichi Nuclear Power Plant. They've been forced to change the way they work. And there are still restrictions on what they can catch. In this edition of "Nuclear Watch," NHK WORLD's Daisuke Kamikubo looks at how fishermen are trying to rebuild their industry.

The port of Onahama in Iwaki City is 50 kilometers south of the Fukushima plant. Fish are brought to the port four times a week. Fishermen call it test fishing.

Right after the fish arrive, they're screened for radioactive cesium. At least one per species is tested from each section of the fishing grounds.

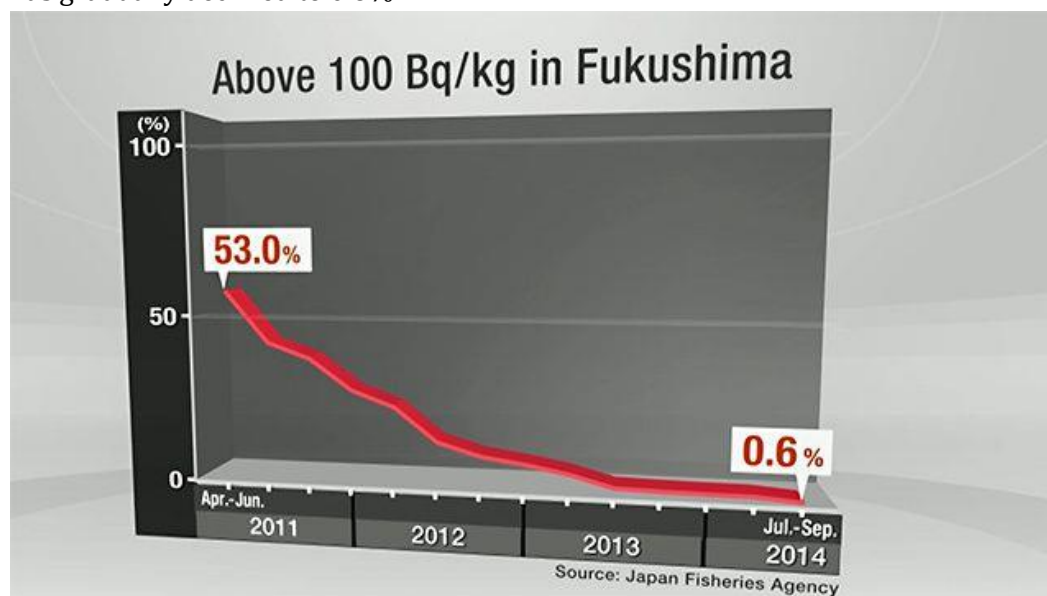
"We have a rocky road ahead. But we will display the spirit of fishermen."

*Fisherman*

Fish that are confirmed safe can be shipped to consumers throughout Japan. Following the disaster, government officials established the world's strictest standards for radiation exposure for fish.

A new limit on cesium - 100 becquerels / kg - was established.

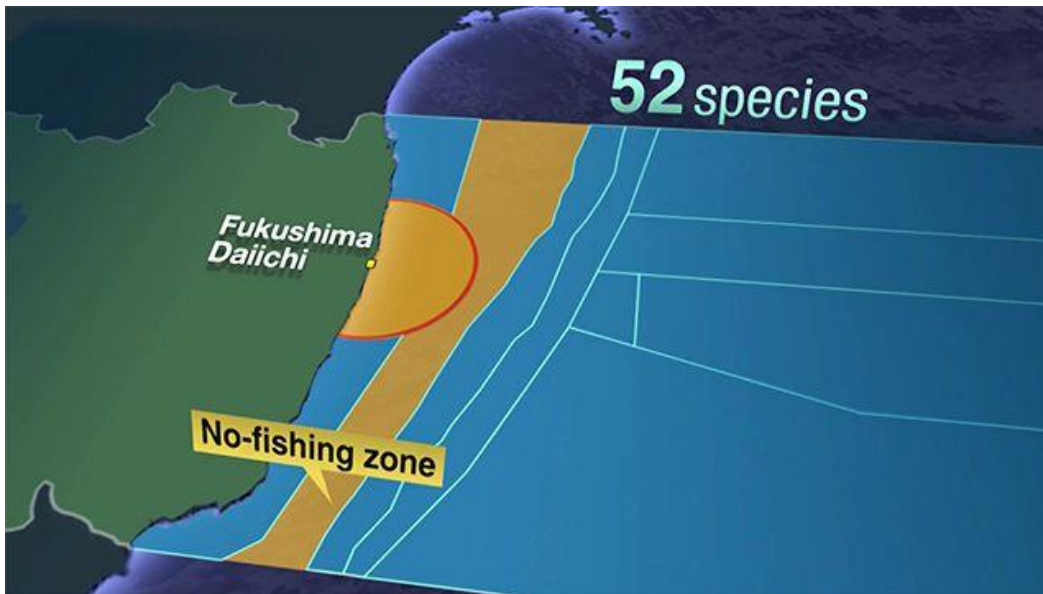
Right after the accident, 53% of fish caught in Fukushima were above the government ceiling. The number has gradually declined to 0.6%.



The Fukushima fisheries federation set an even stricter limit - 50 becquerels / kg.

All fishing in the area was halted after the accident. 15 months later, fishing for just 3 species resumed, 50 kilometers out to sea north of Fukushima.

The area has been gradually expanded. Now, fishing is allowed in almost all waters except those very close to the plant. Fishermen now catch 52 species, about one-fourth of what they could before the accident.



"We just have to go step by step. We have to go beyond making loud claims about the safety of fish from Fukushima. We should continue testing fish and prove they're safe, so consumers will eat them."

*Tetsu Nozaki / Chairman, Fukushima fisheries federation*

But fishermen have yet to resume full-scale operations. They're not allowed to catch some species including flounder, which was the main source of revenue for Fukushima fishermen. The total volume of the catch is still 1.5 percent of what it was before the disaster. Fishermen say test fishing is necessary to rebuild the industry.

"Fishermen want to be fully back in business. But they face yet another hardship...a planned release of contaminated water from Fukushima Daiichi. Plant operator TEPCO says there is no problem as radioactive substances have been removed from that water. But fishermen are not so sure."

*Daisuke Kamikubo / Onahama, Fukushima*

In August, TEPCO officials said they might discharge groundwater that had accumulated in wells dug around the plant's reactor buildings. They say the groundwater is contaminated, but will be processed before it's released into the sea.

And over 500,000 tons of radioactive water is stored in tanks. The operator says it will continue storing the water there. Local fishermen say they will never allow TEPCO to discharge the water into the sea. But they say they are not opposed to all of TEPCO's plans.



" We fishermen need to work hand in hand on decommissioning Fukushima Daiichi. We can't run away from the accident. If we wish to catch fish off Fukushima and sell them, we need consumers to know the fish are safe to eat."

*Tetsu Nozaki / Chairman, Fukushima fisheries federation*

TEPCO executives say the decommissioning will take up to 40 years. Fishermen are closely watching how the work proceeds.

## Japan ready to join international convention

### Japan to ratify international convention on nuclear accident compensation pact

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201410240041](http://ajw.asahi.com/article/behind_news/politics/AJ201410240041)

Japan intends to ratify an international convention that sets a global uniform standard for compensating victims of nuclear accidents.

The move is in line with fears of an increasing risk of a nuclear accident abroad with developing nations accelerating their efforts to construct nuclear power plants.

**The convention limits responsibility for nuclear accidents to the operator of the nuclear plant, meaning companies that manufacture nuclear plant equipment would not be liable. That provision would make it easier for Japanese manufacturers to export nuclear technology.**

However, critics charge that Japan has not yet adequately assessed the reasons for the catastrophic triple meltdown at the Fukushima No. 1 nuclear power plant in 2011 and that it is wrong to join a convention that would promote nuclear technology exports.

The Abe administration will submit a bill to the extraordinary Diet session now in progress to ratify the Convention on Supplementary Compensation for Nuclear Damage (CSC). Currently, five nations, including the United States, have ratified the treaty, which was adopted in 1997.

However, the treaty has still not entered into force because one provision has not been met--that the total installed nuclear capacity of the ratifying nations be at least 400,000 megawatts.

If Japan ratified the convention, that provision would be cleared. The United States has been lobbying Japan to join the pact. The treaty would take effect 90 days after the Diet ratified the convention.

**Convention signatory nations would share in the compensation burden when a nuclear accident occurred.**

Along with the convention, the Abe Cabinet will also submit relevant legislation to allow for implementation of the convention.

**Japan had not joined the convention because it placed excessive faith in the "safety myth" surrounding nuclear power plants.**

The Fukushima nuclear disaster put paid to that way of thinking. Moves by developing nations in Asia and elsewhere to construct nuclear power plants were another reason for joining the convention.

The CSC requires nations to provide a minimum yen equivalent of 47 billion (\$438 million) in compensation. If the total amount of compensation required exceeds that amount, signatory nations would be **required to share part of the additional burden.**

A Foreign Ministry official said, "The convention will encourage developing nations to pass legislation related to nuclear power plants."

The additional shared amount to be contributed by each nation would be calculated based on the capacity of nuclear power generation. If Japan joined the convention, it would have to come up with about 4 billion yen to deal with a potential accident abroad. **The government plans to ask electric power companies to set aside funds annually to shore up the compensation sharing package.**

Like domestic laws in nations that have installed nuclear power plants, the CSC limits responsibility for nuclear accidents to the operator of the plants, mainly electric power or fuel companies.

For that reason, companies that manufacture nuclear plant equipment or construct nuclear plants would not be held responsible for accidents that occurred in signatory nations.

A Japanese government source said U.S. officials lobbied Japan to join the CSC because it was becoming difficult for companies in the United States to export nuclear plant equipment to developing nations until the convention took effect.

An executive with a major Japanese manufacturer said, "With it looking close to impossible to construct a new plant in Japan, we would appreciate a convention that encouraged the export of nuclear plants."

However, in August, the Japan Federation of Bar Associations issued a statement opposing ratification of the CSC on the grounds **it would create a moral hazard for manufacturers, who would likely not feel obliged to deal seriously with measures to prevent nuclear accidents.**

Mie Asaoka, a vice president with the JFBA, said: "The convention encourages developing nations to pass legislation so nuclear plants can be exported to them. Can Japan claim to have fulfilled its international responsibility for having caused the accident at Fukushima?"

(This article was written by Takashi Watanabe and Senior Staff Writer Noriyoshi Ohtsuki.)

October 23, 2014

## **1% probability for catastrophic eruption over next 100 years**

### **Study: 1% chance of catastrophic eruption striking Japan in 100 years**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201410230039](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201410230039)

The probability of a large volcanic eruption bringing catastrophic damage to Japan over the next 100 years is 1 percent, a Kobe University research team said.

In a worst-case scenario, a huge eruption in the Kyushu region would emit pyroclastic flows covering widespread areas of the island and engulf the entire archipelago in ash, according to the team's estimates announced Oct. 22.

Large-scale volcanic eruptions have taken place in Japan on average once every 10,000 years. The last major eruption occurred at a seafloor volcano off Kagoshima Prefecture 7,300 years ago.

Such massive blasts are called caldera-forming eruptions because they emit a large amount of magma and cause mountains to collapse, forming caldera craters.

The team, led by magmatology professor Yoshiyuki Tatsumi, examined 4,500 volcanic eruptions that took place in Japan over the past 120,000 years.

The researchers statistically examined the frequency of large eruptions that emitted volcanic ejecta of 100 billion tons or more and concluded there is a 1-percent chance of a similar volcanic eruption taking place in the next 100 years.

Extremely large eruptions that emit more than 1 trillion tons of volcanic ejecta have a probability of 0.25 percent over the same period, the researchers said.

Among such extremely large-scale eruptions was the eruption of Kagoshima Bay's Aira caldera volcano 28,000 years ago, which emitted pyroclastic flows and volcanic ash covering extensive areas. The volcanic ejecta are still found in geological layers around the country.

**If an extremely large-scale eruption took place in the central Kyushu region, pyroclastic flows would inundate a 30,000-square-kilometer area inhabited by 7 million people. Volcanic ash would pile as high as 50 centimeters in regions of western Japan where 40 million people reside, and 20 cm in eastern Japan.**

**Ashfall of just 1 cm to 2 cm can cripple traffic networks, and ashfall exceeding 30 cm can cause buildings to collapse.**

In its report submitted last year, an expert panel of the Cabinet Office pointed out that knowledge about large-scale eruptions remains limited, and that structural efforts to study eruption prediction and countermeasures are lacking.

Toshitsugu Fujii, the head of the government's Coordinating Committee for Prediction of Volcanic Eruptions, urged the government to start discussing measures to prepare for a large-scale eruption, saying that one could take place in Japan at any moment.

The article by the Kobe University researchers will be published in the November edition of Transactions of the Japan Academy.

(This article was written by Koji Kitabayashi and Chikako Kawahara.)

October 23, 2014

## US and Russia join forces against nuke safety

### U.S. Said to Join Russia in Blocking Nuclear Safety Moves

<http://www.bloomberg.com/news/2014-10-23/u-s-said-to-join-russia-in-blocking-nuclear-safety-moves.html>

By Jonathan Tirone

Photographer: Koji Sasahara/Pool via Bloomberg

The U.S. and Russia are joining forces to block a European plan to raise the protection of nuclear reactors against natural disasters after the meltdowns at Japan's Fukushima Dai-Ichi power plant, diplomats say. Envoys from both countries are trying to derail a Swiss-led initiative that would force nuclear operators to invest more on safety, undermining attempts to harmonize global safety regulation, according to eight European and U.S. diplomats who attended meetings in Vienna last week. All asked not to be named in line with rules kept by the Convention on Nuclear Safety, the legal body overseeing the talks.

Even as relations between Russia and the U.S. have sunk to a post-Cold War low over the crisis in Ukraine, the two powers have come together to press their shared interest in resisting more stringent safety guidelines, said the diplomats. The U.S. is the world's biggest nuclear-power generator, while Russia exports more reactors than anyone else.

"Switzerland, as the initiator of the proposal, will continue to collaborate with all delegations and do everything to find a solution that is acceptable to all of us," Georg Schwarz, deputy director general of the Swiss nuclear-safety regulator, ENSI, said in an e-mailed reply to questions.

### **Nuclear Secrecy**

The U.S.-Russia collaboration reflects a nuclear-safety convention whose secrecy is laid bare in documents obtained by Bloomberg News under a Freedom of Information Act request.

It also underscores the **high stakes for an industry trying to bounce back after the Fukushima accident**. European attempts to impose higher safety standards would make nuclear power more costly just as plant operators come under price pressure from cheaper natural gas.

#### **Atomic Power Looking Better and Worse**

Prompted by the March 2011 Fukushima incident, European regulators are seeking to rewrite international standards to ensure nuclear operators not only prevent accidents but mitigate consequences if they occur, by installing costly new structures built to survive natural disasters. The meltdown caused by a tsunami forced 160,000 people to flee radioactive contamination and led to the shutdown of all of Japan's nuclear plants.

The European attempt became public in April during the previous Convention on Nuclear Safety meeting in Vienna. Switzerland consulted with engineers, regulators and diplomats from more than 50 countries before proposing the new rules. The stricter requirements were in line with a European Union directive issued three months later that required nuclear operators to bolster infrastructure at existing plants.

### **Less Stringent**

U.S. regulators aren't requiring the same stringent modifications, according to Edwin Lyman of the Cambridge, Massachusetts-based Union of Concerned Scientists, an advocacy group. European utilities pay as much as five times more to fit out plants to withstand earthquakes and floods as a result, he said. Electricite de France SA is spending about 10 billion euros (\$13 billion) on additional safety features for its 59 reactors, according to its regulator, the Autorite de Surete Nucleaire. U.S. utilities will spend about \$3 billion on portable generators and cooling reserves for about 100 reactors, FirstEnergy Corp. (FE) President Pete Sena said in July 31 testimony to the Nuclear Regulatory Commission.

### **'Hardened Core'**

French costs are higher because operators have to build a "hardened core" around their reactors that will be able to contain fallout if an accident occurs, its regulatory chief, Jean-Christophe Niel, said in July testimony to the NRC in Rockville, Maryland. Engineers are designing reinforced bunkers for back-up



power and installing emergency cooling systems to contain a meltdown. The country is also reinforcing the concrete bases of its oldest reactors and creating elite teams of emergency responders.

At last week's meeting, convened at the International Atomic Energy Agency's headquarters, Russian envoy Oleg Postnikov offered praise for his American counterpart, Eliot Kang, after the U.S. argued against the European initiative, people who attended the meeting said. U.S. officials confirmed that their delegation fell into an uneasy alliance with Russia.

The U.S. State Department declined to comment on the record. Russian diplomats accredited to the IAEA didn't respond to written requests and phone calls seeking comment.

### **'Shocking' Secrecy**

Created in response to the 1986 Chernobyl nuclear reactor meltdown in Ukraine, the convention has struggled to broaden safety standards. The group's own secrecy has often undermined its intents. One former French envoy, Jean-Pierre Clausner, said that the opacity of the organization was "shocking," according to the documents obtained under the Freedom of Information request.

**"The whole process needs to be reviewed and significant changes should be introduced if the contracting parties are willing to maintain the usefulness of the convention,"** Clausner wrote in 2005, the first year that the body allowed notes taken from its meeting to be preserved.

While nuclear meltdowns are considered cross-border incidents because of the radioactive fallout that can result, no international authority exists to compel countries to adopt safety standards. Instead, regulators from around the world routinely review each other's practices to figure out which works best. Laggards face peer criticism that can make them look bad in forums like the convention.

### **Falsified Data**

At the convention's 2008 meeting -- the last before Fukushima -- Japan was criticized by peers for being slow to overhaul a reporting system that had been caught using "falsified inspection data," the documents show. Participants also urged Japan, then the world's third-largest nuclear-power generator, to review how safe its reactors were against earthquakes.

Countries like China and India, where companies are building new reactors to cover growing electricity demand, have given some support to the European initiative, according to the diplomats. The safety-upgrade costs to new reactors aren't as burdensome as retrofitting existing infrastructure, they said. The U.S. said that the Europeans bushwhacked their delegation earlier this year by calling a vote to consider the safety amendment. **The country's nuclear industry would suffer if the European measure were to be adopted because it would create an international perception that the U.S. took safety less seriously.**

"The nuclear industry in the U.S. is under great pressure from lower natural gas prices," said Lyman from Vienna, where he is attending an IAEA meeting. "At the same time, the potential for capital upgrades to deal with post-Fukushima requirements was a worry that it could push them over the edge."

Argentina's IAEA envoy, Rafael Mariano Grossi, will convene the next safety meeting Feb. 9 to 13, when countries will decide on the Swiss measure.

The biggest challenge for the U.S. and Russia may not be convincing enough countries to vote against the measure, according to an official who organized last week's talks. Their real test, he said, will be to come up with something better.

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## Nuclear Watch: Working to Prove Safety

<http://www3.nhk.or.jp/nhkworld/english/news/nuclearwatch/20141023.html>

A nuclear power plant operator has launched a campaign to convince the public that it's ready to restart its reactors. The facility has been offline, as the Nuclear Regulation Authority checks whether it can withstand a severe accident. The operator has opened its doors to the world to showcase its new safety measures. NHK WORLD's Kurando Tago reports.

Diplomats from various countries got a firsthand look on Wednesday at TEPCO's nuclear plant in Niigata Prefecture, on the coast of the Sea of Japan.

The Kashiwazaki-Kariwa plant has 7 reactors.

During a tour, the group looked at the main anti-earthquake building that'll serve as a command center in case of an emergency. They also viewed power vehicles, water pumps and flood barriers that can withstand 15-meter tsunamis.

Many had questions about the plant's safety. They wanted to know more about the specifications of the equipment to be used in a disaster.

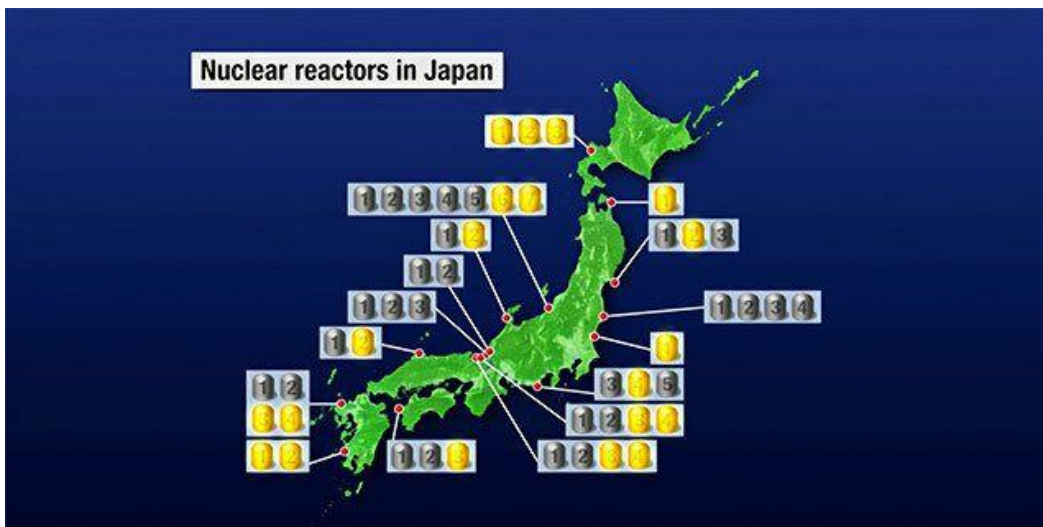
"It's hard for me to make any judgment on this. I can only appreciate to gain access to see by my own."

*Vitor Diniz / Brazilian Embassy official*

"I was quite impressed by the reactors, turbine buildings, anti- tsunami, and anti-seismic measures. I was also impressed with the firefighting systems at the facility."

*Alexander Khokhev / Russian Embassy official*

Japan has 48 nuclear reactors and all are currently offline. So far, the Nuclear Regulation Authority has received applications to re-start 20 of them.



Last September TEPCO applied for the NRA's screening process to restart 2 reactors at this plant.





TEPCO's business has been deteriorating since the 2011 Fukushima nuclear accident. A senior official says the company is staking its fate on the restart of the Kashiwazaki-Kariwa plant. The company hopes to do so by stressing the plant's safety.

"We organized today's event in the hope of letting people around the world know what types of measures we have taken at the nuclear power plant that we hope to restart. We want people to feel reassured."

*Katsuhiko Hayashi / TEPCO official*

Plant operators in Japan still need to satisfy all mandatory government regulations. They include a re-examination of the faults that run under the facilities.

The operators are doing all they can to pass the regulations.

They're working hard to improve safety measures. They hope to win back public trust by communicating their progress to the world.

October 24, 2014

## Volcanic eruption could finish Japan

### Colossal volcanic eruption could destroy Japan at any time: study

<http://www.japantimes.co.jp/news/2014/10/24/national/colossal-volcanic-eruption-could-destroy-japan-at-any-time-study>

AFP-JIJI

Japan could be nearly destroyed by a volcanic eruption over the next century that would put nearly all of its population of 127 million people at risk, a new study says.

"It is not an overstatement to say that a colossal volcanic eruption would leave Japan extinct as a country," Kobe University earth sciences professor Yoshiyuki Tatsumi and associate professor Keiko Suzuki said in the study, released publicly on Wednesday.

The experts said they analyzed the scale and frequency of volcanic eruptions throughout the archipelago over the past 120,000 years and calculated that the odds of a devastating eruption at about 1 percent over the next 100 years.

The chance of a major temblor striking Kobe within 30 years was estimated at about 1 percent just a day before a 7.2-magnitude quake struck the port city in 1995, killing 6,400 people and injuring nearly 4,400 others, the study noted.

"Therefore, it would be no surprise if such a colossal eruption occurs at any moment," it added.

The Kobe University researchers said their study is critical because Japan is home to about 7 percent of the volcanoes that have erupted over the past 10,000 years.

A disaster on Kyushu, which has been struck by seven massive eruptions over the past 120,000 years, would see an area with 7 million people buried by flows of lava and molten rock in just two hours, they said.

Volcanic ash would also be carried by westerly winds toward the main island of Honshu, making nearly the entire country "unlivable" as it strangled infrastructure, including key transport systems, they said. It would be "hopeless" trying to save about 120 million living in major cities and towns across Honshu, the study said.

The study called for new technology to more accurately grasp the state of the "magma reservoirs" that are spread across the Earth's crust in layers a few kilometers deep.

## Ready to erupt - Ioyama volcano only 12km away from Sendai plant

### Volcano near Sendai nuclear plant is shaking and may erupt: Japan weather agency

<http://www.japantimes.co.jp/news/2014/10/24/national/volcano-near-sendai-nuclear-plant-shaking-may-erupt-japan-weather-agency/#.VEuNZxanp1s>

Reuters

Authorities warned on Friday that a volcano a few dozen kilometers from the Sendai nuclear plant in Kagoshima Prefecture was showing signs of increased activity and may erupt. It warned people to stay away from the summit.

The warning comes nearly a month after another volcano, Mount Ontake, erupted suddenly while it was crowded with hikers, killing at least 57 people in Japan's worst volcanic disaster in nearly 90 years.

Ioyama, a mountain on the southwestern island of Kyushu, has been shaken by small tremors and other signs of rising volcanic activity recently, including a tremor lasting as long as seven minutes, a mountain on the southwestern island of Kyushu, has been shaken by small tremors and other signs of rising volcanic activity recently, including a tremor lasting as long as seven minutes, an official at the Meteorological Agency's volcano division said.

"There is an increase in activity that under certain circumstances could even lead to a small scale eruption, but it is not in danger of an imminent, major eruption," the official said.

The warning level on the mountain has been raised from the lowest possible level, normal, to the second-lowest, which means that the area around the crater is dangerous, he added.

Ioyama lies in the volcanically active Kirishima mountain range and is roughly 64 km from the Sendai nuclear plant, which is run by Kyushu Electric Power Co. The Japanese government wants to restart the plant even though the public remains opposed to nuclear power following the Fukushima crisis.

Critics point out that the Sendai plant is only 50 km from Mount Sakurajima, a highly active volcano that erupts frequently. There are five giant calderas — crater-like depressions formed by past eruptions — in the region, and the closest one is 40 km away.

Critics point out that the Sendai plant is only 50 km from Mount Sakurajima, a highly active volcano that erupts frequently. There are five giant calderas — crater-like depressions formed by past eruptions — in the region, and the closest one is 40 km away.

The plant still needs to pass operational safety checks as well as gain the approval of local authorities, which means it may not restart this year.

Before giving its initial green light to restart the plant in July, the Nuclear Regulation Authority said the chance of major volcanic activity during the life span of the Sendai nuclear plant was negligible.

On Friday, the warning level for the Sakurajima volcano was at 3, which means people should not approach the peak.

Japan lies on the “Ring of Fire” — a horseshoe-shaped band of fault lines and volcanoes around the edges of the Pacific Ocean — and is home to more than 100 active volcanoes.

Experts warn that the mammoth magnitude-9.0 earthquake in March 2011 may have increased the risk of volcanic activity throughout the nation, including that of iconic Mount Fuji.

October 25, 2014

## **Alarm sounded for volcanic eruption of Mt. Ioyama in Miyazaki**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201410250030](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201410250030)

Road access to Mount Ioyama in Miyazaki Prefecture was closed Oct. 24 after the Japan Meteorological Agency warned that a small-scale eruption could occur.

The agency's Fukuoka Regional Headquarters urged people not to enter areas within a radius of 1 kilometer from the crater of the 1,317-meter-high mountain, which is part of the Kirishima range and located in the Ebino-kogen Highlands.

In response, the Miyazaki prefectural government and the city government of Ebino closed roads that run through the area, as well as three climbing routes.

According to the regional headquarters, volcanic tremors have increased around Mount Ioyama since June. On Aug. 20, a volcanic tremor lasted about seven minutes. Crustal changes in the northwestern part of the mountain have also been observed.

Although an Oct. 21 on-site survey did not confirm the presence of fumarolic gases, the government's Coordinating Committee for the Prediction of Volcanic Eruptions said Oct. 23 that Mount Ioyama must be carefully monitored because of its increasing volcanic activity.

Magma eruptions have occurred twice on Mount Ioyama since the 14th century.

Mount Ioyama is located about 5 kilometers northwest of Mount Shinmoedake, which had a magma eruption in 2011, the first in 300 years.

The warning comes almost one month after Mount Ontakesan straddling Nagano and Gifu prefectures erupted, claiming at least 57 lives, making it Japan's worst postwar volcanic disaster.

October 28, 2014

## Fire at Genkai plant

### Small fire at Genkai nuclear power plant

[http://www3.nhk.or.jp/nhkworld/english/news/20141028\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20141028_21.html)

A small electrical fire broke out in an auxiliary building at the Genkai nuclear power plant in Saga Prefecture, western Japan. Workers used extinguishers to immediately put it out.

Kyushu Electric Power Company reported that the fire was handled properly and there was no leak of radioactive materials.

Officials say that smoke from an electrical breaker was detected at around 9:35 AM on Tuesday, in a building near the No.3 and 4 reactors. The fire started in a room that contains devices used to measure radioactive levels of wastewater.

The operator says radioactivity monitors installed inside and outside the room showed no changes. Officials also say they believe no radioactive leaks or exposure to workers took place.

Equipment for the control and operation of the reactors is located in the building adjacent to the reactors.

The operator and local fire department are jointly investigating the cause of the fire.

Kyushu Electric has applied to restart the No.3 and 4 reactors at the plant. The Nuclear Regulation Authority is currently screening the reactors to check whether they meet the necessary safety requirements.

### Fire breaks out at Genkai nuclear plant in Kyushu

<http://mainichi.jp/english/english/newsselect/news/20141028p2g00m0dm063000c.html>

FUKUOKA (Kyodo) -- A fire broke out at auxiliary building at the Genkai nuclear plant in Saga Prefecture on Tuesday but it was put out by plant workers with fire extinguishers, its operator Kyushu Electric Power Co. said.

The incident caused no injury and no outside leakage of radioactivity, according to the utility. Smoke was seen coming from an electric breaker in the basement of the auxiliary building for the No. 3 and No. 4 reactors at the plant around 9:35 a.m. Firefighters are investigating the cause of the fire.

October 29, 2014

## Sendai plant perfectly safe, says Mayor

### Mayor says Sendai plant able to withstand any disaster, despite misgivings

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201410290042](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201410290042)

SATSUMA-SENDAI, Kagoshima Prefecture--Mayor Hideo Iwakiri asserted that the Sendai nuclear power plant can withstand any disaster, a position that is at odds with the nuclear watchdog's contention that 100-percent safety can never be guaranteed.

While Iwakiri was savoring the decision to move toward a restart, some mayors from municipalities in disaster-stricken Fukushima Prefecture said not enough had been done to figure out proper evacuation procedures in the case of a nuclear accident.

Iwakiri said the two-reactor facility, which received clearance to be reactivated under new rules imposed by the Nuclear Regulation Authority, could withstand a Fukushima-level disaster.

"I believe the central government has effectively ensured the safety of the plant. That is why I made a final decision as early as possible," Iwakiri said at a news conference on the evening of Oct. 28 after he and the municipal assembly approved the restart of the facility.

The town became the first to approve the restart of a nuclear plant under stricter safety requirements following the triple meltdown at the Fukushima No. 1 nuclear power plant in March 2011.

"I believe the plant can 100 percent cope with a tsunami and earthquake on the scale that hit Fukushima as well as a possible nuclear accident," Iwakiri said.

The mayor has been a major backer of nuclear energy even after the Fukushima catastrophe.

Asked about the possibility of multiple disasters involving a typhoon, an earthquake and a volcanic eruption simultaneously striking the plant, Iwakiri said it was not something he gave any "consideration to at this moment."

Such a multiple disaster was not contemplated when the NRA screened the plant's safety.

His assurance that the Sendai plant is absolutely safe is at odds with the NRA's opinion.

In releasing a draft review paper for the Sendai plant in July, Shunichi Tanaka, chairman of the NRA, declined to state that the plant is absolutely safe.

During briefings to local residents, the Secretariat of the NRA said it was impossible to make such a guarantee.

With the city's approval, the plant can be rebooted early next year once operator Kyushu Electric Power Co. completes the necessary paperwork and on-site operational checks.

Iwakiri, a former city employee and deputy mayor, has long supported the city's nuclear policies because of the economic benefits they bring.

During his campaign for the 2012 mayoral election, in which he sought a second term, Iwakiri pledged to restart of the Sendai plant as soon as the central government confirms its safety. He scored a landslide victory over a rookie candidate who opposed nuclear energy.

The local chamber of commerce estimates that the plant generates 600 million yen (\$5.55 million) each year to the city of 100,000 people.

Koichi Miyamoto, mayor of Tomioka, Fukushima Prefecture, located within a mandatory evacuation zone since the Fukushima nuclear accident, empathized with Satsuma-Sendai's decision, saying that keeping the nuclear plant idle had a direct impact on local employment and budgetary requirements of host municipalities.

However, he said all municipalities within a 30-kilometer radius of a nuclear plant should be allowed to have a say in whether or not to resume operations as their cooperation is essential in evacuating residents in a case of accident.

"It remains unclear what routes evacuees should take in a case of accident. The central government has not fulfilled its responsibility if it leaves everything up to local municipalities in drawing up evacuation plans," Miyamoto said.

(This article was written by Takayuki Kozaki and Naoyuki Takahashi.)

## Radioactive soil stored at schools not covered by law

### Radioactive soil stored at Fukushima schools not covered by recent disposal law, has nowhere to go

JJI

FUKUSHIMA – Radioactive soil currently stored at schools in Fukushima Prefecture is not supposed to be transferred to radioactive waste storage facilities planned to be built near the crippled Fukushima No. 1 nuclear power plant, Jiji Press learned Tuesday.

because decontamination at schools was carried out before a special law on radioactive contamination took effect in January 2012 and thus the Environment Ministry deems tainted soil collected during the work not covered by the law. The central government undertakes or funds decontamination work.

The Fukushima Prefectural Government is arguing that such discrimination is pointless and has repeatedly called on the ministry to create a system that will allow soil contaminated with fallout from the March 2011 nuclear calamity at the power plant to be shipped from schools to the planned interim storage facilities.

"We want the state government to prepare an environment where children can study safely," a senior Fukushima municipal official said.

But the ministry has not given a clear response. This reluctance may be partly due to concerns over the cost of shipping soil to the facilities to store tainted soil before being finally disposed of at other locations. The cost is to be borne eventually by the plant's operator, Tokyo Electric Power Co.

A senior ministry official said it may be unfair to discriminate between radioactive soil collected before and after the law's effectuation.

In August, the Fukushima Prefectural Government decided to accept the construction of the temporary storage facilities around the nuclear plant.

Hoping to begin radioactive waste shipments to the facilities in January, the central government is working to win the consent of landowners on the construction.

## Monju playing up again

### **New safety breaches at prototype Monju reactor**

[http://www3.nhk.or.jp/nhkworld/english/news/20141029\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20141029_27.html)

Japan's Nuclear Regulation Authority says the operator of the prototype fast breeder reactor Monju violated safety regulations by failing to repair dozens of surveillance cameras.

The facility in Tsuruga, central Japan, has been idle since a sodium leak accident in 1995. Liquid sodium was used to cool the experimental reactor.

In May last year, the NRA ordered the operator, the Japan Atomic Energy Agency, to halt preparations for resuming a test run after about 14,000 pieces of equipment were found to have gone uninspected.

Then last month, 54 of the plant's 180 surveillance cameras set up after the accident were found to have gone unfixed for up to 18 months.

On Wednesday, the regulator criticized the operator for lacking willingness to reform itself.

NRA Chairman Shunichi Tanaka questioned the agency's stance on safety. He said the authority will continue checking whether conditions at Monju have improved.

## NRAP accepts KEPCO's revised assessment

### **Regulator accepts nuclear plant quake projection**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the idled Ohi nuclear power plant in central Japan may be a step closer to its goal of restarting 2 reactors.

Japan's Nuclear Regulation Authority on Wednesday accepted its revised assessment of the strength of the biggest quake that could possibly strike the plant.

Kansai Electric Power Company had initially devised a scenario with a 700-gal maximum for the 2 Ohi reactors it wants to bring back online. The gal is used to measure ground acceleration in earthquakes. But the NRA rejected the figure as too optimistic.

On Wednesday, the NRA agreed to accept in principle the **operator's revision to 856 gals. The revised figure assumes simultaneous movement along 3 fault lines near the plant as well as shallower quakes that could shake the ground even more vigorously.**

**Kansai Electric says the new earthquake projection would require large-scale reinforcement work at the plant that could take about a year to complete.** The authority will next examine projections for tsunami and other eventualities at the Ohi power plant.

A district court in May backed area residents and ordered the operator not to restart 2 reactors at the Ohi plant. The utility has appealed the ruling.

The nuclear regulator has already approved under new regulations earthquake projections at 3 other nuclear plants.

September 30, 2014

## Koizumi on volcano eruption

### Koizumi points to Mt. Ontakesan eruption as another reason to end nuclear dependence

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201409300025](http://ajw.asahi.com/article/behind_news/politics/AJ201409300025)

Former Prime Minister Junichiro Koizumi used the deadly Sept. 27 eruption of Mount Ontakesan in central Japan to renew his call to move the nation away from its dependence on nuclear energy.

"Even experts say they never expected Mount Ontakesan to erupt. Unexpected incidents can occur at any time," Koizumi said Sept. 29, when talking with reporters. "Earthquakes, tsunami and eruptions occur all over Japan so it must not have nuclear power plants."

Koizumi made the comments while attending an anti-nuclear concert in Tokyo organized by musician and activist Ryuichi Sakamoto.

He addressed the concert audience along with Morihiro Hosokawa, another former prime minister. They both stressed the need to create a nation free of nuclear power.

Koizumi also said he will not get involved in the Fukushima prefectural gubernatorial election scheduled for Oct. 26. Dealing with the aftermath of the accident at the Fukushima No. 1 nuclear power plant, which was triggered by the March 11, 2011, Great East Japan Earthquake and tsunami, is expected to be a major election issue.



Hosokawa said that he would also stay out of the gubernatorial race there.

"Everyone in Fukushima understands even without being told that Japan should move away from nuclear energy," Hosokawa said. "Even without saying 'no' to nuclear energy, they know what the problem is."

## Koizumi and Mount Ontakesan

### **Koizumi points to Mt. Ontakesan eruption as another reason to end nuclear dependence**

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201409300025](http://ajw.asahi.com/article/behind_news/politics/AJ201409300025)

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October 31, 2014

## IAEA experts to report on analysis of seawater

### **IAEA to send experts to analyze seawater**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The International Atomic Energy Agency will send two marine experts to Japan to report their analysis of the sea water off the coast of the defunct Fukushima Daiichi nuclear plant.

Experts from the IAEA affiliated Environment Laboratories in Monaco collected the samples in September

to examine the effects of radioactive materials on the ocean's ecosystem.

The laboratory's director David Osborn and another expert will visit Japan from November 4th to the 7th.

**The IAEA has been advising Japan to disclose comparative analysis of the results of more than one institution to enhance transparency and ease concerns of neighboring countries.**

The two experts also plan to compare water analysis results from Japanese and IAEA laboratories to assess the accuracy of Japanese data.

The IAEA will take new samples off the coast near the Fukushima plant on November 5th.

### **NRA: Fukushima debris didn't taint rice paddies**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

A member of Japan's Nuclear Regulation Authority says it's highly unlikely that radioactive particles from the Fukushima Daiichi nuclear power plant contaminated rice fields some 20 kilometers away.

Commissioner Toyoshi Fuketa spoke at the authority's meeting on Friday. Radioactive substances were found in the paddies after workers removed debris from the plant's Number 3 reactor building in August last year.

The authority said the removal work released dust particles with 110 billion becquerels of radiation.

The plant's operator, Tokyo Electric Power Company, said the particles had relatively large diameters of several micrometers.

**Fuketa indicated that given the level of radiation, the particles had an environmental impact only in the plant compound. He suggested that the contamination may have come from river and ground water.**

**The authority is considering whether to make projections on how far radioactive particles will spread during debris removal and how they will affect rice fields.**

## **Latest revised safety plan**

### **KEPCO submits revised Takahama safety plan**

[http://www3.nhk.or.jp/nhkworld/english/news/20141031\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20141031_31.html)

The operator of the Takahama power plant on the Sea of Japan coast has submitted a report on revised safety measures to the country's nuclear regulator to restart 2 reactors.

Officials of Kansai Electric Power Company on Friday submitted to the Nuclear Regulation Authority a 7,700-page report for the plant's Number 3 and 4 reactors.

The utility revised the measures based on advice from the NRA concerning new safety regulations that took effect in July last year.

The revisions include **higher maximum levels of tremors and tsunamis resulting from possible earthquakes.**

Kansai Electric raised its estimate for tremors from 550 gals to 700, and that for tsunami height from 2.6 meters to 6.7.

**The utility plans to install a large water pump and equipment for preventing hydrogen explosions.**

The regulator is expected to draft a preliminary plan to pave the way for resuming the plant's operations. The plan is to be made public this year.

But before a restart, the utility must obtain approval by local municipalities and complete equipment inspections and other procedures. The process is expected to take at least until next spring.

Takahama would be the second plant to have a preliminary regulation plan drafted by the nuclear authority, following the Sendai plant in Kagoshima Prefecture, southern Japan.

November 1, 2014

**It wasn't us**

## **NRA rebuts claim that Fukushima cleanup affected faraway rice paddies**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201411010037>

Japan's nuclear watchdog disputed the farm ministry's assertion that radioactive substances churned up by debris removal work at the Fukushima No. 1 nuclear power plant contaminated distant rice paddies last year.

The Nuclear Regulation Authority announced at a commissioners' meeting Oct. 31 its estimate that 110 billion becquerels of radioactive materials spread as a result of cleanup at the No. 3 reactor building on Aug. 19, 2013.

This figure is lower than the 130 billion to 260 billion becquerels estimated by the plant's operator, Tokyo Electric Power Co., in August.

Radiation readings rose significantly during debris removal that day, with radioactive substances found to have contaminated plant workers about 500 meters from the reactor building.

However, NRA Commissioner Toyoshi Fuketa emphasized, "The affected area of the fallout was within the nuclear plant compound."

"While it is difficult to simulate the spread of radioactive substances (outside the plant), it is unlikely that the debris cleanup caused the contamination (of the rice paddies)," Fuketa said.

The nuclear facility was ravaged by the March 2011 Great East Japan Earthquake and ensuing tsunami, triggering a triple meltdown.

The NRA arrived at the figure of 110 billion becquerels by analyzing radiation levels recorded at monitoring posts north-northwest of the plant on the day in question.

Radioactive fallout on this scale constitutes a Level 0 incident on the International Atomic Energy Agency's International Nuclear and Radiological Event Scale.

Earlier, the farm ministry pointed to the possibility that radiation from the plant had spread to rice paddies in Minami-Soma more than 20 kilometers away, and called on TEPCO to take preventive measures in its debris removal work.

During the NRA meeting, some experts noted that despite the NRA's estimate, it is unlikely that factors other than debris cleanup at the plant could have caused such high levels of radioactive fallout at the rice farms.

"From a broader perspective, the Fukushima No. 1 plant is responsible for the contamination," one participant said.

November 2, 2014

## Restart: So many uncertainties and concerns still unaddressed

### Too soon for a nuclear restart

<http://www.japantimes.co.jp/opinion/2014/11/02/editorials/too-soon-for-a-nuclear-restart/#.VFYpdcl5B1s>

The city assembly and the mayor of Satsumasendai, Kagoshima Prefecture, have given their nod to the restart of Kyushu Electric Power Co.'s Sendai nuclear power plant, whose Nos. 1 and 2 pressurized light-water reactors, each with a generation capacity of 890,000 kW, cleared the Nuclear Regulation Authority's screening in September under new safety standards that came into force after the March 2011 meltdowns at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant.

The Kagoshima prefectural assembly and Gov. Yuichiro Ito are also expected to approve the plan as early as this week, setting the stage for the first restart of an idled nuclear power plant under the updated standards.

Still, the concerns of many of the local residents have been left unanswered, especially those over the evacuation plans that would come into effect during a major accident at the Sendai plant.

A detailed review of the evacuation plans drawn up by the local governments has not been carried out. It would be irresponsible of the central and the local governments concerned, as well as Kyushu Electric, to

go ahead with the restart without addressing the concerns of the very people who could be most affected in case of a nuclear disaster.

The move to restart the Sendai plant has brought to the fore problems in administrative procedures needed to restart a nuclear power plant that had been put offline. There are no specific regulations stipulating whether the consent of local governments near a municipality hosting the plant — besides that of the host municipality itself — is needed for restart.

The Kagoshima governor has declared that the approval of only the prefecture and Satsumasendai would be necessary for the restart. But his decision **ignores the concerns of people living in neighboring municipalities who would also be affected by a severe accident at the plant.** Most of these municipalities either oppose the restart or are urging the national government to address accountability concerns about the restart. Some of the municipalities have demanded that their consent should be prerequisite for the restart.

Aside from Satsumasendai, the eight municipalities are located within 30 km of the plant. These cities and towns are legally required to work out evacuation plans for their residents in case of a severe accident at the Sendai plant. This requirement is a lesson learned from the 2011 Fukushima disaster — that not only municipalities adjacent to a nuclear power plant but also those located further away from it can be severely affected by radioactive fallout from a serious accident.

The NRA mainly examines whether a nuclear power plant can withstand a major earthquake and tsunami, and whether the plant is sufficiently prepared for an accident, including whether it is equipped with emergency generators and cooling systems to continue cooling reactors when the plant is damaged by a major quake or tsunami. To examine whether evacuation plans devised by local governments will actually work is outside the purview of the NRA.

It does not stand to reason that the central government would not fully involve itself in deciding whether particular evacuation plans are reliable.

The government dispatched several officials to the local municipalities in September to check the evacuation plans, but it is not clear how much they can be involved in making sure that the plans would actually work.

In view of various factors that must be taken into account in making the evacuation plans, local residents' fears are understandable. **The two most important questions are whether means of transportation can be secured and which roads will be safe to travel after a quake or tsunami. Not all residents have cars, and it is not certain whether hospitals can secure enough buses to transport inpatients to safety.**

The possibility cannot be ruled out that roads used by evacuees will be clogged and people will not be able to escape from danger quickly enough. If designated roads are destroyed by a quake or tsunami, substitute routes will need to be secured. It is not clear whether each municipality concerned and the prefectural government have clear ideas about what to do in such situations.

**Whether the public facilities designated as places for accepting evacuees will be well-prepared with the necessary personnel and other resources is also a question.**

Iodine pills are supposed to be given in advance to residents living within 5 km of the plant. At present, fewer than 70 percent of them have received the pills. It has not yet been decided what to do with visitors who happen to be in the area when a nuclear accident takes place, as well as new residents. The places and facilities for checking whether people's clothes have been contaminated with radioactive substances, and for decontaminating them, have not been designated yet.

The uncertainties with regard to emergency evacuation underscore all the more the case for the national government establishing a system to check and verify such plans — and stop the planned restart of a plant if necessary — as the U.S. Nuclear Regulatory Commission does.

Even after the NRA's safety screening of the Sendai plant, there is expert criticism that it fails to take into account all types of quakes that could hit the plant. To restart the Sendai plant while all of these concerns are still unaddressed risks ignoring the basic rights of local residents.

## Disaster drill near Shika nuclear plant

### Japan conducts nuclear disaster drill

[http://www3.nhk.or.jp/nhkworld/english/news/20141102\\_10.html](http://www3.nhk.or.jp/nhkworld/english/news/20141102_10.html)

Japan's government is conducting a disaster drill on the scenario that an accident has occurred at a nuclear plant in Ishikawa Prefecture.

About 3,700 people, including local residents and officials from about 150 organizations, are expected to join the two-day exercise that began on Sunday.

The drill assumes that a major earthquake has damaged the Shika plant on the Sea of Japan, causing a loss of cooling functions.

Government officials set up a task force at the Cabinet Office in Tokyo and held an emergency meeting. In the drill, Satoru Tanaka, a commissioner of the Nuclear Regulation Authority, said only one cooling system is working and that residents will likely be evacuated.

He confirmed that government ministries will cooperate in addressing the accident.

Officials of Ishikawa Prefecture and neighboring Toyama Prefecture also held an emergency meeting. They communicated with the central government and off-site emergency operation facilities via videoconference.

The officials were checking an order from Tokyo calling for the evacuation of elderly residents living within a precautionary action zone within a 5-kilometer radius of the plant.

The order was based on government disaster preparedness guidelines that were revised after the accident in Fukushima. This year's drill is the second of its kind under the new guidelines.

November 3, 2014

## Shika disaster drill (2)



### Thousands take part in drill around Ishikawa nuclear plant

<http://www.japantimes.co.jp/news/2014/11/03/national/thousands-take-part-drill-held-ishikawa-prefecture-nuclear-power-plant/#.VFe6xMl5B1s>

During a nuclear evacuation drill held in the town of Shika, Ishikawa Prefecture, on Sunday, a man on a stretcher is carried out of a home for senior citizens. The two-day drill, which will end Monday, is being held on the assumption that the nearby Shika nuclear power plant, operated by Hokuriku Electric Power Co., finds it cannot cool its reactors after a strong earthquake hits the area. |

KYODO

JJI

Drills were held Sunday and Monday to respond to a severe accident at the Shika nuclear plant in Ishikawa Prefecture.

The drill assumed that Hokuriku Electric Power Co.'s power plant had been hit at 8 a.m. Sunday by an earthquake measuring upper 6 on the Japanese seismic intensity scale of 7, had lost its external power supply and was leaking radioactive material.

At 1:30 p.m. the government announced a nuclear state of emergency because water supplies to the plant had been cut and the reactors were no longer being cooled.

Government officials ordered residents within 5 km of the plant to evacuate and instructed them to take iodine tablets in advance to reduce the effects of radiation exposure. Residents within 30 km were ordered to stay indoors.

At a simulated meeting of the Nuclear Emergency Response Headquarters, Prime Minister Shinzo Abe said that the government would act to prevent the accident from getting out of control and ensure people's safety.



Situation reports were submitted to the meeting in the prime minister's office through a teleconference system linking such places as the town and the Nuclear Regulation Authority.

This was the second drill of its kind since the March 2011 disaster at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant.

The government conducted the first one last year at Kyushu Electric Power Co.'s Sendai nuclear plant in Kagoshima Prefecture.

No details regarding the scenario are told to participants in advance of the two-day drill to make the situation closer to the real thing.

Some 3,700 people took part, including about 1,000 residents near the plant and participants from a variety of government agencies, including the Cabinet Office, the NRA, the Defense Ministry and the National Police Agency.

Local governments in not only Ishikawa Prefecture but also Toyama Prefecture, which is within 30 km of the plant, also took part.

## Volcano experts: Review safety requirements!

### Volcano experts call for guideline review

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Volcano experts in Japan are calling for a review of the safety requirements worked out by the nation's nuclear regulator regarding volcanic activity.

The experts say it is necessary to take into consideration the limitations of volcanic eruption prediction.

The requirements set by the Nuclear Regulation Authority, or NRA, urge nuclear power plant operators to take disaster control measures if signs are detected of major eruptions that would pose a threat to nuclear power plants.

Under the regulations, the NRA approved safety measures in September for the Sendai nuclear power plant in Kagoshima Prefecture in southwestern Japan. The plant is operated by the Kyushu Electric Power Company.

**The utility says it will remove nuclear fuel from the plant if there are any signs of an impending major volcanic eruption.**

But a committee organized by the Volcanological Society of Japan is proposing a review of the NRA's policy.

Kyoto University Professor Kazuhiro Ishihara, who chairs the committee, said academic society must clearly inform the public about the limitations to predicting volcanic eruptions. He called for broad discussions by researchers and government officials on safety measures related to such eruptions.



November 4, 2014

## Over 33,000 m3 of radioactive suits stored at the plant

### Discarded protective suits piling up at Fukushima nuclear plant

<http://mainichi.jp/english/english/newsselect/news/20141104p2a00m0na008000c.html>

Mountains of discarded suits designed to protect workers from radiation at the Fukushima No. 1 Nuclear Power Plant are piling up as low-level radioactive waste.

As of the end of September, **33,300 cubic meters of discarded suits were stored on the plant's premises -- enough to fill about 70 25-meter swimming pools.**

Plant operator Tokyo Electric Power Co. (TEPCO) plans to start burning the discarded suits at an incineration facility next autumn, about half a year later than originally planned, but it's possible the facility won't be able to keep up with the amount being discarded. In the meantime, it seems **the company has no immediate solution to the problem of waste being produced as an offshoot of work to deal with mounting volumes of radioactive water.**

As of August, roughly 5,800 workers on average were engaged in construction work and the handling of debris at the disaster-hit nuclear power plant each day. All such workers wear suits to protect them from radiation. **Masks and protective footwear can be washed and used again, but the workers' Tyvek coveralls, triple-layered gloves, double-layered socks and other such items are discarded. Sometimes the items are tainted with contaminated water or soil, so they are treated as radioactive waste.**

Protective clothing is stuffed into containers in eight locations on the plant, and over the past six months it has been **piled up at the rate of roughly 1,000 cubic meters per month.** In December 2012, TEPCO applied to the government to build a new incineration facility on the north side of the plant's No. 6 reactor, enabling it to reduce the amount of waste several dozen-fold. Initially the company planned to have the facility running at the end of this fiscal year, but it postponed the plans in July this year, deciding to give priority to the handling of contaminated water. Operation of the new facility was subsequently delayed until October 2015.

Still, **it remains unclear whether the incineration facility could handle the amount of discarded items being generated each day.** Under calculations that TEPCO presented to the Nuclear Regulation Authority, the incineration facility could process about 960 cubic meters a month, roughly the same as the amount being produced during that period. **It is expected that the number of workers at the plant will continue to increase, and as the situation stands, waste will only continue to build up at the plant.**

## 16 sq km of storage site between Okuma and Futaba

### Lower House approves Fukushima waste bill

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The Lower House of Japan's Diet passed a bill on Tuesday governing the storage of radioactive waste in Fukushima. **It promises that the waste will be moved out of the prefecture within 30 years.**

The government plans to build intermediate storage facilities in the towns of Futaba and Okuma, near the Fukushima Daiichi nuclear plant. The people in those towns have been demanding that the waste be disposed of outside the prefecture.

The bill obliges the government to ensure the waste is safely stored in the prefecture, and moved out within 30 years to a final disposal site. The bill provides for a state company handling disposal of PCBs to engage in the business of storing nuclear waste.

It also urges that the government study ways to reduce the concentration of radioactive substances in the soil, and develop recycling technologies before final disposal.

It now goes to the Upper House for final approval.

### **Storage site for radioactive debris near Fukushima No. 1 is one step closer**

<http://www.japantimes.co.jp/news/2014/11/04/national/kagoshima-governor-positive-meti-briefing-reactor-restart/#.VFjAvMl5B1s>

JJI

KAGOSHIMA – The Lower House on Tuesday approved a bill for the construction of temporary storage facilities for radioactive waste on land near the crippled Fukushima No. 1 nuclear plant.

The bill is expected to be enacted during the current extraordinary session of the Diet following debate in the Upper House.

The bill calls on the government to ensure the safety of the facilities and complete within 30 years the final disposal of radioactive waste, including contaminated soil, after moving it outside Fukushima Prefecture.

The government hopes to begin the transport of radioactive soil to the facilities in January.

The Lower House Environment Committee adopted a supplementary resolution calling on the government to select candidate sites and create a road map for final disposal.

The temporary storage facility is planned to be built on a site measuring **16 sq. km** straddling the Fukushima towns of Okuma and Futaba. The government has been in talks with more than 2,000 landowners to acquire the necessary land.



November 6, 2014

## Selling radioactive substances

### Man admits selling radioactive samples

<http://www.japantimes.co.jp/news/2014/11/06/national/man-admits-selling-radioactive-samples/>

Kyodo

A man from Fujisawa, Kanagawa Prefecture, is to be prosecuted for selling radioactive substances without a permit, Tokyo police said Thursday.

The 54-year-old man has admitted to selling samples of americium-241 to eight people, said the police, who referred the case to prosecutors. Some of the customers used the material to test radiation-detection instruments.

The man told police he anticipated rising demand for radiation meters following the March 2011 disaster at the Fukushima No. 1 power plant and ahead of the 2020 Tokyo Olympics — and he planned to cash in. He told police he bought 15 pieces of the radioactive isotope sandwiched between radiation-absorbing metal plates from a website overseas for ¥1,100 to ¥1,200 each.

Police believe he then sold the samples to the eight people between September 2013 and March this year for ¥3,500 to ¥4,500 each.

The sale was unauthorized and a violation of the radiation hazards prevention law. The radiation exceeded allowable limits, the police said.

## Safety screening for Oma plant

### J-Power to apply for govt. screening of Oma plant

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

A utility in Japan plans to apply to the nation's nuclear regulator for a safety screening of a power plant it is constructing in northern Japan as early as this month. The screening is a prerequisite for opening the plant.

But a nearby city concerned about the plant's safety is challenging its construction in court.

The Oma plant in Aomori Prefecture is being built by Electric Power Development Company, also known as J-Power.

It is the first commercial plant in the world designed to run exclusively on a mixture of uranium and plutonium recycled from spent nuclear fuel, or MOX.

J-Power stopped construction work at the Oma plant after the 2011 Fukushima Daiichi nuclear disaster. The utility resumed work in late 2012, with an eye to meeting new government regulations.

The company says construction is nearing completion and it is close to satisfying the stricter rules.

The city of Hakodate filed for an injunction with the Tokyo District Court in April to halt the construction, saying it feared damage from a possible accident. The city lies less than 30 kilometers from the Oma plant across the Tsugaru Strait.

Next week J-Power President Masayoshi Kitamura will visit the Aomori prefectural government and the town hall of Oma to outline the utility's application and road map to the plant's completion.

The company also says it intends to brief the city of Hakodate on its plans.

Plant operators have filed applications with the government for screenings of 20 reactors at 13 nuclear power stations. The Oma application is the first for a facility under construction.

November 8, 2014

**"A hasty move without sufficient debate"**

## Editorial: Safety questions remain over Sendai nuclear plant

<http://mainichi.jp/english/english/perspectives/news/20141108p2a00m0na014000c.html>

A lesson learned from the Fukushima nuclear crisis is that a catastrophic accident endangering residents' health and lives can occur at any nuclear power plant. As such, **serious questions remain over the fact that a move toward restarting the Sendai Nuclear Power Plant in Kagoshima Prefecture is steadily progressing in ignorance of this lesson.**

The Kagoshima Prefectural Assembly has adopted a petition from local businesses calling for a resumption of operations at the atomic power station, and Gov. Yuichiro Ito has also endorsed the restart of the plant. Since the mayor and the municipal assembly of Satumasendai that is home the power station earlier approved the reactivation of the plant, its operator Kyushu Electric Power Co. has completed procedures for gaining consent from local communities. Although the latest moves mark a milestone since new regulatory standards for atomic power plants were enforced in July 2013, it can hardly be said that all the challenges to restarting the plant have been resolved.

**The government's Nuclear Regulation Authority (NRA) has not completed its procedures for giving the green light to the reactivation of the power plant.** Kyushu Electric Power Co. needs to gain approval of its plan on work to improve the plant based on the NRA's assessment and the utility's safety regulations. Such being the case, one cannot help but wonder why the prefectural and municipal governments needed to **hastily** express their consent to the restart of the plant. Critics say some political parties attempted to prevent the issue from being a point of contention during a prefectural assembly election next spring. Serious doubts remain as to whether the local governments thoroughly studied the safety of the nuclear plant and other issues before approving the plant's reactivation.

We have insisted that several conditions need to be met before the restart of idled nuclear plants is approved. The mayors and governors of the municipalities and prefectures have the responsibility to protect the lives and health of local residents should a catastrophic accident occur at atomic power stations they host. The planned response to those who need assistance and preparedness to accommodate evacuees in case of a serious nuclear accident, which are incorporated in local governments' evacuation plans, are not necessarily adequate. Moreover, the effectiveness of local governments' evacuation plans is not guaranteed because there is no system under which national governments screen such plans. As such, **great confusion might be inevitable if a catastrophic accident were to occur at a nuclear plant under the current circumstances.**

Local residents' consent is an important factor in restarting idled nuclear reactors. The Kagoshima Prefectural Government has held briefing sessions in five municipalities around the Sendai plant with the attendance of NRA officials. However, they failed to provide a sufficient explanation in response to questions raised by local residents about the need to restart the power station and the effectiveness of the evacuation plans. Supplementary briefing sessions that the prefectural government held subsequently failed to convince local residents of the plant's safety.

Surveys conducted after these sessions were superficial, merely asking the attendees to make overall comments on the sessions and what they did not understand. **A system should be created to sufficiently listen to local residents' opinions and convince them of the plant's safety.** However, the organizer of the briefing sessions obviously failed to sufficiently do so.

If a catastrophic accident were to occur at the Sendai nuclear plant, not only Satumasendai but **also surrounding municipalities would be affected.** Therefore, many residents of municipalities around the

power station are apparently dissatisfied with Kyushu Electric Power's intension to go ahead with the restart of the plant after gaining approval from only the Kagoshima governor and the municipality that hosts the plant.

Needless to say, the responsibility for restarting nuclear plants does not lie solely with local communities that host such facilities. The central government should judge whether to go ahead with the restart of individual nuclear plants after clearly showing a road map toward creating a society that will not rely on atomic power.

Going ahead with the procedure for restarting the Sendai nuclear plant before meeting these conditions should be criticized as a hasty move without sufficient debate.

## Sendai not a good model for restart

### EDITORIAL: Sendai nuclear plant should not be model for reactor restarts

<http://ajw.asahi.com/article/views/editorial/AJ201411080035>

Kagoshima Governor Yuichiro Ito agreed on Nov. 7 to allow Kyushu Electric Power Co. to restart operations at its Sendai nuclear power plant. Ito said his decision was based on the opinions of the Kagoshima prefectural assembly, the mayor and the municipal assembly of Satsuma-Sendai, where the plant is located.

The mayors of the eight municipalities located within 30 kilometers of the nuclear plant did not raise objections to the governor's decision.

Local governments of areas hosting nuclear power plants have no legal power to approve or reject decisions on whether to bring reactors back online. However, the consent of the local communities is regarded as an essential procedure for a reactor restart.

The Kagoshima governor's decision has effectively ensured that the Sendai plant will resume operations. It will be the first nuclear power plant to start running again under stricter safety standards set in the aftermath of the disaster that struck the Fukushima No. 1 nuclear power plant in March 2011.

Currently, 18 reactors at 12 nuclear plants across the nation are undergoing safety assessments by the Nuclear Regulation Authority under the new standards.

The administration of Prime Minister Shinzo Abe has pledged to restart all reactors that have passed the nuclear watchdog's safety reviews. **The Abe administration intends to use the case of the Sendai plant as the template for the restarts of other plants.**

But the process leading to the reactivation of the idled reactors at the Sendai plant has raised serious doubts about the government's approach to the issue. The government is moving toward restarting the Sendai plant's reactors without making sufficient efforts to ensure the local communities are prepared for serious accidents.

### SAFETY OF LOCAL RESIDENTS NOT ENSURED

First of all, the plan for emergency evacuations is grossly insufficient.

There is still no reliable plan for securing buses needed to evacuate local residents and dealing with expected traffic jams during emergencies, despite the fact that these issues have a direct bearing on the

safety of local residents. The two problems were among the major factors that caused serious confusion in local communities during the Fukushima nuclear crisis, jeopardizing the safety of the residents.

The Fukushima meltdowns brought to the fore the fact that it is impossible to guarantee 100 percent safety of nuclear power generation, which entails risks that cannot be controlled.

If it is still necessary to operate nuclear reactors, authorities must take measures to minimize the risk for residents in host communities that would be affected by accidents and evaluate the sufficiency of those measures in ways that reassure the residents.

Six meetings were held since October to explain the reactor restart plan to local residents. But five of the meetings were focused exclusively on the technical and abstruse content of the safety assessment by the Nuclear Regulation Authority.

These meetings failed to ease the simple anxieties of residents about resuming operations at the Sendai plant. Nor were the meetings used to incorporate residents' proposals into safety measures.

In a survey of participants conducted immediately after the meetings, 47 percent of the respondents said the talks were not helpful. In addition, 60 percent of the respondents said there was at least one issue they did not understand despite the explanations given at the meetings.

In the end, the prefectural governor, the mayors of the municipalities and the local assemblies all said the central government is ultimately responsible for safety measures and evacuation plans.

Local governments, such as prefectures and municipalities, are involved in the process of restarting reactors because the safety of their residents is at stake.

The central government acted in a similarly inadequate way. In response to requests from the prefectural government, the Abe administration dispatched government employees and senior officials to the prefecture.

In local assembly sessions and on other occasions, these officials repeatedly stressed that "the central government takes the responsibility" for ensuring the safety of local communities.

On Nov. 3, Yoichi Miyazawa, the minister of economy, trade and industry, traveled to the prefecture in Kyushu and spoke about the need to restart the plant.

## **UNCLEAR MEANING OF 'TAKING RESPONSIBILITY'**

**What exactly does it mean that the government "takes the responsibility?" We know nothing specific about the government's promise.**

The Fukushima nuclear disaster has created a raft of daunting challenges: rebuilding the livelihoods of victims; decommissioning the disabled reactors; dealing with a growing amount of radioactive water; decontaminating areas polluted with radiation; and disposing of radioactive waste. The government has not taken responsible actions in any of these formidable challenges.

Tokyo Electric Power Co. is directly responsible for the accident. Electricity consumers and taxpayers eventually have to pay the bills for compensation payments to victims and related government expenditures.

A severe accident at a nuclear power plant causes tremendous damage to the host communities, and the effects of the damage are felt for at least several decades. **The government is incapable of taking the responsibility to deal with all the consequences of a major nuclear accident.**

If the government says it will take the responsibility for the safety of local residents without paying attention to this reality, it is simply making an empty promise.



**There is something else the government should do responsibly for the host communities: provide assistance to help end their financial dependence on nuclear power plants. The Abe administration has pledged to reduce the nation's dependence on nuclear energy.**

## **ENDING RELIANCE ON NUCLEAR POWER**

Many local governments in areas hosting nuclear plants are willing to approve plans to restart offline reactors. That's because they are generally underpopulated areas that cannot maintain their communities unless they accept nuclear plants to obtain related state subsidies and tax receipts.

To reduce their dependence on nuclear plants, it is vital to change the reality that forces them to accept such plants in the first place.

This is an immense challenge that the local governments cannot deal with on their own. That makes it all the more important to start taking steps to tackle this challenge now.

The government should take measures to promote recycling-oriented industries that make greater use of local resources and develop necessary human resources. It should also reorganize its energy policy budget, which has been focused on promoting nuclear power generation, and work out a new energy policy program featuring measures to reform the power supply system and promote the use of renewable energy sources. It is also the responsibility of the government to initiate debate on these issues involving areas that consume electricity.

In an Asahi Shimbun opinion poll conducted on Oct. 25 and 26, 55 percent of the respondents voiced opposition to the idea of resuming operations at nuclear plants. Similar polls carried out by other newspapers have also found a majority of the respondents cautious about the idea.

If the process of restarting the Sendai plant has become a model, the decision on whether to bring a reactor back online will be effectively left to the host communities. This will cause the will of the entire nation to become increasingly irrelevant. Would such a situation be acceptable?

There is a heap of problems concerning the nuclear power policy that could put the interests of the host communities at odds with those of the nation as a whole. They include, for example, how to store spent nuclear fuel and how to dispose of radioactive waste.

Debate on whether to start running the Sendai plant again has raised the question of how to harmonize the conflicting interests of the communities hosting nuclear plants and the nation as a whole.

November 11, 2014

## **Municipalities want their own safety agreement**

### **Municipalities seek Hamaoka plant safety agreement**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Municipalities near Hamaoka nuclear plant in central Japan are set to demand that the plant's operator sign a safety agreement before restarting its reactor.



The Japanese government has expanded the areas requiring nuclear disaster preparedness plans within about 30 kilometers of nuclear plants. This is in response to the Fukushima disaster in March 2011.

In the case of Hamaoka nuclear plant in Shizuoka Prefecture, 7 municipalities were added to the 4 cities that are obliged to have such plans.

The 7 municipalities, all located within 31 kilometers of the plant, decided to ask Chubu Electric Power Company to sign an agreement promising to seek their approval before key operational changes at the plant.

The power company already has such an agreement with Omaezaki and 3 other cities closest to the plant.

The 7 municipalities plan to present their demand to the prefectural government on Wednesday before starting negotiations with the utility.

Chubu Electric says it cannot comment as it has not yet seen the documents, but that it will consider the demand.

A number of municipalities across Japan have been seeking promises of advance approval or consultation before reactors are put back online.

But power companies are reluctant to oblige.

In the case of Sendai nuclear plant in Kagoshima Prefecture, its operator has signed safety agreements only with the plant's host city and the prefecture.

November 12, 2014

## Sendai restart: A "dangerous precedent"

### Bad precedent for nuclear restarts

<http://www.japantimes.co.jp/opinion/2014/11/12/editorials/bad-precedent-nuclear-restarts/#.VGWoq8l5B1s>

Following the recent go-ahead given by Kagoshima Prefecture and the host city of Satsumasendai, Kyushu Electric Power Co.'s Sendai nuclear power plant is likely to be reactivated by early next year — the first under safety guidelines adopted in the wake of the March 2011 meltdowns at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant. But the move contains serious safety and procedural problems, and there is a risk that the Abe administration and power companies will use it as a precedent to rush the restart of more nuclear power plants without fully addressing the legitimate safety concerns of local residents.

the lessons from the Fukushima nuclear disaster, municipalities within 30 km of a nuclear power plant are required to work out evacuation plans for residents in the event of a serious accident. In the case of the

Sendai plant, eight municipalities, in addition to Satsumasendai, were required to draw up evacuation plans.

In a September meeting of the national government's nuclear disaster management council, Prime Minister Shinzo Abe described the evacuation plans as "concrete and rational" despite the absence of a formal procedure for the central government to examine such plans. It is unclear how detailed an examination the government gave the plans and whether it checked their operability against worst-case scenarios. Many local residents who took part in a series of explanatory meetings expressed concerns about safety — which are understandable given the procedural setup.

Located in an area with a history of volcanic activity, the Sendai plant is viewed as being vulnerable to future possible eruptions. Kyushu Electric says that if an imminent eruption is predicted, it will take the nuclear fuel out of the plant's two reactors as a safety precaution. But it is difficult to predict volcanic eruptions and the company has yet to decide how to transport the fuel and where it can be safely stored. The plant itself has problems. Filtered ventilation systems to reduce the amount of radioactive materials released from the reactor core in emergencies will not be installed for another two years. And the plant has not established a permanent off-site facility to serve as a command center in emergencies. A temporary facility will be used for the time being.

In a news conference held after giving his consent to the restart, Kagoshima Gov. Yuichiro Ito declared that there would be "no issue of life or death" for local residents in the event of an evacuation, citing the Nuclear Regulation Authority's assessment of possible radiation fallout from a severe accident at the Sendai plant. This statement ignores key lessons of the Fukushima crisis — that a severe nuclear accident can quickly spin out of control, and that even if radiation exposure does not claim any lives, the stress caused by evacuation and loss of property can cause grave and sometimes fatal health issues.

Because Ito decided that approval by the host city and Kagoshima Prefecture are sufficient to approve the restart, the exclusion of the eight other municipalities in the approval procedure for the Sendai plant may be used as a precedent by the Abe administration and other power firms as there are no legal regulations concerning which municipalities should be involved in such decisions. In short, the will of the people in nearby municipalities who may be directly affected by a severe nuclear accident can be completely ignored.

Trade and industry minister Yoichi Miyazawa said that if a nuclear accident occurs, the national government will be responsible for handling it. But the experience of the Fukushima disaster shows that such a promise means little in reality.

As the seemingly last key hurdle for the restart of the Sendai nuclear power plant is lifted, a dangerous precedent has been set and many fundamental questions remain unanswered.

November 13, 2014

## **KEPCO not worried about 40-year limit**

### **KEPCO seeks extension for 2 nuclear reactors beyond 40-year limit**

<http://mainichi.jp/english/english/newsselect/news/20141113p2a00m0na001000c.html>

Kansai Electric Power Co. (KEPCO) is set to apply to extend the operation period of two aged reactors at its Takahama nuclear plant in Fukui Prefecture by 20 years as the reactors will soon reach their 40-year limit, it has been learned.

KEPCO executives concluded that the company can expect high returns from running the No. 1 and No. 2 reactors at Takahama Nuclear Power Plant as their power-generating capacity is high at 826,000 kilowatts each. The utility is set to begin special inspections of the two reactors as early as the end of this year and plans to apply for an extension with the Nuclear Regulation Authority next spring.

The government has decided to limit the operation period of nuclear reactors to 40 years in response to the Great East Japan Earthquake and the meltdown at the Fukushima No. 1 Nuclear Power Plant. At the same time, it would allow a 20-year extension for the use of reactors on condition that plant operators conduct special inspections and take greatly enhanced safety measures.

Japan has seven nuclear reactors that have been under operation for about 40 years. Takahama's No. 1 reactor is turning 40 years old this month while the No. 2 reactor will reach its 40-year limit in November 2015. If the extension application for the Takahama plant is approved, it will be the first such case among the seven aged nuclear reactors.

However, KEPCO has a rough road ahead. The cost of safety measures for the aged nuclear plants may be higher than what the utility expects as special inspection standards are set stricter than regular inspection guidelines. In addition, the operation of aged nuclear plants may cause deep concern among local residents.

The central government in October requested power companies to decide whether to decommission aged nuclear plants or to apply for extensions at an early stage. If the utilities look to continue the operation of those seven plants, they are required to conduct special inspections by July 2015 and pass new regulation standards set by the Nuclear Regulation Authority.

## **Kansai Electric mulling operation of 2 Takahama reactors beyond 40 yrs**

<http://mainichi.jp/english/english/newsselect/news/20141113p2g00m0bu039000c.html>

TSURUGA, Japan (Kyodo) -- Kansai Electric Power Co. is making arrangements to conduct special checks to enable two reactors at its Takahama nuclear plant in central Japan to operate beyond the operational limit of 40 years, sources close to the matter said Wednesday.

Under tighter safety standards adopted following the 2011 Fukushima Daiichi nuclear disaster, the operating life of reactors is limited to 40 years in principle. Special checks are necessary for reactors to operate beyond 40 years.

If Kansai Electric decides to conduct special checks on the Nos. 1 and 2 reactors at the Takahama plant in Fukui Prefecture, it would be the first Japanese utility to do so.

The utility serving western Japan is expected to make a decision on the matter by the end of this year, the sources said.

Among a total of 48 commercial reactors in Japan -- all of which are currently offline amid safety concerns following the Fukushima crisis -- seven are around 40 years old, including the two Takahama reactors and the Nos. 1 and 2 units at Kansai Electric's Mihama complex, both located in Fukui on the Sea of Japan coast.

For the seven reactors to operate beyond the 40-year limit, their operators must apply for examinations between April and July next year so that the government's approval process can be completed by the July 2016 deadline. Extensions of up to 20 years are possible for reactors that clear the special checks. The checks on older reactors are stricter and costlier than regular checks. But Kansai Electric appears to have judged that the Nos. 1 and 2 reactors of the Takahama complex could substantially cut its power generation costs, the sources said.

Regarding its other reactors, Kansai Electric has applied to the Nuclear Regulation Authority for safety checks to resume operation of the Nos. 3 and 4 reactors at the Takahama plant and the Nos. 3 and 4 units at its Oi plant, also in Fukui Prefecture.

As the Nos. 3 and 4 reactors at the Takahama plant have already cleared regulations for tsunami and earthquake resistance, the utility expects their safety data to be partially applicable to the Nos. 1 and 2 units, the sources said.

The Nos. 1 and 2 pressurized-water reactors with capacity of 826,000 kilowatts each began operation in November 1974 and November 1975, respectively, and both went offline in 2011.

Kansai Electric is considering decommissioning the Nos. 1 and 2 reactors at the Mihama plant as over 40 years have passed since the commencement of their operations.

## Takahama nuclear plant (2)

### Utility mulls restart of 40-year-old reactors

[http://www3.nhk.or.jp/nhkworld/english/news/20141114\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20141114_02.html)

The Kansai Electric Power Company is reportedly considering a process of special inspections in order to restart 2 aging nuclear reactors.

The number 1 and 2 reactors at the Takahama nuclear plant in Fukui Prefecture, central Japan, are about 40 years old.

Last year the Japanese government limited the operational lifespan of nuclear reactors to 40 years in principle. It also said that an exceptional extension would require what it calls "special inspections." These include a detailed examination of deterioration in reactor structures approved by the Nuclear Regulation Authority.

Since then, attention has been focused on whether operators will apply for the extended operation of reactors over 40 years old or decommission them.

Kansai Electric says it is still considering whether to apply for an extension of 2 reactors at its Mihama nuclear station. One is 44 years old and the other 42.

Chugoku Electric and Kyushu Electric in western Japan are also considering whether to apply for an extension of their older reactors.

### **Kepco mulls operating two reactors beyond 40-year limit**

<http://www.japantimes.co.jp/news/2014/11/13/national/kansai-electric-mulls-operating-two-reactors-beyond-40-year-limit/#.VGWnGcl5B1s>

Kyodo

TSURUGA, FUKUI PREF. – Kansai Electric Power Co. is making arrangements to conduct special checks that would enable two reactors at its Takahama nuclear plant in Fukui Prefecture to operate beyond the operational limit of 40 years, sources said. [...]

November 18, 2014

### **Radioactive leak at Ikata plant**

#### **Radioactive water leak found at Ikata plant**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Workers at the Ikata nuclear power plant in western Japan have found a radioactive water leak from the facility's wastewater disposal system.

Officials of the plant's host Ehime Prefecture said none of the water leaked outside the site, and that no worker was exposed to it. The plant operated by Shikoku Electric Power Company is offline.

They say workers found traces of leaked water on piping insulation in a building adjacent to the plant's Number 2 reactor on Tuesday.

The piping is part of the disposal system for solidifying concentrated low-level radioactive wastewater by mixing it with asphalt.

They say 34 grams of a dried mixture of boric acid and radioactive cobalt-60 had adhered to the stainless steel piping beneath the insulation. The initial amount of leaked wastewater is unknown.

Officials say the radioactivity level of the mixture was about one-500th the amount requiring a report to the government.

Shikoku Electric says it found no irregularities when workers checked the piping on Saturday.

But the utility says the piping may have been damaged, as it has been used since 1982, when the reactor started operation.

November 19, 2014

## **NRA panel confirms assessment on Tsuruga fault**

### **NRA panel: Fault under Tsuruga reactor could move**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Experts from Japan's nuclear regulator have determined that a fault running under a reactor at the Tsuruga nuclear plant in Fukui Prefecture, central Japan, could move in the future.

The Nuclear Regulation Authority concluded in May last year that the fault could be active. The plant's operator, Japan Atomic Power Company, then submitted new data disputing that assessment.

But after looking over that data, the **NRA's panel of experts on Wednesday reaffirmed last year's conclusion that the fault could shift again.**

In its draft assessment report, the panel cited a recently discovered fault north of the reactor that appears to extend from the fault under the reactor.

The panel said it couldn't rule out that the new fault had shifted in the past 120,000 to 130,000 years. Based on new regulations, the authority defines a fault that shifted within that period as potentially active. Reactor buildings and other key nuclear facilities are not allowed to be built atop such faults.

**The report pointed out that the new fault could be connected to the fault beneath the reactor.**

**The panel will submit its assessment to the authority after hearing from other experts who did not participate in the discussions.**

If the authority does not overturn the panel's assessment, the reactor cannot be restarted and may have to be decommissioned.

Japan Atomic Power Company Vice President Taiki Ichimura criticized what he described as a unilateral assumption, and expressed confidence it would be proved wrong.

**He said the company welcomes the opportunity to challenge the panel's assessment.**

## Fault under Tsuruga IS active

November 20, 2014

### **Nuclear watchdog panel: Fault under Tsuruga reactor is active**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201411200043>

A fault line beneath the No. 2 reactor of the Tsuruga nuclear power plant is indeed active, an expert panel of the Nuclear Regulation Authority concluded Nov. 19, drawing criticism from the plant's operator. Japan Atomic Power Co. vowed to challenge the panel's conclusion, which, if it stands, would force the company to decommission the reactor under new safety rules.

"It is a rash, one-sided judgment and just a presumption," Japan Atomic Power Vice President Taiki Ichimura told reporters after the Nov. 19 meeting of the NRA panel. "We are confident that we will be able to rebut and disprove the conclusion."

The NRA in May 2013 pointed out the possibility that the fault line beneath the No. 2 reactor building of the Tsuruga plant in Fukui Prefecture could move in conjunction with the nearby Urasoko active fault. Japan Atomic Power, citing its own survey results, said the fault under the reactor was not connected to the Urasoko fault's branch and was not active.

After reassessing the conditions at the Tsuruga plant, the expert panel said in its draft report Nov. 19 that the fault under the reactor building "could move in the future," repeating the NRA's stance last year.

The NRA is expected to finalize the draft after it is examined by other experts.

Under stricter safety standards introduced after the Fukushima nuclear crisis triggered by the March 2011 Great East Japan Earthquake and tsunami, reactor buildings cannot be built directly above active faults. Japan Atomic Power will likely be unable to restart the No. 2 reactor unless the panel's draft report is dismissed.

The NRA's assessment of the fault last year came when Kunihiro Shimazaki, a seismologist known for his tough attitude toward power companies, was a deputy chairman of the watchdog. Utilities and ruling coalition officials criticized Shimazaki over his "hurried conclusion" on the Tsuruga plant.

Although Shimazaki's term ended in September and he was replaced, the NRA's position on the fault was not overturned.

The fault line survey at the Tsuruga plant was originally started at the request of the now-dissolved Nuclear and Industrial Safety Agency.

Fault inspections are a separate process from the safety screenings required to restart reactors, so Japan Atomic Power can still submit an application to resume operations at the reactor.

However, NRA Chairman Shunichi Tanaka has said he would respect the expert panel's conclusion when deciding whether to allow reactors to restart.

(This article was written by Chikako Kawahara and Daiki Koga.)

## Experts retain Tsuruga reactor fault judgment in draft report

<http://mainichi.jp/english/english/newsselect/news/20141120p2g00m0bu027000c.html>

TOKYO (Kyodo) -- A panel of experts under Japan's nuclear regulator on Wednesday reaffirmed an earlier judgment that a reactor at the Tsuruga nuclear station is sitting right above an active fault, a move that could force the operator to permanently shut down the unit.

After the Nuclear Regulation Authority acknowledged last year that the fault in question is active, Japan Atomic Power Co. has submitted additional data in trying to have it overturned.

The experts, however, concluded that the new data offered no evidence to sway the judgment as it compiled a new draft report on the fault's assessment.

A zone of rock fragments called D-1, running directly beneath the No. 2 reactor at the plant, is a "fault that could move in the future," the draft report said.

Under the country's nuclear safety requirements, plant operators are not permitted to build reactors and other important safety facilities directly above active faults -- currently defined as those that have moved in the last 120,000 to 130,000 years.

The draft report will likely be finalized by an NRA decision-making panel after making amendments to details -- which will make it difficult for Japan Atomic Power to resume the unit's operation.

All of Japan's nuclear reactors are currently offline. To go back online, they must pass the regulator's safety screening process based on tougher regulations adopted in the wake of the 2011 Fukushima nuclear crisis.

Japan Atomic Power Vice President Taiki Ichimura said he believes the assessment is not based on specific evidence and it is a "one-sided assumption."

"I'm sure we can counter the judgment," he told reporters after the panel meeting, adding he will ask the NRA to create an occasion for more discussion.

If the company has to decommission the unit, its business would be negatively affected by scrapping costs and a loss in asset value.

## Fault beneath Tsuruga nuclear reactor is active, watchdog panel reaffirms

Kyodo

<http://www.japantimes.co.jp/news/2014/11/20/national/fault-beneath-tsuruga-nuclear-reactor-is-active-watchdog-panel-reaffirms/#.VG4sc8l5B1s>

A reactor at the Tsuruga nuclear station is sitting right above an active fault, a panel of experts under Japan's nuclear regulator has reaffirmed — a move that could force the operator to shut the unit for good. [...]

November 25, 2014 |



## TEPCO's Trench Saga Could Have Unintended Consequences

<http://www.fukuleaks.org/web/?p=14165>

TEPCO has made multiple attempts to deal with the unit 2 trench full of highly contaminated water. In 2011 they tried to block leaking water in the area. After it was admitted in 2013 that the tunnel still contained highly radioactive water, plans were put in place to empty the tunnel of water.

First TEPCO tried to freeze it, then they dumped in ice when the freezing didn't completely work. The next attempt was to dump concrete in the end near the turbine building. As they tried to empty the trench they realized it was still somehow filling back up with water. They also cited that the water going back in must also be contaminated as radiation levels were not going down.

The latest attempt began today. They are dumping in a hydro-cement to try to fill the trench with concrete while pumping out contaminated water. TEPCO said this work would result in considerable worker exposures. TEPCO now plans to do the same tactic to the trench for the unit 3 reactor that they admit has the same problem.

TEPCO also admitted this highly contaminated water in the trench is mixing with groundwater and making it out to sea. This is the first really clear admission of this mechanism by TEPCO. They also now admit to the NRA that all the efforts at the unit 2 trench earlier this year were not necessary and were unlikely to work. They did not say why they didn't advocate for the concrete filling of the trench back then and instead did two rounds of considerable work they knew wouldn't work.

Currently the mechanism for more highly contaminated water to reach the trench and refill it either isn't understood or isn't admitted by TEPCO. This makes the work to fill the trench even more risky. **The concrete filling of the trench could have new consequences if it forces this flow of highly contaminated water to take a different route rather than stopping it from flowing. Without knowing the exact source of the water and the exact route it takes to the trench, what happens next is anyone's guess.**

November 26, 2014

## Kepco applies for 20-year extension for Takahama

### Kepco wants to extend lifespan of 40-year-old Takahama reactors to 60 years

<http://www.japantimes.co.jp/news/2014/11/26/national/kepco-wants-extend-lifespan-40-year-old-takahama-reactors-60-years/#.VHX0k8l5Cos>

by Eric Johnston  
Staff Writer

Kansai Electric Power Co. said Wednesday it hopes to apply for a 20-year extension for two aging reactors that are close to the end of their 40-year approved life cycle, and it has begun inspections which are a prerequisite for the move.

The No. 1 and 2 reactors at the Takahama power plant in Fukui Prefecture are 40 and 39 years old, respectively. However, they can be certified for longer life, after exhaustive safety testing for cracks and wear, if they apply to the Nuclear Regulation Authority and get approval.

New reactors are certified for only four decades, but there is a provision in the law for a one-time application to extend their life to 60 years. Kepco will carry out its own inspection and may then apply to the NRA for the extension.

“Based on the results of the inspections, we’ll decide whether to apply for an extension,” Kepco said in a statement.

Kepco president Makoto Yagi told reporters on Wednesday the company was taking measures to ensure the reactors’ safety.

The inspections are the first to be carried out under a new safety regime that went into effect in 2012, and will set a precedent for other aging reactors. Of Fukui Prefecture’s 13 reactors, five, including four operated by Kepco, are or will soon be 40 years old.

In addition, Chugoku Electric Power Co.’s Shimane No. 1 reactor is 40 years old, while Kyushu Electric Power Co.’s Genkai No. 1 reactor is 39 years old.

How the special inspections are carried out on the Takahama reactors, and the results, are likely to affect whether the operators of those reactors, too, apply for an extension.

The special inspections will include ultrasound tests on the reactor vessels’ welds and eddy current tests on the primary coolant nozzles to identify cracks. There will also be an inspection of the reactors’ containment vessels and their concrete barriers, also for cracks. All monitoring sensors inside the reactor vessel will also be checked.

Kepco has said it will seek local approval for extending the reactors’ lifetimes. Takahama Mayor Yutaka Nose has said he generally supports the restart of idled reactors if they meet safety standards, while Fukui Gov. Issei Nishikawa has traditionally supported Kepco’s nuclear operations in the prefecture.

However, even if the Takahama plants pass the special inspections, it is unclear what conditions and demands for safety guarantees Takahama and the prefecture might place on Kepco or the central government before approving a 20-year extension.

A Fukui prefectural spokesman said Kepco officials met with prefectural officials in the nuclear power division to talk about the inspection procedures. The prefecture had no official reaction Wednesday to Kepco’s announcement.

A Kepco spokesman said the inspections were expected to take several months, and that the results could be known by early spring, possibly around the time of nationwide local elections. Nishikawa is up for re-election, and the reactors’ record of 40 years of safe operation is likely to

A Kepco spokesman said the inspections were expected to take several months, and that the results could be known by early spring, possibly around the time of nationwide local elections. Nishikawa is up for re-election, and the reactors’ record of 40 years of safe operation is likely to be a campaign issue.

## What will happen if water changes route?

## Utility to conduct special inspections on reactors

[http://www3.nhk.or.jp/nhkworld/english/news/20141126\\_38.html](http://www3.nhk.or.jp/nhkworld/english/news/20141126_38.html)

Kansai Electric Power Company says it will carry out special inspections aimed at restarting 2 aging nuclear reactors.

Last year, the Japanese government limited the operational lifespan of nuclear reactors to 40 years in principle.

Operators must decide whether to decommission their aging reactors or apply for permission to extend their lifespans. The special inspections required include a detailed assessment of the extent of reactor deterioration.

Kansai Electric President Makoto Yagi announced on Wednesday the company will start inspecting the No.1 and No.2 reactors at the Takahama nuclear plant in Fukui Prefecture, central Japan, early next month.

He said the utility concluded that the safety of the 2 reactors could be assured by implementing various measures.

Both reactors have been in operation for about 40 years.

The utility will decide whether to apply to the Nuclear Regulation Authority for extensions after seeing the results.

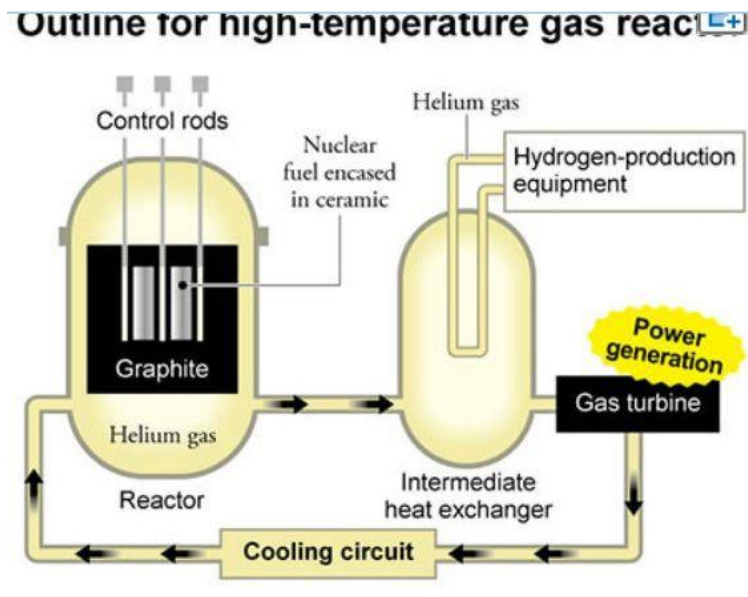
Next year, 7 nuclear reactors in Japan will have been in operation for roughly 40 years. Kansai Electric is the first power company to announce plans to apply to extend the operations of any of these 7 reactors.

It's hugely expensive to restart and ensure the safety of an old reactor. But the utility judged it would be even costlier to buy the fuel to run its thermal power stations.

Yagi said **his company has pledged to make efficient use of existing nuclear power plants, and that the Takahama reactors are more economically viable than other power sources**

November 28, 2014

Looking for "safer" type of reactors?



## JAEA seeks to resume research on new type of nuke reactor it says is safer

[http://ajw.asahi.com/article/sci\\_tech/technology/AJ201411280055](http://ajw.asahi.com/article/sci_tech/technology/AJ201411280055)

By TERUHIKO NOSE/ Staff Writer

The Japan Atomic Energy Agency is seeking to resume research and development of a new type of nuclear reactor that it claims is safer, even as experts raise doubts about such efforts in the wake of the March 2011 Fukushima nuclear accident.

"While we do not expect everyone to support us, it would serve as one option for a future energy source," said Satoru Kondo, director-general of the JAEA's Oarai Research and Development Center in Oarai, Ibaraki Prefecture, where the experimental reactor is located. "We would like to proceed with research." The experimental high-temperature gas reactor halted operations in the wake of the Fukushima nuclear accident, but the JAEA, an independent research institute, submitted an application on Nov. 26 to the Nuclear Regulation Authority for a screening of the reactor based on new safety standards. The JAEA said the experimental reactor is safer than the light water reactors that have been in use at Japanese nuclear plants.

JAEA officials explained that the structure of the new experimental reactor guards against core meltdowns. The nuclear fuel is encased in highly heat-resistant ceramic and then placed in a graphite vessel container that can withstand temperatures up to 2,500 degrees.

The agency plans to conduct experiments to heighten the capabilities of the reactor and confirm its safety. Researchers will also seek to use the technology to manufacture hydrogen by applying the high temperatures generated to break down water. Helium gas, rather than water, is used to transfer heat and the gas can be heated to temperatures as high as 950 degrees. That is much higher than the steam that reaches temperatures of about 300 degrees in light water reactors.

Research on the high-temperature gas reactor began in the late 1960s. It was envisioned as a multipurpose reactor that could manufacture hydrogen in addition to generating electricity.

Experimenting at the reactor in Oarai began from 1998. However, the reactor received little attention because the commercialization costs were considered too high. For one thing, the reactor had to be kept

small because in larger dimensions it would be much more difficult to cool the core due to the higher temperatures generated.

The situation changed in April 2014 when the Abe Cabinet approved a basic energy plan that included a provision calling for the promotion of research and development.

Rather than power generation, the production of hydrogen is attracting attention because of its increase in value as a fuel source with the development of fuel cells.

A panel of experts under the science ministry compiled a report in the summer detailing how research and development should proceed. The ministry included a request of 1.6 billion yen (\$13.6 million) for research in the fiscal 2015 budget, much higher than the 600 million yen included in the fiscal 2013 budget.

According to Koji Okamoto, a professor of nuclear engineering at the University of Tokyo who has been involved in the research on the high-temperature gas reactor, research on such reactors has proceeded in China and Indonesia, and there are plans to go commercial.

"In order to take advantage of research results from the past, the reactor should resume operations as soon as possible," Okamoto said.

However, other experts are casting doubts on the resumption of operations, even for experimentation. In October, questions were raised at a meeting of the science ministry's nuclear power science and technology committee about the excessive emphasis on safety and the possibility of actually producing hydrogen.

One committee member, Yoko Wake, a professor emeritus of business at Keio University, said about the science ministry's report, "From the standpoint of the sensitivity toward safety that Japan faces in the wake of 3/11, I cannot but feel a sense of discomfort."

December 16, 2014

## Takahama open to media

### Reactor special inspection shown to media

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Kansai Electric Power Company has shown to media special inspection procedures aimed at restarting 2 aging nuclear reactors at its plant in central Japan.

Last year, Japan's government limited the operational lifespan of nuclear reactors to 40 years in principle.

Operators must decide whether to decommission their aging reactors or apply for permission to extend their lifespans. Such permission requires special inspections to assess in detail the extent of reactor deterioration.

Kansai Electric has been conducting special inspections since December 1st on the No.1 and 2 reactors at the Takahama nuclear plant in Fukui Prefecture.

On Tuesday, journalists were allowed to watch workers remotely control an ultrasonic device in a reactor to examine the interior.

Workers are also checking the inner coating of the reactor containment vessel.

Kansai Electric plans to report the results of the inspection to the Nuclear Regulation Authority by July next year, the deadline for extension application.

In Japan, 7 nuclear reactors, including the 2 at the Takahama plant, have been in operation for about 40 years.

December 17, 2014

## Extending reactors lives

### **Kansai Electric cites progress in prolonging lives of Takahama reactors**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201412170038>

By TATSUYUKI KOBORI/ Staff Writer.

TAKAHAMA, Fukui Prefecture--Kansai Electric Power Co. showed progress in its plans to extend the operating lives of two aging reactors well beyond the normal expiry date of 40 years.

Reporters on Dec. 16 were allowed to tour the premises of the Takahama nuclear power plant here, which is currently undergoing a special safety inspection required to keep the plant's No. 1 and No. 2 reactors in service.

Although the acceptable operational term of nuclear reactors is basically set at 40 years, the Abe administration allows utilities to apply for an extension of the period by up to 20 years on a one-time basis.

Kansai Electric is the first utility to conduct safety checks toward that goal. The inspection is expected to take three to four months, Kansai Electric officials said.

The Takahama plant's No. 1 reactor turned 40 years old this year. The No. 2 reactor will exceed four decades of operation in 2015.

After assessing the necessity for additional repair work and other factors, Kansai Electric will apply to the Nuclear Regulation Authority as early as next spring to prolong the operation of the two reactors by two decades.

Kansai Electric on Dec. 16 showed reporters a remote-controlled robot examining welded sections in part of the No. 1 reactor filled with water. A worker was also seen checking for cracks in the surface coating on walls of the No. 1 reactor containment vessel.

The company also showed a 5-centimeter-deep hole with a diameter of 3 cm in a concrete wall of the reactor building that is used to assess the condition of inside reinforcing steel.

## Takahama: "Safety" measures

### Screening and measures for Takahama plant

[http://www3.nhk.or.jp/nhkworld/english/news/20141217\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20141217_27.html)

A key point in screening the Takahama nuclear power plant in Fukui Prefecture, central Japan, was an assumption about the strongest earthquake that could hit the facility.

The Nuclear Regulation Authority has conducted 67 review meetings and 3 surveys at the plant since Kansai Electric Power Company in July 2013 filed with the NRA for the screening. The procedure is needed to restart the No. 3 and 4 reactors of the facility in Fukui Prefecture.

Kansai Electric initially submitted 550 gals as a figure for the strength of the possible quake. But the NRA rejected the figure as too optimistic.

In December 2013, the utility raised the figure to 700 gals, taking into consideration possible simultaneous movement along 3 faults in Wakasa Bay and land areas to the east.

The utility first filed as a figure for the tallest possible tsunami 2.6 meters above sea level, but later raised it to 5.7 meters. But the firm had miscalculated the duration of possible seafloor landslides, and again raised the figure, to 6.2 meters.

After the revisions, Kansai Electric decided to increase the height of a tsunami breakwater from an initially planned 6 meters to 8.

The firm installed more equipment as required by new regulations in case of a serious accident. It installed pumps for cooling reactors and containment vessels, and devices to prevent hydrogen explosions. Such blasts occurred in the 2011 Fukushima Daiichi accident.

Instructions for responding to accidents at the plant are thousands of pages. They cover steps to manually open valves of pumps for cooling reactors in case of complete power outages. This is based on lessons from the Fukushima Daiichi accident.

December 18, 2014

## Another leak... during Korean experts' visit

## Six tons of tainted water leak at Fukushima No. 1 during Korean safety tour

[http://www.japantimes.co.jp/news/2014/12/18/national/six-tons-of-tainted-water-leak-at-fukushima-no-1-during-korean-safety-tour/#.VJML3\\_-cJA](http://www.japantimes.co.jp/news/2014/12/18/national/six-tons-of-tainted-water-leak-at-fukushima-no-1-during-korean-safety-tour/#.VJML3_-cJA)

JJI

FUKUSHIMA – Up to 6 tons of radioactive water has leaked into the ground at the crippled Fukushima No. 1 nuclear power plant, according to Tokyo Electric Power Co.

The water, which had been scrubbed by Units A and C of the advanced liquid processing system (ALPS), leaked from pipes while being transported to storage tanks on Wednesday afternoon, the utility said. The water seeped into the ground, officials said, adding that it did not flow into the sea because there was no drainage ditch nearby.

The ALPS system can remove all radioactive substances except tritium. It wasn't clear how radioactive the water was before the spill.

Wednesday's incident came on the same day that a team of experts from South Korea visited the heavily damaged plant to examine the safety of Japanese fishery products.

The South Korean experts spent about three hours inspecting facilities at the plant, including ALPS. They were told about measures to keep the nuclear crisis under control, but not apparently about the latest water leak.

The experts asked questions about the types of radioactive materials contained in the water and the results of radiation checks on local seawater, according to the Fisheries Agency.

In September last year, South Korea banned imports of fishery products from Fukushima and seven other prefectures due to the recurring water leaks at the Fukushima No. 1 plant.

Tepco said Wednesday it will cut business costs by ¥837 billion in fiscal 2014, up sharply from the previously planned ¥576 billion. The deeper cuts will allow Tepco to forego another rate hike for households through 2015, company officials said.

In a special business plan approved by the government in January, Tepco said it would slash business costs by ¥4.8 trillion over the 10 years to fiscal 2022. Tepco Chairman Fumio Sudo said the utility hopes to increase that to about ¥6 trillion.

The plant is in the final stages of removing fuel rods from storage at the heavily damaged No. 4 reactor building.

## Shattering like glass

### Nuclear Crack Down?

<http://www.fairewinds.org/nuclear-crack/#sthash.W9uuleX5.jHAMcGnZ.dpbs>

Did you know that embrittled nuclear reactors could shatter like glass? Watch Fairewinds Energy Education's Nuclear Science Guy Arnie Gundersen demonstrate reactor embrittlement and imagine the shattering glass as a shattering nuclear reactor vessel. What makes embrittlement so dangerous and frightening is that during an emergency when the reactor must be cooled down quickly, the rush of cold water necessary to cool it could create a scenario that looks like the one in our video. You will only see



steam escaping in our video, but in an embrittled shattering reactor vessel, that steam would be highly radioactive.

Aging nuclear reactors around the globe are subject to this steel embrittlement that is a measure of how prone the steel reactor vessel is to cracking. The metamorphosis of the strong steel vessel into something as brittle and fragile as glass is due to the constant neutron bombardment from the chain reaction inside the nuclear core.

While several U.S. nuclear reactor vessels are showing early signs of embrittlement, Entergy's Palisades nuclear plant is the most embrittled plant in the country. Located in Covert, Michigan, it is one of the oldest reactors in the world and now one of the most dangerous to continue operating due to its embrittled reactor vessel. Palisades owner, Entergy Nuclear Operations Inc. is attempting to take advantage of a 2010 regulatory change that allows embrittled nuclear plants to operate longer by analyzing the problem mathematically, rather than actually testing the material to accurately determine its strength. In the interest of nuclear safety, the Palisades reactor and all the aging reactors throughout the world should continue to be subjected to actual material testing just as they were originally designed to be.

- See more at: <http://www.fairewinds.org/nuclear-crack/#sthash.W9uuleX5.jHAMcGnZ.dpuf>

December 19, 2014

## Concentration of reactors involves "unique" risks

### EDITORIAL: Risks posed by nuclear reactor clusters left unaddressed

<http://ajw.asahi.com/article/views/editorial/AJ201412190028>

**Simultaneous accidents at multiple nuclear reactors could jeopardize the survival of the nation.**

This is a grim reality we faced during the harrowing nuclear crisis that broke out in 2011 at the Fukushima No. 1 nuclear power plant.

But **both electric utilities and the Nuclear Regulation Authority (NRA) appear reluctant to face up to the risk of multiple nuclear accidents occurring simultaneously.**

In a draft report on its safety reviews of the No. 3 and No. 4 reactors at Kansai Electric Power Co.'s Takahama nuclear plant in Fukui Prefecture, the NRA said the two reactors had cleared the new safety standards.

That means the Takahama plant became the second nuclear power facility to receive the virtual go-ahead to resume operations under the tougher safety requirements introduced after the Fukushima nuclear disaster. Previously, the No. 1 and No. 2 reactors at Kyushu Electric Power Co.'s Sendai plant in Kagoshima Prefecture had passed the NRA's safety screenings in line with the stricter regulations.

Unlike the Sendai plant, however, **the reactors at the Takahama plant are located near many other reactors.**

Besides the No. 3 and the No. 4 reactors, the Takahama plant has two other reactors--the No. 1 and the No. 2 units. There are also four reactors at Kansai Electric Power's Oi nuclear power plant, which is located about 15 kilometers from the Takahama complex.

In addition, there are five other reactors about 50 km from the Takahama plant--three at the same utility's Mihama nuclear plant and two at Japan Atomic Power Co.'s Tsuruga plant. A total of 13 reactors are concentrated in the area.

None of the 13 reactors is set to be decommissioned. Kansai Electric Power has applied for the NRA's safety screenings of the No. 3 and the No. 4 reactors at the Oi nuclear plant. The company has also indicated its intention to submit applications for the No. 1 and the No. 2 reactors at the Takahama plant. Shunichi Tanaka, chairman of the NRA, has acknowledged the problem of such a cluster of reactors. The risk "may have to be given sufficient consideration when a new reactor is built," he said.

But the NRA's current safety screenings only assess whether individual reactors meet the safety standards required to prepare for natural disasters and severe accidents.

The nuclear regulators do not assess the safety risks stemming from the geographic proximity between the Nos. 3 and 4 reactors at the Takahama plant and the Nos. 3 and 4 units at the Oi plant.

Under the current safety screening system, any number of offline reactors can be restarted as long as they clear the safety standards individually. As a result, a group of reactors located in close proximity could be brought back online in a piecemeal process.

As the NRA itself has admitted, clearing the new tougher safety standards does not mean zero accident risk.

If a major natural disaster, such as a massive earthquake, triggers multiple reactor accidents within a narrow area, efforts to deal with the accident at one reactor could be seriously hampered by radioactive materials released from other nearby reactors. Bringing the situation under control would be extremely difficult.

Responding to such multiple nuclear accidents would be a far more formidable challenge than dealing with a single accident. The abilities of the companies that operate the reactors as well as society as a whole would be severely tested.

Few other countries in the world have so many clusters of nuclear reactors located within a relatively narrow area.

Such a setup requires safety screenings that take into consideration the unique risks involved in concentrations of reactors.

Serious debate is needed on the tolerance level for such a concentration of safety risks in a relatively narrow area.

If idled reactors in such clusters are to be restarted, the public deserves a more detailed and convincing explanation about how to deal with the risks.

How should the risks of concentrated reactor locations be considered?

If this is a question that is too important and complicated to be left to electric utilities and the NRA, the government should step up to the plate and tackle the challenge head-on.

December 20, 2014

## Earthquake strikes Fukushima

## Earthquake strikes off Fukushima Prefecture; no tsunami warning issued

<http://www.japantimes.co.jp/news/2014/12/20/national/science-health/moderate-quake-rattles-eastern-fukushima-prefecture/>

### Staff Report

An earthquake with an **intensity of 4 on the Japanese scale to 7** rattled the Hamadori area of eastern Fukushima Prefecture at 6:31 p.m. Saturday, the Meteorological Agency said.

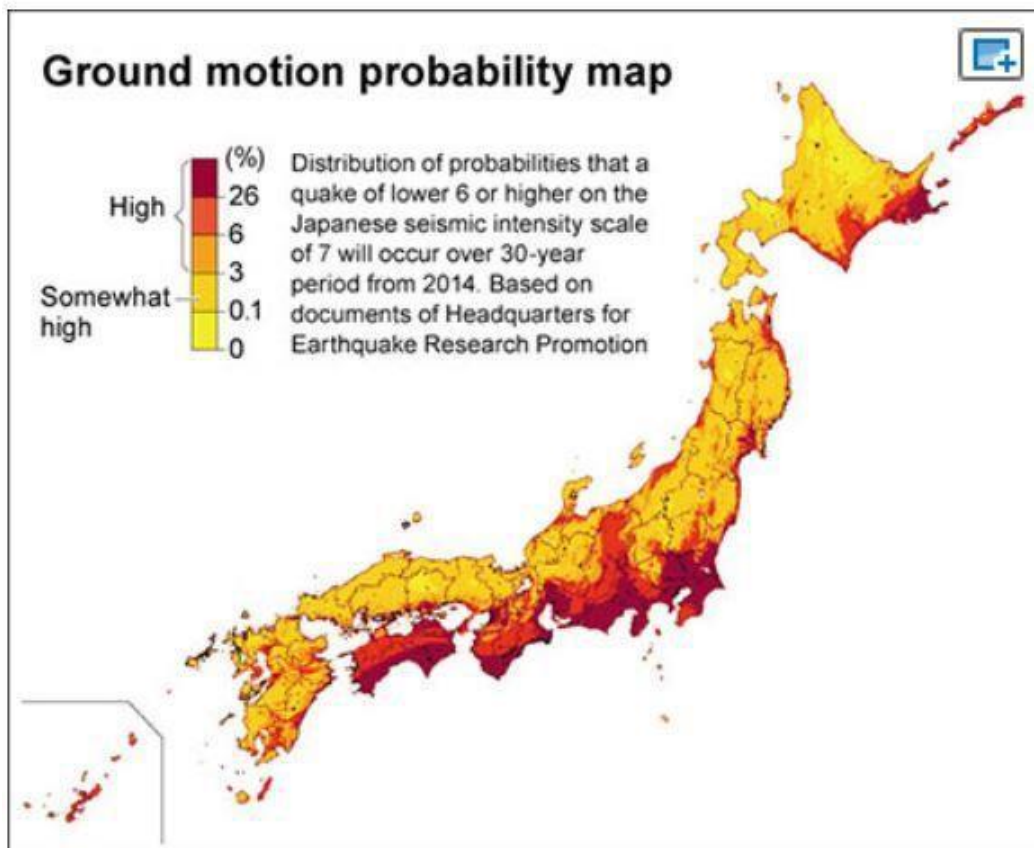
The earthquake measured 3 in the Nakadori district of Fukushima as well as in northern, central and southern areas of adjacent Miyagi Prefecture, and in parts of Ibaraki Prefecture further to the north, the agency said on its website.

No tsunami warning was issued.

The quake's epicenter was off the coast of Fukushima Prefecture at a depth of 40 km below the seabed, the agency reported.

**No damage was detected by an initial check of the Fukushima No. 1 and No. 2 nuclear plants,** operator Tokyo Electric Power Co. said on its website shortly after the temblor.

## Megaquake risk along Pacific coast higher than anticipated



The Asahi Shimbun

## **Megaquake risk higher for areas along Japan's Pacific coast**

[http://ajw.asahi.com/article/0311disaster/quake\\_tsunami/AJ201412200028](http://ajw.asahi.com/article/0311disaster/quake_tsunami/AJ201412200028)

The likelihood of a catastrophic quake striking within 30 years was higher in areas along the Pacific coast, including densely populated parts of the Kanto region, according to a national earthquake research body. The probabilities were included in a revised ground motion probability map released by the Headquarters for Earthquake Research Promotion on Dec. 19.

The new map is based on the latest earthquake projections and results of underground geological studies nationwide.

Several prefectural capitals in the region showed high probabilities of being hit by an earthquake with a seismic intensity of at least lower 6 on the Japanese scale of 7. The area around Yokohama showed a 78 percent probability--the highest--with 73 percent for Chiba, and 70 percent for Mito and Kochi. Tokyo's rating was 46 percent.

Percentages were higher for the Kanto region and southern Hokkaido compared with methods used in the past, while many other locations showed only differences of a few percentage points from the tentative survey in 2013.

The figures were calculated using 250-meter square units of land.

Many areas along the Pacific coast of the main Honshu island, such as Shizuoka, showed a high quake risk as they are situated along the Nankai Trough, the subterranean source of an expected megaquake. The 4-kilometer depression stretches 700 kilometers from Suruga Bay off Shizuoka Prefecture to areas southeast of Kyushu in southern Japan.

After the Great East Japan Earthquake in March 2011, changes were made to the way estimates are calculated in order to account for earthquakes that tend to be excluded from the realm of possibility.

Yoshimori Honkura, the chairman of the earthquake research committee under the Headquarters for Earthquake Research Promotion, said: "The probability map contains some uncertainties. Low probabilities do not mean the area is stable."

The map can be accessed at "Japan Seismic Hazard Information Station" (J-SHIS) website operated by the National Research Institute for Earth Science and Disaster Prevention (<http://www.jshis.bosai.go.jp/en/>).

December 22, 2014

## **Active fault under Higashidori?**

### **Faults under Higashidori plant may be active**

[http://www3.nhk.or.jp/nhkworld/english/news/20141222\\_24.html](http://www3.nhk.or.jp/nhkworld/english/news/20141222_24.html)

Japan's nuclear regulatory body says it cannot deny the possibility that a seismic fault under the Higashidori nuclear plant in northern Japan could become active in the future.

In a draft assessment compiled on Monday, a Nuclear Regulation Authority panel partly refuted the claims of the plant's operator, Tohoku Electric Power Company, that the faults under the facility are not active.

The panel of experts said in a draft last year that the so-called F-3 and F-9 faults running west of a reactor building were at a high risk of shifting in the future.

Tohoku Electric then carried out additional studies and submitted data that disputed this assessment.

While refuting the claims of the plant's operator, the panel members were divided over the possible movement of one of the 2 faults directly under key facilities, including the reactor building. They could not reach a conclusion.

Tohoku Electric has filed for a screening under new government regulations with an eye toward restarting the plant.

But should the authority finalize its assessment that the faults may be active, it will be forced to take additional earthquake-resistance measures.

### **Experts say faults at nuclear plant in northeast Japan could be active**

<http://www.japantimes.co.jp/news/2014/12/22/national/experts-say-faults-at-nuclear-plant-in-northeast-japan-could-be-active/#.VJhb9v-cJA>

Kyodo

A panel advising the Nuclear Regulation Authority said Monday it can't rule out the possibility that key geological faults running under the Higashidori nuclear power plant in Aomori Prefecture are active.

This won't immediately force Tohoku Electric Power Co. to scrap the sole reactor at the plant as the faults don't run directly beneath the unit, but it will probably have to remain offline much longer than was expected so further safety measures can be taken.

In compiling a new report on the assessment of geological faults at the plant, the panelists agreed that explanations and data submitted by Tohoku Electric are not sufficient to prove that two major faults, called F-9 and F-3, are not active.

The panel already acknowledged in May 2013 that the faults are likely to be active, but it has continued discussions after the utility conducted an additional probe in an effort to have the view overturned.

"The draft report does not show sufficient evidence to deny our claim," Tohoku Electric Executive Vice President Nobuaki Abe told a news conference Monday. "We would like the NRA to create an opportunity for (more) debate."

In quake-prone Japan, building reactors or other important safety facilities directly above active faults is prohibited.

The experts were divided over the activity of the f-1 fault, which runs directly beneath an important safety facility at the plant, and left open both possibilities. But they concluded that the f-2 fault, which lies right under the reactor building, is not active.

Despite the problem of geological faults, Tohoku Electric has already applied for a safety screening by the NRA, a necessary process for a reactor to be reactivated.

The regulator is expected to start full-fledged safety screening once the report is finalized.

In a related move, it has become highly likely that a reactor at Japan Atomic Power Co.'s Tsuruga nuclear plant in Fukui Prefecture will be shut down permanently after experts acknowledged that it is sitting right above an active fault.

Currently, all of Japan's 48 commercial reactors remain offline amid heightened safety concerns following the Fukushima crisis. The administration of Prime Minister Shinzo Abe is aiming to restart reactors that have cleared the NRA safety review based on new regulations introduced following the crisis.

## **Experts say faults at Tohoku Electric atomic plant possibly active**

<http://mainichi.jp/english/english/newsselect/news/20141222p2g00m0dm045000c.html>

TOKYO (Kyodo) -- A panel advising Japan's Nuclear Regulation Authority said Monday it cannot deny the possibility that key geological faults running under the premises of Tohoku Electric Power Co.'s nuclear power plant are active.

The move would not immediately force the utility to scrap the sole reactor at the Higashidori plant, located on the Pacific coast in northeastern Japan, as the faults do not run directly beneath the reactor, but suggests it may remain offline for quite a while until further safety measures are taken.

In compiling a new draft report on the assessment of geological faults at the plant, the panelists agreed that explanations and data submitted by Tohoku Electric are not sufficient to prove that two major faults under the plant, called F-9 and F-3, are not active.

The panel already acknowledged in May last year that the faults are likely to be active, but it has continued discussions after Tohoku Electric conducted an additional probe in an effort to have the view overturned. Tohoku Electric Executive Vice President Nobuaki Abe told a press conference after the panel meeting, "The draft report does not show sufficient evidence to deny our claim. We would like the NRA to create an opportunity for (more) debate."

In quake-prone Japan, building reactors or other important safety facilities directly above active faults is prohibited.

Regarding a fault called F-1, which runs right beneath some important safety facilities at the plant, the experts were divided over its activity and left open both possibilities.

Despite the problem of geological faults, Tohoku Electric has already applied for a NRA safety screening of the Higashidori plant, a process necessary for any reactor before being allowed to go back online. The regulator is expected to start full-fledged safety screening once the draft report is finalized.

In a related move, it has become highly likely that a reactor at Japan Atomic Power Co.'s Tsuruga nuclear plant will be shut down permanently after experts acknowledged that the reactor is sitting right above an active fault.

## No more hotspots

### Gov't to lift evacuation recommendation in Minamisoma, says radiation levels safe

<http://mainichi.jp/english/english/newsselect/news/20141222p2a00m0na008000c.html>

MINAMISOMA, Fukushima -- The central government plans to lift evacuation recommendations in this city on Dec. 28 for areas of high localized radiation, saying **the levels have dropped sufficiently since the Fukushima nuclear disaster.**

The government announced the news at a public briefing here on Dec. 21. The city is the only municipality that still has localized recommendations in place, which are separate from other, far broader evacuation recommendations and orders still in effect around the Fukushima No. 1 nuclear plant.

Residents at the briefing protested that the decision to lift the recommendations was "not valuing human life" and argued that the recommendations "should be lifted only from residences where the residents agree." However, government representatives insisted that the only requirement for lifting the recommendations was that radiation level fall below a certain level.

The localized evacuation recommendations in question were issued by the government for **"hotspots" where radiation exceeds 20 millisieverts per year, excluding normal background levels.** In Minamisoma, there are 142 such hotspots, covering 152 residences. Government radiation measurements taken since July this year show that all the residences are down to doses of less than 3.8 microsieverts per hour, equivalent to 20 millisieverts per year.

State Minister of Economy, Trade and Industry Yosuke Takagi, who heads the local nuclear disaster response headquarters, told residents, "To dispel unfounded rumors, it is important to get the message out that radiation levels have fallen sufficiently."

The national government had wanted to lift the evacuation recommendations in October, but gave up after determining that more work needed to be done to allay residents' fears. It set up a consultation center for residents and performed additional decontamination work for people who requested it.

Localized evacuation recommendations were also in place in the Fukushima Prefecture municipalities of Date and Kawauchi before being lifted in December 2012.

See also:

<http://www.fukushima-is-still-news.com/2014/12/all-radiation-hotspots-safe.html>

December 23, 2014

## Separate guidelines for evacuation zones

### Nuclear regulator panel discusses evacuation

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

A panel of experts at Japan's nuclear regulator has discussed evacuation plans for people around the Fukushima Daiichi nuclear plant, in the event of another accident that could disperse radioactive materials.

The Nuclear Regulation Authority is preparing for emergencies that could be set off by another accident at the Fukushima plant during its decommissioning process.

Japan's current safety guidelines for areas surrounding nuclear plants across the country were updated after the Fukushima accident. The guidelines also apply to the area near the Fukushima Daiichi plant as temporary measures.

Evacuation orders are still in effect in a wide area surrounding the Fukushima plant, so the expert panel is considering **creating separate guidelines for evacuation zones**.

At the meeting on Monday, experts agreed that the current guidelines can be applied to an area within a radius of roughly 30 kilometers from the plant. But they said they will listen to opinions from local governments when they make safety measures for residents beyond the 30-kilometer zone.

The experts effectively approved an evacuation plan which proposes residents inside the 30-kilometer zone be ordered to remain indoors. The plan also proposes that people who temporarily enter the zone within a 30-kilometer radius be ordered to quickly leave. Some experts pointed out it is necessary to consider how to notify them in the event of an emergency.

December 25, 2014

## Hiring high school student for decontamination work

### Tochigi firm warned for hiring high school student for decontamination work

<http://mainichi.jp/english/english/newsselect/news/20141225p2a00m0na002000c.html>

NASU, Tochigi -- A construction company hired a high school student for work to decontaminate houses tainted with radiation from the Fukushima nuclear disaster, the Mainichi Shimbun has learned.

The Nasu Municipal Government revealed on Dec. 25 that a construction firm in the town employed a male high school student from outside the town as a part-timer for decontamination work in possible violation of the Labor Standard Act. **The law prohibits engaging those under 18 for work that exposes individuals to harmful radiation.** The Ministry of Health, Labor and Welfare has ruled that the legal ban applies to decontamination work.

The municipal government gave a verbal warning to the president of the construction company, while reporting the incident to a local labor standards inspection office in November.



According to town officials, the company hired a second-year high school student in August last year and engaged him in work to transport gravel using a wheelbarrow at a residential decontamination site in the town for a total of 36 days until May this year.

The practice surfaced after the town received written tips in October this year. The president of the construction firm was quoted as telling town officials, "I was aware that he was a high school student, but didn't think it could constitute a legal violation."

The town has conducted decontamination work on residences at the cost of its own taxpayers' money.

December 26, 2014

## **Nasu contractor hired teen for house fallout decontamination work**

Kyodo

TOCHIGI PREF. – A construction firm in Nasu, Tochigi Prefecture, had hired a high school student under 18 part-time to engage in cleaning of a house garden contaminated by the 2011 Fukushima nuclear meltdowns, the municipal government disclosed Thursday.

The Ministry of Health, Labor and Welfare's guideline prohibits people younger than 18 to engage in decontamination work, based on the Labor Standards Act, which bans youths from working in areas exposed to harmful radiation.

According to the municipal government, the firm employed the boy from Tochigi part-time for 36 days between August last year and May to carry gravel used to cover the ground of a house in Nasu after the contaminated surface soil is stripped away. The radiation level at the site was more than 0.23 microsieverts per hour, and the decontamination work was subsidized by the municipal government. The boy has not suffered any health damage, the municipal government said.

The case came to light after an anonymous person reported it to the municipal government in October. The city reprimanded the firm in November and reported the case to the labor standards inspection office.

## **September leak at Oarai research center explained**

### **Cause of radioactive water leak determined**

[http://www3.nhk.or.jp/nhkworld/english/news/20141226\\_18.html](http://www3.nhk.or.jp/nhkworld/english/news/20141226_18.html)

A Japanese nuclear research organization says a spill of low-level radioactive water at its facility was caused by **a mistakenly loosened pipe valve**.

The incident took place at the **Japan Atomic Energy Agency's Oarai research center, northeast of Tokyo, on September 11th**.

Researchers at the facility found a pool of water in the basement of a building next to the structure housing a research reactor. The water contained a small amount of radioactive substances.

Agency officials told reporters on Thursday that **the water had come from a pool that contains spent nuclear fuel.**

They said a valve on a pipe connecting the pool with a tank of resin coolant in the basement of the building had become loose, allowing water to flow into the tank and spill out.

They said the valve may have been inadvertently loosened 2 years ago by workers during repairs to the building's floor, which was damaged in the massive earthquake in March of 2011.

The deputy head of the Oarai research center said that officials failed to make thorough safety checks because the reactor's operation has been halted.

He said the staff had learned a lesson from the incident and will try to prevent a recurrence.

December 28, 2014

### **Govt. ends Minamisoma "hot spot" evacuations**

<http://www3.nhk.or.jp/nhkworld/english/news/japan.html>

Japan's government has lifted all evacuation advisories for so-called hot spots with high radiation levels in Minamisoma City, Fukushima Prefecture.

The government lifted the house-by-house evacuation advisories on Sunday because radiation dosage levels in the area have fallen below the benchmark 20 millisieverts per year, thanks to decontamination work.

This follows similar moves in another city and a village 2 years ago in Fukushima Prefecture. All the hot-spot evacuation advisories in the prefecture have now been lifted.

With the lifting, residents of 152 households in Minamisoma city can return to their homes.

But city officials say about 80 percent of the residents will not return due to lingering radiation concerns.

79-year-old Katsuji Sato said he will continue to live in temporary shelter for the time being, since the fields next to his house have not yet been decontaminated.

He said the lifting will not change his life. He said he cannot have his first-grade grandchild visit due to the high levels of radiation surrounding his house.

He said he wants the government to decontaminate the neighboring hot spots in order to create a safe

residential environment.

The residents will continue to receive monthly compensation money of 100,000 yen, or about 830 dollars, from Tokyo Electric Power Company until March of next year, for the stress and suffering they have had to endure.

December 29, 2014

## No more hot spots but people still wary

### **Last recommended evacuation warning lifted in Fukushima, but many remain wary**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201412290040>

By MASAKAZU HONDA/ Staff Writer

MINAMI-SOMA, Fukushima Prefecture--The central government lifted on Dec. 28 the last recommended evacuation advisory for several districts in this city, saying radiation levels from the nuclear accident fell below the annual exposure limit.

However, many of the residents of 152 households within these districts voiced their opposition to the lifting.

The central government designated areas that registered high radiation levels outside the zones under mandatory evacuation orders as specific recommended evacuation spots following the triple meltdown at the Fukushima No. 1 nuclear power plant. The residents living within these locales were encouraged to evacuate from their homes.

The districts in Minami-Soma were designated as such because they were at risk of exceeding the annual accumulated dose limit of 20 millisieverts, or 3.8 microsieverts per hour.

The central government in June 2011 issued the advisory for some locales in the cities of Minami-Soma and Date and the village of Kawauchi, all in Fukushima Prefecture, home to 281 households. The advisory for Date and Kawauchi was lifted earlier.

Central government officials explained their latest decision to the residents and local officials, saying that the health risks are not expected because radiation levels in their sites now measure well below the designated limit of 20 millisieverts.

They also presented support measures to encourage the residents to return to their homes.

However, evacuee Katsuji Sato, among the residents of the 152 households, said he would not immediately return home.

The 79-year-old, who lives in temporary housing in Minami-Soma, had lived in a family of six of four generations before the Great East Earthquake and tsunami on March 11, 2011, set off the nuclear disaster. Sato's mother died where she evacuated to, and his eldest son, the son's wife and their elementary school child moved to Miyagi Prefecture.

“My wife and I cannot return to our home even though we want to unless decontamination work is undertaken again,” Sato said.

December 31, 2014

## Another example of sloppy management of workers' safety

### TEPCO's sloppy handling of suppressant led to spread of radioactive dust in 2013

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201412310025>

By MIKI AOKI/ Staff Writer

Tokyo Electric Power Co. diluted a dust suppressant that rendered it ineffective and allowed the spread of radioactive materials that contaminated 12 workers at the Fukushima No. 1 nuclear plant in summer 2013, officials said.

The suppressant is supposed to prevent radioactive dust from getting into the air and spreading. However, TEPCO not only diluted the suppressant to levels well below the manufacturers' recommended standard, but it also did not use the suppressant on a daily basis when removing rubble at the stricken nuclear plant.

#### The sloppy use of the dust suppressant continued for about a year.

“As a result, the effectiveness of the suppressant decreased and likely led to the spewing of radioactive materials in the summer of 2013,” an official with the Secretariat of the Nuclear Regulation Authority said. The NRA Secretariat issued administrative guidance to TEPCO, instructing the utility to use the suppressant in a safe manner.

According to an official with a dust suppressant manufacturer, the product is an alkaline liquid that solidifies after a few hours. It is mainly used to prevent the spread of asbestos.

The company recommends that when removing asbestos, the dust suppressant should be used as is or diluted in 10 parts water. It should also be sprayed daily throughout the removal process.

According to TEPCO officials, when workers were removing rubble from the No. 4 reactor at the Fukushima No. 1 plant, the dust suppressant was sprayed on the day before work and right before the removal of the rubble. The suppressant was either undiluted or diluted in 10 parts water.

However, from August 2012, when rubble removal began at the No. 3 reactor, the suppressant was diluted in 100 parts water, and it was used only once every several days or even once every several weeks, the officials said.

In summer 2013, when the spread of radioactive dust came to light, the suppressant had been used at the No. 3 reactor only twice, in mid-June and on Aug. 13.

“Dilution in 100 parts water produces the same result as using only water,” said an official at a dust suppressant manufacturer. “Because work should, in principle, only be conducted when the dust has been moistened with the suppressant, not using the suppressant for several days will naturally lead to the spewing of radioactive dust.”

In fact, on Aug. 12 and 19, 2013, when rubble was being removed, alarms went off at the Fukushima No. 1 plant because the spread of radioactive dust raised the radiation levels there. Twelve workers were confirmed to have been contaminated by radioactive materials.

On Aug. 19, the volume of radioactive materials released was 6,700 times normal levels, according to an estimate made by the NRA Secretariat.

On one occasion, airborne radiation levels increased at a location 3 kilometers from the Fukushima No. 1 plant.

TEPCO officials admitted that was likely caused by the spewing of radioactive dust after the improper spraying of the dust suppressant.

“When the dust suppressant was mixed in the nuclear fuel storage pool, the level of alkalinity increased, and there were concerns about the effect on equipment,” a TEPCO official said. “While we were aware there was no problem with the effectiveness of the suppressant, our actions in the end were insufficient.” The utility returned to using suppressant diluted in 10 parts water from October 2013, and the liquid was sprayed daily before and after work to remove rubble.

TEPCO did conduct an experiment to find out if dust solidified when the suppressant was diluted by 100 parts water, but no tests were done on the duration of that effect.

“The thinking toward safety management was extremely sloppy,” said Hiroyuki Mori, a professor of public policy at Ritsumeikan University who has conducted studies on the spread of asbestos at disaster-stricken areas. “The work should have been conducted while thinking foremost about the safety of the workers and local residents.”

An official with the NRA Secretariat’s office dealing with the accident at the Fukushima No. 1 plant said: “Initially, we did not check the concentration of the dust suppressant or the frequency with which it was used. We have since strengthened monitoring.”

January 3, 2015

## Fukushima rice under the radiation limit

### All rice grown in Fukushima pass radiation safety checks for first time

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201501030034>

All bags of rice harvested in Fukushima Prefecture in 2014 submitted for testing met the national standards for radiation, marking the first time that all bags fell within acceptable levels since the checks began in 2012.

Testing for radiation got under way after the March 2011 accident at the Fukushima No. 1 nuclear power plant.

In 2014, an estimated 10.75 million bags of rice were tested, and all were found to have less radiation than the national standard of 100 becquerels per kilogram.

The Fukushima prefectural government began testing all rice grown in the prefecture in 2012 after purchasing about 190 testing devices to be used throughout the prefecture.

In past testing, about 10 million bags of rice were checked annually. In 2012, 71 bags were found to exceed the safety standards, while in 2013, 28 bags were over the standard.

Bags of rice found to have less than the standard set in the Food Sanitation Law receive labels saying that testing has been completed. Bags of rice that exceed the standards are destroyed.

The prefecture plans to continue the radiation testing program.

Rice farmers in Fukushima Prefecture have attempted various methods to reduce the radiation in the rice. One measure involves changing the fertilizer used so that radioactive cesium is not absorbed by the rice plant.

(This article was written by Naoyuki Takahashi and Mana Nagano.)

January 4, 2015

## Utilities in no hurry to switch to dry storage



Spent nuclear fuel is kept in a dry cask for storage at the Tokai No. 2 nuclear power plant in Tokai in Ibaraki Prefecture. (Asahi Shimbun file photo)

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## Utilities balk at safer storage of spent nuclear fuel to avoid 'wasted investment'

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201501040021>



Power companies have resisted government calls to construct safer storage facilities for spent nuclear fuel and are instead waiting for a fuel reprocessing plant to finally start running after nearly two decades of delays.

The utilities say that building dry storage facilities, which hold spent nuclear fuel encased in metal or concrete casks, could prove **a waste of money if the Rokkasho reprocessing plant in Aomori Prefecture begins operations and takes all the spent fuel off their hands.**

**They also cite concerns in communities that host nuclear reactors that dry storage facilities could lead to permanent storage there.**

Under Japan's basic energy plan approved by the Cabinet in April last year, the central government promotes the construction and use of dry storage facilities.

Shunichi Tanaka, chairman of the Nuclear Regulation Authority, has repeatedly referred to the importance of such facilities, which are deemed safer and less expensive to operate than the traditional method of keeping spent nuclear fuel submerged in storage pools at nuclear plant.

**Spent fuel pools are usually located next to reactors for swift transport because the fuel rods continue to be highly radioactive and emit heat after use.**

The risk of using storage pools was exposed when all power sources were lost at the Fukushima No. 1 nuclear plant after the Great East Japan Earthquake and tsunami struck on March 11, 2011.

Tokyo Electric Power Co., operator of the plant, not only had to deal with three reactor meltdowns, but it was also forced to take measures to prevent the release of radiation from spent fuel storage pools at the site.

Under the dry storage method, the encased spent fuel is cooled with circulating air at a facility built separate from the reactor building. Dry storage is mainly used for spent fuel whose radioactive decay heat has already dropped to a certain level.

**One big advantage that dry storage has over storage pools is that it can continue to cool spent fuel even after a power failure in the event of a nuclear accident or natural disaster.**

In fact, spent fuel in a dry storage facility at the Fukushima No. 1 nuclear plant did not suffer any major damage in the 2011 disaster, according to TEPCO. [ ???]

The only other nuclear power station currently equipped with a dry storage facility within its plant site is Japan Atomic Power Co.'s Tokai No. 2 nuclear power plant in Ibaraki Prefecture.

**Chubu Electric Power Co. plans to set up a dry storage facility at its Hamaoka nuclear plant** in Shizuoka Prefecture in fiscal 2018. That plan was hatched before the Fukushima nuclear disaster.

But no other utility in Japan has moved in that direction despite the government's urging.

"At present, we are not considering it," said an official at Hokuriku Electric Power Co.

Hokuriku Electric operates relatively new nuclear reactors that have more storage capacity for spent fuel than utilities that have run the same reactors for decades.

But **power companies whose storage space for spent fuel is nearing capacity are also not showing a sense of urgency in constructing dry storage facilities.**

Kyushu Electric Power Co. and Shikoku Electric Power Co say they are still at the stage of weighing whether they should build such facilities.

Reports show that **spent fuel has already filled up 70 percent of the overall storage capacity of the nation's nuclear power plants.**

**The biggest reason the utilities are hesitant to build dry storage facilities is that the government has kept alive the Rokkasho nuclear fuel reprocessing plant project, despite its many problems.**

According to the project, the Rokkasho plant will take in the utilities' spent nuclear fuel and reprocess it for reuse at nuclear reactors around Japan.

The Rokkasho plant was originally scheduled to open in 1997. However, the start of operations has been delayed 21 times because of technical glitches, human error and safety issues.

Japan Nuclear Fuel Ltd., operator of the Rokkasho plant, has postponed the completion date to March 2016.

Still, electric power companies do not want to spend on dry storage facilities now because they believe the plant will start running and alleviate them of their spent fuel problems.

“Even if we build a dry storage facility, it would likely be a wasted investment,” said an official in the nuclear power industry, alluding to the Rokkasho plant.

The utilities say they are also concerned that building dry storage facilities could stoke fears among nearby residents and local officials that hazardous spent fuel would remain in their neighborhoods for a prolonged period.

Fukui Prefecture is home to 13 nuclear reactors, the most in the nation. The prefectural government demands that spent fuel removed from nuclear power stations in the prefecture be stored at an interim facility outside the prefecture.

“We see it as a problem that (spent fuel) could be kept here until the end of time,” said a prefectural official overseeing nuclear plant issues.

Tadahiro Katsuta, associate professor of nuclear energy policy at Meiji University, said the central government should provide incentives to spur utilities to shift to dry storage facilities.

“When the safety of a nuclear plant is at issue, it is obvious that dry storage is more reliable (than pools) since it does not require emergency measures to safeguard the facility in the event of an accident,” Katsuta said. “Financial benefits and setting a limit on the storage period should be considered.”

(This article was written by Ryuta Koike and Toshio Kawada.)

January 7, 2015

## Gov. Izumida remains adamant about restart

### Niigata governor still at odds with Tepco chief over reactor restarts

<http://www.japantimes.co.jp/news/2015/01/07/national/niigata-governor-still-odds-tepco-chief-reactor-restarts/>

Kyodo

NIIGATA – Niigata Gov. Hirohiko Izumida remained at odds Tuesday with Tokyo Electric Power Co. President Naomi Hirose over the restart of reactors at Tepco’s Kashiwazaki-Kariwa nuclear power plant in the prefecture, saying the utility has not done enough to probe the reasons behind the March 2011 meltdowns at the Fukushima No. 1 plant.

Izumida, who has said he will not approve the restart of the Niigata reactors unless all of the facts are discovered and made public on the Fukushima triple-core meltdowns, met Hirose for the first time in a year on Tuesday.

But the two remained far apart over the restart plan, as Tepco seeks to get the plant back online and has already scheduled meetings with local residents later this month.

The utility filed for the restart of reactors 6 and 7 at Kashiwazaki-Kariwa with the Nuclear Regulation Authority in September 2013.



"The (restart application) screening by the NRA is in full swing. We will start explaining to residents what safety measures we have put in place," Hirose told Izumida at the prefectural government office.

"The first thing we need is the full discovery of reasons behind the Fukushima accident," Izumida responded.

Izumida added that many Tepco officials have not agreed to the disclosure of documents that contain their interviews with the government investigation panel on Fukushima, calling this "backward-looking."

Hirose, however, said it is up to each Tepco official to decide whether to agree to disclose their interview transcripts.

Tepco said it will go ahead with plans to hold meetings with residents to explain its position in the city of Kashiwa on Jan. 22 and in the village of Kariwa on Jan. 23.

## **Niigata governor scolds TEPCO president, rejects reactor restarts**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201501070051>

NIIGATA--Niigata Governor Hirohiko Izumida on Jan. 6 remained adamantly opposed to restarting the Kashiwazaki-Kariwa nuclear plant and chided the president of the plant operator over the company's response to the Fukushima nuclear disaster.

Naomi Hirose, president of Tokyo Electric Power Co., was seeking Izumida's approval to bring two idle reactors at the plant back online, but he instead received criticism from the governor.

"(TEPCO) is taking a passive stance toward investigating the causes of the accident at its Fukushima No. 1 nuclear power plant," Izumida told Hirose.

TEPCO in autumn 2013 applied to the Nuclear Regulation Authority for safety screenings of the No. 6 and No. 7 reactors at the plant in Niigata Prefecture. The company not only has to win approval from the NRA, but it also needs the green light from host communities--and the prefectural governor--to resume operations.

During their talks, Hirose asked Izumida to inspect the Kashiwazaki-Kariwa nuclear power plant.

Izumida has repeatedly said he will not approve the reactor restarts unless TEPCO thoroughly examines the Fukushima nuclear accident, which unfolded after the Great East Japan Earthquake and tsunami in March 2011, and presents the results of its investigation.

He rejected Hirose's request for an inspection.

"There has not been a sufficient investigation into the causes of the (Fukushima) accident nor in-house disciplinary actions, so we cannot stand at the starting line of discussions on safety," the governor said. TEPCO plans to upgrade its office in Niigata Prefecture to a local headquarters by July and increase the number of employees there from the current 20 or so.

The plan is designed to allow TEPCO to more effectively consult with local governments and residents in obtaining their consent for the reactor restarts.

TEPCO has forecast a net profit for the business year ending in March 2015, following widespread cost-cutting measures and reduced fuel costs.

TEPCO Chairman Fumio Sudo said in a news conference late last year that the company will forgo an additional electricity rate hike in 2015.

Sudo, however, also said the company could slip back into the red for the fiscal year ending in March 2016 if it cannot resume operations at the Kashiwazaki-Kariwa nuclear plant.

## IAEA team at Kashiwazaki Kariwa

### IAEA to send experts to Kashiwazaki Kariwa n-plant

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The UN nuclear agency says it will send a team of experts this year to the Kashiwazaki Kariwa nuclear plant in Niigata Prefecture on the Sea of Japan coast of central Japan.

International Atomic Energy Agency Director General Yukiya Amano reportedly told Japan's industry Minister Yoichi Miyazawa of the plan when they met on Wednesday in Tokyo.

Tokyo Electric Power Company, the operator of Kashiwazaki Kariwa, had asked the IAEA to send its team to the plant at the request of the government.

#### Outside experts will join the IAEA team.

The team will look into the 6th and 7th reactors at the plant.

**They will assess the safety measures that have been taken at the plant after the accident** at Fukushima Daiichi four years ago. Those measures include raising the height of embankments and organizational reforms. They will assess the measures using international standards.

In Japan, this kind of investigation was carried out in the past at several plants, including the Kashiwazaki Kariwa power plant and the Mihama power plant in Fukui Prefecture.

The upcoming investigation is the first to be conducted in the country after the disaster at Fukushima Daiichi.

The IAEA and TEPCO are to discuss when the team will be dispatched.

The utility hopes to restart the Kashiwazaki Kariwa plant's 6th and 7th reactors after the ongoing safety examination by the Nuclear Regulatory Authority. It is still unclear when the examination will end.

Adding to this uncertainty, Niigata Governor Hirohiko Izumida is critical of TEPCO for its reluctance to have a thorough examination of the accident at Fukushima Daiichi.

## 2015 a "crucial" year for safety

## **NRA Chief: 2015 will be crucial for nuclear safety**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The head of Japan's nuclear power regulator says 2015 will be crucial for testing whether nuclear power plants in the country are safe.

Nuclear Regulation Authority Chairman Shunichi Tanaka held his first news conference of the year on Wednesday.

A number of nuclear power plants are likely to be restarted in 2015. They face stricter regulations introduced after the 2011 nuclear disaster in Fukushima.

Chairman Tanaka says the period just after restarting a nuclear power plant is the most important. He said facilities face particularly dangerous risks of accidents or trouble.

He said the reactors, which have been off-line for a long time, have a lot of new safety equipment. He stressed the authority will have to see if the plants can operate it properly. He noted this will make NRA's inspection in the pre-restart phase different than before.

2 reactors at the Sendai nuclear plant in Kagoshima Prefecture are expected to get a restart around March. They would be Japan's first reactors to go back online.

Tanaka said the NRA will carry out careful inspections at the Sendai plant and send staff from Tokyo.

How to handle massive radioactive wastewater stored at the damaged Fukushima Daiichi nuclear power plant continues to be a major issue in the new year.

The International Atomic Energy Agency is to assess the NRA this year for the first time since it was launched in September 2012.

## **Nine-year pressure build-up**

### **Nine-year pressure buildup on plate unleashed deadly Fukushima tsunami**

<http://www.japantimes.co.jp/news/2015/01/07/national/science-health/stealthy-nine-year-pressure-buildup-plate-unleashed-fukushima-tsunami/#.VK0iG3t1Cos>

AFP-JIJI

PARIS – The earthquake that set off the tsunami that caused the Fukushima nuclear plant disaster was unleashed by a stealthy nine-year buildup of pressure on a plate boundary, according to new research. Part of a fault where two mighty plates on the Earth's crust collide east of Japan was being quietly crushed and twisted for nearly a decade, they said on Tuesday.

It was this hard to detect activity that caused the fault eventually to rip open on March 11, 2011, unleashing a catastrophe.

The deformation “increased the stress in the source region . . . and finally triggered the earthquake,” said study co-author Kazuki Koketsu of the University of Tokyo.

“It had an impact on the occurrence time of the earthquake,” Koketsu said in an email. “It advanced the time (of the quake) by about one year.”

The earthquake occurred below the Pacific floor about 200 km (120 miles) east of the city of Sendai. It was one of the biggest ever recorded, measuring 9.0 on the moment magnitude scale.

The sea bottom shifted by about 27 meters (88 feet), causing massive tsunami that sparked the Fukushima disaster and left 18,000 people dead or missing.

The fault lies on the Japan Trench, where the Pacific plate dives beneath the North American plate, on which the Japanese archipelago lies.

Subduction faults like these have been responsible for some of the world’s most devastating quakes.

But they are also notoriously difficult to monitor, given that events are as rare as they are massive.

Centuries may elapse between occurrences, which means the danger could be undocumented.

Koketsu and colleague Yusuke Yokota looked at data supplied by the GeoNet network of Global Positioning System stations dotted across Japan.

They used the data to build a map of ground movement in the Tohoku and Kanto regions from March 21, 1996, to March 8, 2011 — the day before a magnitude-7.3 foreshock.

The team had to strip out seismic noise from relatively smaller earthquakes nearby in order to expose the background signals — the long, agonizing deformation on the Japan Trench.

The research builds on previous initiatives to harness GeoNet data, which have millimetric accuracy of land motion.

“Our paper proved that a network of GPS stations can monitor a slow event which may lead to a great subduction earthquake,” said Koketsu.

But, he cautioned: “It has not yet been proven that a slow event always occurs prior to every great subduction earthquake.”

The paper appears in the journal Nature Communications.

## Cooperation will continue with IAEA

### Japan, IAEA to continue Fukushima Daiichi work

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan and the International Atomic Energy Agency say they will keep working together closely on the crippled Fukushima Daiichi nuclear power plant.

Prime Minister Shinzo Abe met IAEA Director General Yukiya Amano in Tokyo on Wednesday.

Abe said the government highly evaluates the agency's role in decommissioning the plant, tackling contaminated water leaks there, and dealing with nuclear programs of Iran and North Korea. He said Japan will closely cooperate with the agency.

Amano said the IAEA will also closely coordinate policies with Japan on issues regarding the plant, nuclear non-proliferation and the peaceful use of nuclear energy.

He later told reporters that one of the agency's most crucial tasks is ensuring the safety of nuclear energy. He said the two sides agreed to cooperate toward that goal.

## Progress of a sort

### Kansai Electric ready to sign safety agreements with local gov'ts outside 30-km radius

<http://mainichi.jp/english/english/newsselect/news/20150107p2a00m0na008000c.html>

FUKUI -- Kansai Electric Power Co. President Makoto Yagi said on Jan. 6 that his company will sign safety agreements, if requested, with local governments that lie outside a 30-kilometer radius of the utility's nuclear power plants.

After visiting Fukui Gov. Issei Nishikawa to give New Year's greetings, Yagi told reporters, "We don't insist on 30 kilometers (from nuclear power plants)." He was referring to safety agreements that oblige utilities to thoroughly disclose information, among other details, in order to gain the approval of prefectural and local governments hosting their nuclear plants to restart their idled nuclear reactors.

Yagi said his company would be able to sign safety agreements with local governments that lie outside the 30-kilometer radius of its nuclear power stations, including the Takahama Nuclear Power Plant, in the so-called Urgent Protective Action Planning Zone, if requested. "We don't stop at 30 kilometers, and if requested, I think we will be able to sign safety agreements in accordance with the details of such requests," he said.

There are cases in which the utility signed safety agreements -- similar to those with local governments hosting its nuclear plants -- with local governments that were not hosting nuclear plants. Yagi then said **his company would like to consult with local governments concerned in light of the "spirit" with which the utility had signed safety agreements with local governments that were hosting its nuclear power stations.**

In the case of the accident at the Fukushima No. 1 Nuclear Power Plant, radioactive substances spread far beyond the 30-kilometer radius of the nuclear complex, among other types of damage.

Yagi expressed his intention to sign safety agreements with local governments that lie outside the 30-kilometer radius of the Takahama Nuclear Power Plant in Fukui Prefecture **because his company wants to restart the power station at an early date by signing safety pacts that could reassure residents of Kyoto and Shiga prefectures that lie near the border of the 30-kilometer radius. But residents of Kyoto and Shiga prefectures are strongly opposed to any move to reactivate the nuclear plant.**

Kansai Electric is reluctant to sign safety agreements -- similar to those with local governments hosting its nuclear facilities -- with local governments that are not hosting its nuclear stations. Therefore, it remains to be seen whether Kansai Electric will be able to go through necessary procedures smoothly and restart the Takahama nuclear power station at an early date.

In December last year, Kansai Electric applied for government approval for a plan to raise electricity rates for family users by 10.23 percent on average. Kansai Electric tentatively planned to resume operations at the No. 3 and 4 reactors at the Takahama Nuclear Power Plant in November this year, but a senior

company official said, "We want to reactivate them in early spring." But the utility is faced with the daunting task of securing the approval of prefectural and local governments in order to put its reactors back online.

In the case of the Takahama Nuclear Power Plant, those local governments that lie within the 30-kilometer radius include not only Fukui Prefecture but also Kyoto and Shiga prefectures. The Kyoto and Shiga prefectural governments demand safety agreements on par with those with local governments hosting the Takahama plant. Therefore, Kansai Electric wants to sign safety pacts with local governments outside the 30-kilometer radius in a bid to clear obstacles to restarting the reactors.

January 8, 2015

## More shelters for infirmed and elderly in case of nuclear accident

### More shelter sites planned near nuclear plants

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The Japanese government plans to create shelter facilities in wider areas around nuclear plants. These will be **mainly for the infirmed and elderly** in preparation for possible nuclear accidents.

During the nuclear disaster at the Fukushima Daiichi plant in 2011, many inpatients and elderly people died after they were evacuated from hospitals or nursing homes. Evacuation proved too strenuous and their health deteriorated.

Guidelines were established after the accident for hospitals and nursing homes to upgrade building equipment. This would enable the elderly and infirmed to remain there during nuclear emergencies.

The government has been subsidizing facilities **within 5 kilometers from nuclear plants** for this purpose.

The Cabinet Office has decided to **expand to a 10 kilometer radius** after requests from municipalities near nuclear plants. It is allocating an extra budget of about 76 million dollars for the expansion.

From April 2012 until March 2014 the government granted about 260 million dollars to 149 facilities across the country. The funds were used for doubling windows and installing air ventilation filters to keep out radioactive substances.

January 9, 2015

## **Korea checks safety of marine products**

### **Korean food safety inspectors plan second visit to judge marine exports**

Kyodo

South Korean food safety inspectors will pay a second visit to Japan next week before deciding whether to lift a ban on imported marine products, the Foreign Ministry said Friday.

During its four-day inspection, the team of South Korean researchers and consumer representatives will visit wholesale markets in Hokkaido, Aomori and Iwate prefectures to assess radiation inspection procedures for seafood. The visit begins on Tuesday.

A similar delegation in December visited the Fukushima No. 1 nuclear power plant and other locations, requesting additional data on ocean radiation levels, officials at the farm ministry said.

South Korea expanded its import ban in September 2013 to include all fishery products from Fukushima and seven other prefectures due to consumer worries over the toxic radioactive water leaks at the meltdown-stricken plant.

January 22, 2015

## **NRA gives green light to TEPCO**



Groundwater is pumped up in areas around reactor buildings of the Fukushima No. 1 nuclear power plant in Okuma, Fukushima Prefecture, on Aug. 26, 2013. (Pool)

## **NRA signs off on TEPCO plan to release decontaminated groundwater into sea**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201501220054>

Japan's nuclear watchdog gave the green light to the operator of the wrecked Fukushima nuclear power plant to discharge pumped up groundwater into the sea if radioactive substances in the water are within safety standards.

The Jan. 21 decision by the Nuclear Regulation Authority concerns groundwater from 41 wells, called subdrains, close to the No. 1 to No. 4 reactor buildings at the Fukushima No. 1 plant.

Operator Tokyo Electric Power Co. will be obliged to remove radioactive substances in the groundwater at its decontamination facilities.

The water must meet certain criteria before it is released into the sea.

The conditions per liter of water are: that radioactive cesium is less than 1 becquerel; radioactive substances that emit beta rays are less than 3 becquerels; and the level of tritium is less than 1,500 becquerels.

Although TEPCO does not have the means to remove tritium at its decontamination facilities, the levels of contamination must be within safety limits.

The NRA said the volume of groundwater that flows into the reactor buildings will be reduced by one-half. However, it remains unclear if the plan will be implemented as TEPCO is keen to get the approval of local residents, many of whom depend on fishing for their livelihoods.



The utility has been holding meetings with local fishery cooperatives since the summer to explain what it involved. Some members of the cooperatives seemed receptive to the plan, but others were not.

January 23, 2015

## Checking active fault near Shimane plant

### Regulator to probe fault near nuclear plant

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear regulator will study next month an active seismic fault that exists near a nuclear power plant in Shimane Prefecture, western Japan.

The fissure is 2 kilometers south of the complex at its closest point. Its length is one of the focal points in a safety screening requested by Chugoku Electric Power Company in December 2013.

The assessment is necessary to restart the plant's No.2 reactor.

The utility claimed the fault extends 22 kilometers. But the Nuclear Regulation Authority, or NRA, was not convinced. It instructed Chugoku Electric to conduct more research to verify the estimate.

But the power firm told a screening panel on January 16th that its reinvestigation proves its initial calculation is correct.

The report prompted the NRA to have one of its commissioners, Akira Ishiwatari, hold a 2-day, on-the-spot probe into the fault starting on February 5th.

Ishiwatari will look into the state of strata around what is believed to be the eastern end of the fault. Chugoku Electric has already dug up soil in a wide area there. The expert will also analyze data on soil layers in the plant's compound.

The safety evaluation could be prolonged depending on the outcome of the planned study.

## New bus service through no-go zone

## R East to run bus service through Fukushima no-entry zone

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201501230057>



Train services resume June 1 between Tatsuta and Hirono stations on the JR Joban Line. Temporary storage sites for contaminated soil and other waste are seen along the tracks. (Asahi Shimbun file photo)

East Japan Railway Co. (JR East) will start a bus service on Jan. 31 that runs through an area with high radiation levels near the stricken Fukushima No. 1 nuclear plant, officials said Jan. 22.

The service, operated by JR East's Mito branch, will be the first public transportation in the "difficult-to-return zone," the government-designated area where evacuees will not be allowed to return home at least until March 2017.

The route will connect Tatsuta Station in the town of Naraha and Haranomachi Station in Minami-Soma on the JR Joban Line. Train services between the stations have been suspended since the Great East Japan Earthquake and tsunami triggered the nuclear disaster in March 2011.

As an alternative to the suspended rail operations, the bus service will cover a 46-kilometer north-south stretch of National Route No. 6, according to the JR East Mito office. The section through the difficult-to-return zone will be 14 km.

Last summer, members of the Cabinet Office's team in charge of assisting the lives of disaster victims measured radiation levels along the 46-km route.

When they moved at speeds of 40 kph, they were exposed to about 1.2 microsieverts of radiation in an hour, according to the team.

The bus will run once in the morning and once in the afternoon in both directions with no stops along the route. The trip between Tatsuta and Haranomachi stations is estimated to take about one hour. The difficult-to-return zone includes areas of the towns of Futaba and Okuma, which jointly host the Fukushima No. 1 power plant.

January 24, 2015

## Evacuation drill (Genkai plant)

### Nuclear evacuation drill held in Kyushu

[http://www3.nhk.or.jp/nhkworld/english/news/20150124\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20150124_21.html)

A joint evacuation drill based on the scenario that there had been an accident at a nuclear power plant has been held in southwestern Japan.

The drill encompassed communities in Saga, Fukuoka and Nagasaki Prefectures. The hypothetical accident involved a cooling water leak and a power outage at a nuclear plant in the town of Genkai, Saga Prefecture.

Residents living up to 30 kilometers from the plant had to evacuate.

In the city of Imari, Saga Prefecture, 170 residents used cars and buses to move to a shelter in Kashima City, about 40 kilometers from the plant.

For the first time ever in a drill, cars traveling along the route were screened for possible radioactive contamination. Officials checked to see whether they could completely test a vehicle within a 2 minute period, as assumed by the government.

Residents of Madarashima Island, located 9 kilometers from the plant, practiced taking shelter in tents set up in a gymnasium of a local school, on the assumption that boats could not be used to evacuate them due to bad weather.

The tents are designed to prevent nuclear materials from entering.

A man in his 50s whose car was screened in the drill said if a real accident occurs, he would like to have his own body checked for radiation and not just his vehicle.

He also said that in the event of a real accident, there would most probably be a massive traffic jam as people would try to evacuate in their own cars, rather than in buses as were used in Saturday's drill.

January 26, 2015

## Nukes & Taiwan

### Taiwan's Ma won't rule out nuclear energy option

[http://www3.nhk.or.jp/nhkworld/english/news/20150126\\_34.html](http://www3.nhk.or.jp/nhkworld/english/news/20150126_34.html)

Taiwan's President Ma Ying-jeou has stressed that the option of using nuclear power should not be ruled out if Taiwan wants to avoid experiencing energy shortages.

Public opposition to atomic energy has been increasing in Taiwan since the 2011 Fukushima Daiichi nuclear power plant accident in Japan. Authorities froze construction of Taiwan's fourth nuclear power plant near Taipei in April last year.

Speaking at a national energy conference on Monday, Ma reiterated his pledge to slowly reduce dependency on nuclear power, with the aim of zero nuclear energy in Taiwan.

But he stressed that renewable energies are not stable and the construction halt on nuclear power plants may force Taiwan to suffer power shortages in several years.

He said Taiwan cannot afford to abandon any energy options.

Following Ma's remarks, some conference participants loudly expressed concerns about the safety of nuclear plants. A civic group also held a rally outside the venue to oppose nuclear power.

January 27, 2015

## More info needed on underground layers at Oma Plant

### Ground layer to be issue in Oma safety screening

[http://www3.nhk.or.jp/nhkworld/english/news/20150127\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20150127_30.html)

Japan's Nuclear Regulation Authority has requested detailed explanations about underground layers at a nuclear power plant under construction in Aomori Prefecture, northern Japan.

The Oma Plant is designed to operate solely on MOX, or mixed-oxide fuel, a combination of uranium and plutonium reprocessed from spent nuclear fuel. The facility would be the world's first commercial all-MOX nuclear plant.

The authority held the second meeting of safety screenings for the plant on Tuesday. NRA officials asked the plant's operator, J-Power, about emergency measures for serious accidents as MOX melts faster than

conventional nuclear fuel.

The nuclear plant is to be the first operated by J-Power. The officials requested detailed explanations on the operator's ability to deal with accidents.

They want J-Power to study if underground formations consisting of soft and hard layers could intensify jolts in earthquakes. The officials also asked for surveys of undersea faults along the coast of the Shimokita Peninsula, where the plant is located.

The officials said that the authority will conduct careful discussions on estimating the sizes of possible earthquakes.

Last April, Hakodate City in Hokkaido filed a lawsuit demanding that the state and operator stop the construction. The city is within 30 kilometers of the plant on the opposite side of the Tsugaru Strait. Hakodate officials said accidents at the plant could seriously damage the city.

## **Fishermen want to be included in TEPCO's decisions**

### **Fishers submit request over TEPCO wastewater plan**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japanese fishers have demanded that the operator of the crippled Fukushima Daiichi nuclear plant gain their understanding before releasing decontaminated water into the sea.

The head of a national federation of fisheries cooperatives, Hiroshi Kishi, submitted the request to industry minister Yoichi Miyazawa on Tuesday.

The Nuclear Regulation Authority last week released a plan to discharge decontaminated water below government standards into the nearby Pacific from 2017 or later. The measure is aimed at reducing the amount of water stored in tanks at the plant's compound.

Tokyo Electric Power Company is operating wastewater treatment systems called ALPS to remove most radioactive substances, resulting in a huge number of storage tanks in the compound.

The fishers' federation says the plan is deplorable and strongly requests that the operator not release the water without the understanding of the fishers and others.

Miyazawa said there's no change to the policy of gaining local approval in carrying out measures against wastewater and not allowing easy release.

After the talks, **Kishi said he was relieved to hear the minister's remarks. He stressed that at the moment fishers do not approve the idea of releasing decontaminated water even if it meets government standards. He added that he wants the nuclear regulators as well to know that.**

January 28, 2015

## **Nuclear plants are vulnerable**

### **Snowstorm shuts down US nuclear plant**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

A nuclear power plant in the US state of Massachusetts has been forced to shut down after a power line cut out during a blizzard hitting the East Coast.

Authorities say the incident is posing no danger to the public.

The Pilgrim Nuclear Power Station in Plymouth stopped running automatically early on Tuesday after the power supply from an off-site line was interrupted. Nuclear power plants receive a certain amount of power from outside for operational purposes.

The country's Nuclear Regulatory Commission and the plant operator say the facility is now being powered by emergency diesel generators and that the reactor is cooling down safely.

The plant had been operating with reduced output since Sunday because of the snowstorm. Emergency diesel generators had also been turned on before the incident took place.

The NRC said the plant has 2 main off-site power lines. The other one had already been disconnected because of weather concerns.

It is not yet known when the off-site power source will become operational. But the operator said the facility has enough fuel on-site to run the emergency generators for 10 days. It said additional off-site power is also available.

## **Work starts again at Daini plant**

### **Work partly resumes at Daini nuclear plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20150128\\_45.html](http://www3.nhk.or.jp/nhkworld/english/news/20150128_45.html)

Work at the Fukushima Daini nuclear power plant in northeastern Japan has partly restarted. Tokyo Electric Power Company suspended most activity at the Daiichi and Daini complexes earlier this month after a series of fatal accidents.

Both plants are in Fukushima Prefecture. The Daiichi complex suffered meltdown after the March 11th 2011 earthquake and tsunami but the Daini plant did not.

On January 19th of this year a worker in his 50s died after falling off the roof of a 10-meter high rainwater tank at Daiichi.

On the following day, a Daini worker in his 40s died after being stuck in the head by large equipment he was using.

The accidents forced Tokyo Electric to halt most of the work at the 2 complexes and conduct safety inspections. But operations to address radioactive wastewater have continued.

On Wednesday, 2 of the roughly 250 operations restarted at the Daini plant. These involve checking a crane at the No.1 reactor building and cleaning equipment that measures the density of radioactive substances in cooling water.

Tokyo Electric officials say they will resume other types of work at the plant after the company ascertains they are safe.

The officials add safety inspections at the Daiichi plant will continue at least throughout this week. Work at the complex is expected to resume next week, or later.

## Toward new guidelines on nukes

### Commission begins work on nuclear usage guidelines

[http://www3.nhk.or.jp/nhkworld/english/news/20150128\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20150128_32.html)

Japan's government commission on nuclear energy policy has begun hearing from experts to draw up new guidelines after the Fukushima Daiichi disaster.

The Atomic Energy Commission drew criticism 3 years ago after it was found to have held secret meetings with only pro-nuclear parties, including utilities and bureaucrats. The meetings took place amid compiling of Japan's nuclear energy policy after the accident in March 2011.

The commission is now tasked with presenting basic ideas for nuclear energy use, including processing of nuclear waste, rather than a detailed plan.

On Wednesday, the commission heard from University of Tokyo Professor Emeritus Yotaro Hatamura. He



headed a government panel investigating the disaster.

**Hatamura said accidents will occur as long as people keep using nuclear energy, and that unseen risk will remain even if certain standards are met.**

He said in that sense, the country's Nuclear Regulation Authority is correct to refrain from saying a facility is safe.

He stressed the **need to draw up plans for not only evacuation but also decontamination and reconstruction, assuming the possibility of accidents.**

The commission is set to compile the basic ideas in just over a year.

January 30, 2015

## Difficulties with contaminated water ongoing

### **Editorial: TEPCO must settle problems hampering water treatment at nuclear plant**

<http://mainichi.jp/english/english/perspectives/news/20150130p2a00m0na001000c.html>

Tokyo Electric Power Co. (TEPCO) has abandoned its goal of completing treatment of all radioactively contaminated water stored at its tsunami-ravaged Fukushima No. 1 Nuclear Power Plant by the end of March this year. The decision once again demonstrates the difficulties of treating such highly contaminated water.

The utility made the decision as the Advanced Liquid Processing System (ALPS) that it installed at the plant to remove radioactive substances from the contaminated water is not functioning properly. The situation could affect the company's work to decommission and dismantle reactors at the power station. The government and TEPCO should identify problems relating to the treatment of tainted water and steadily press forward with the treatment of such water.

Numerous tanks to hold radioactive water have been constructed at the Fukushima plant, making it look like an oil storage station. The amount of contaminated water is increasing by about 300 to 400 metric tons a day, as ground water flowing beneath the plant's nuclear reactor buildings comes into contact with nuclear fuel that has melted into the ground. If TEPCO were to continue to store highly contaminated water in tanks, it would increase the risk of such water leaking. Since tainted water emits a large amount of radiation, workers struggling to bring the nuclear crisis under control could be exposed. TEPCO has treated radioactive water using the ALPS and other devices, but over 270,000 tons of water remains untreated.

TEPCO promised to finish treating radioactive water at the plant by the end of fiscal 2014, while Prime Minister Shinzo Abe declared during Japan's 2020 Olympic bid that the crisis at the Fukushima No. 1 plant "is under control." Since taxpayers' money has been used to introduce ALPS, Prime Minister Abe has stated that the national government will take the lead in efforts to treat contaminated water. As such, the government and the prime minister cannot evade responsibility for the delay.



ALPS can remove 62 types of radioactive materials, **excluding tritium**. However, since it employed a newly developed technology, there was no guarantee that it would function as expected. The government and the plant operator should reflect on their lack of foresight.

TEPCO intends to freeze soil around the atomic power station's four reactors by March to block ground water from flowing onto the premises of the reactor buildings. Since the attempt is the first of its kind in the world, many experts have raised doubts as to whether the system will function as designed.

The government and TEPCO are expected to review their road map toward decommissioning the reactors at the plant as early as March. They should take effective measures that reflect the lessons learned from past mistakes rather than getting caught up with abiding by a schedule.

The central government set up Japan's Nuclear Damage Compensation and Decommissioning Facilitation Corp. in August 2014 to increase state involvement in decommissioning the Fukushima No. 1 power plant. There are also other government organizations regulating nuclear plants, such as the Nuclear Regulation Authority. The government should clarify how it will supervise and instruct TEPCO, and state which organizations are responsible for what.

Fatal work-related accidents occurred at the Fukushima No. 1 and No. 2 nuclear plants this month, and work to bring the nuclear crisis under control has been suspended at the No. 1 power station to conduct an emergency inspection of safety measures.

Approximately 7,000 people work at the No. 1 plant a day. The figure is two times higher than two years ago because additional workers have been assigned to work to freeze soil around the plant's reactors. If further work-related accidents were to occur at the power station, it would obstruct efforts to decommission and dismantle the plant's reactors. **Top priority should be placed on the safety of workers.**

January 31, 2015

## TEPCO's safe and steady mantra

### **EDITORIAL: Safe and steady needs to be TEPCO's mantra in Fukushima cleanup**

<http://ajw.asahi.com/article/views/editorial/AJ201501310041>



Workers wipe water from a cask containing nuclear fuel that was removed from the No. 4 reactor at the Fukushima No. 1 nuclear power plant on Dec. 20. (Pool)

Come March, it will have been four years since the triple meltdown at the Fukushima No. 1 nuclear power plant triggered massive leaks of radioactive material.

Work to remove unspent nuclear fuel from a storage pool at the heavily damaged No. 4 reactor building was completed at the end of last year as planned. Efforts to clear debris, a major source of radiation, from the wrecked nuclear plant have also made progress. As a result, the areas where workers need to wear full-face protection masks have narrowed.

These facts seem to suggest that the Fukushima cleanup work is finally beginning to move smoothly forward.

However, Tokyo Electric Power Co., the operator of the plant, said last autumn that operations to remove spent and melted nuclear fuel from the No. 1 reactor will be delayed by two to five years from the original schedule. Earlier this month, the embattled electric utility also said the disposal of radioactive water stored in on-site tanks will not be finished on schedule.

**Behind these delays is the grim reality that existing technology and expertise is not up to the task of dealing with this unprecedented situation. Things are not going as planned in many ways.**

The crippled nuclear plant still poses all sorts of risks and hazards to workers. TEPCO should place top priority on safety and steady progress in proceeding with cleanup work. What it must not do is adopt a slapdash approach in pursuit of accomplishing the task quickly.

**Some 7,000 workers can be found on any given weekday at the Fukushima No. 1 plant, more than double the 3,000 or so that were there in April 2013.**

The precise locations of the melted nuclear fuel rods of the No. 1 reactor are still not known, nor is their condition. Another unknown is from which part of the reactor the melted fuel can be removed.

**First of all, technology has to be developed to ascertain the state of the nuclear fuel under the high levels of radiation.**

TEPCO has decided to delay to fiscal 2021 the start of the removal of spent fuel from the No. 1 reactor. The work was originally slated to begin in fiscal 2019 under the road map for decommissioning that was unveiled in June 2013 by the government and TEPCO. Similarly, the start of the removal of melted fuel rods will be postponed to fiscal 2025 from fiscal 2020. The situation is more or less the same with the No. 2 and No. 3 reactors.

In September 2013, Naomi Hirose, TEPCO president, promised Prime Minister Shinzo Abe that the disposal of highly radioactive water would be completed by the end of March 2015. But only about 60 percent of the work has been done so far as a raft of problems, including glitches in equipment to filter out radioactive substances, caused delays.

There are special circumstances behind the individual cases of delay.

A worker at the plant died on Jan. 20 after falling into an 11-meter-high water tank during an inspection.

The cause of the accident is under investigation.

**The number of work-related accidents at the plant has increased significantly as TEPCO brought in more workers for cleanup operations.**

The number of accidents in the current fiscal year, which runs through March, grew to 40 as of November, up sharply from 23 for all of fiscal 2013.

This troubling data raises concerns that safety management may have been put on the back burner under pressure to carry out tasks according to schedule. Errors that lead to accidents involving workers could also cause more cases of radioactive contamination.

Last week, the Nuclear Regulation Authority announced a draft medium-term timetable for efforts to reduce risks at the plant. The draft points out that the growing number of work-related accidents is a serious problem. **It calls for a marked improvement in working conditions.**

In order to make sure that cleanup work will be carried out safely and steadily, the NRA and the government need to provide appropriate support based on the actual conditions at work sites, which are often fraught with risks.

## US "watering down" safety proposal

### Global nuclear safety push to be softened by U.S. objections

<http://www.japantimes.co.jp/news/2015/01/31/world/global-nuclear-safety-push-softened-u-s-objections/#.VMvvAC51Cos>

by Shadia Nasralla

Reuters

VIENNA – The United States looks set to succeed in watering down a proposal for tougher legal standards aimed at boosting global nuclear safety, according to senior diplomats.

Diplomatic wrangling will come to a head at a 77-nation meeting in Vienna next month that threatens to expose divisions over required safety standards and the cost of meeting them, four years after the Fukushima disaster began in Japan.

Switzerland has put forward a proposal to amend the Convention on Nuclear Safety, arguing stricter standards could help avoid a repeat of Fukushima, where an earthquake and tsunami sparked a triple nuclear meltdown, forced more than 160,000 people to flee nearby towns and contaminated water, food and air. Thousands lost their homes and remain in temporary housing.

"If the convention is already perfect, why did Fukushima happen?" said one senior diplomat involved in the matter.

But Russia and the United States have opposed such a change, the diplomats say.

A reform of the CNS would increase industry costs, as existing nuclear plants, especially older ones, would have to be refitted. The United Nations atomic watchdog says there are 439 nuclear power reactors currently in operation globally, with 69 under construction.

Mark Hibbs, proliferation expert at the Carnegie Endowment think-tank, said those in favor of the amendment argue their opponents are motivated by protecting the nuclear industry and electric utility companies.

Critics of the plan say the U.S. industry has already spent billions of dollars on improving nuclear safety since Fukushima, Hibbs added.

A compromise proposal obtained by Reuters earlier this month shows that CNS member countries are likely to issue a declaration or statement echoing the amendment proposal, which had broad European backing, rather than change the treaty.

"New nuclear power plants should be designed and constructed with the objective of preventing accidents," and minimizing off-site contamination in case of accidents, a document dated December 2014/January 2015 said, echoing the wording of the Swiss proposal, but categorized as a "statement."

"Reasonably achievable safety improvements identified at existing plants during . . . safety assessments should be oriented to these objectives and be implemented in a timely manner."

Such a declaration would mean less pressure on countries that fail to impose the tougher standards. Even an amended convention would only leave scope for punishment in the form of peer reviews.

Three senior Western diplomats confirmed that a change to the convention itself is very unlikely to get the green light at a diplomatic conference on the CNS in Vienna starting on Feb. 9, after the United States objected to such a step.

Another scenario could see the amendment simply voted down or shot down through procedural issues without even a joint statement — a "pessimistic" outlook, according to one diplomat, as it would show diplomatic divisions over nuclear safety.

"I think the United States government is afraid of any principle that would even suggest that current reactors need to be retrofitted to meet modern standards," said Edwin Lyman of the Washington-based Union of Concerned Scientists.

"We have many plants (that face) hazards far greater than those they were originally designed to withstand decades ago . . . A declaration . . . would allow signatories to avoid even the obligation to discuss the matter in their reports."

A U.S. official said that his country strongly supports the convention and wants it, and the diplomatic conference, to be successful, but did not comment on an amendment that may face political and legal opposition in the United States.

February 4, 2015

## Onagawa's faulty inspection reports

### 4000 errors in inspection records at Onagawa plant

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Tohoku Electric Power Company says it has found more than 4,000 improper entries in its inspection records about one of the reactors at its Onagawa nuclear power plant.

The initial inspection was held to check a wide range of facilities at the plant's No. 2 reactor after the great earthquake that hit northeastern Japan. The operator is hoping to restart the reactor about 100 kilometers north of the crippled Fukushima Daiichi plant.

But Japan's Nuclear Regulation Authority pointed out last year that Tohoku Electric's inspection was lax and the firm was re-examining the inspection records on the No. 2 reactor.

Company officials said at a news conference on Wednesday that the utility has scrutinized all the inspection records for the reactor since August 2011.

They said in some cases workers entered "no problem" for parts that didn't exist, citing the example of monitoring equipment for a valve which was not there.

In other cases, incorrect product types and serial numbers were left untouched. They say there were 4,188 errors in total.

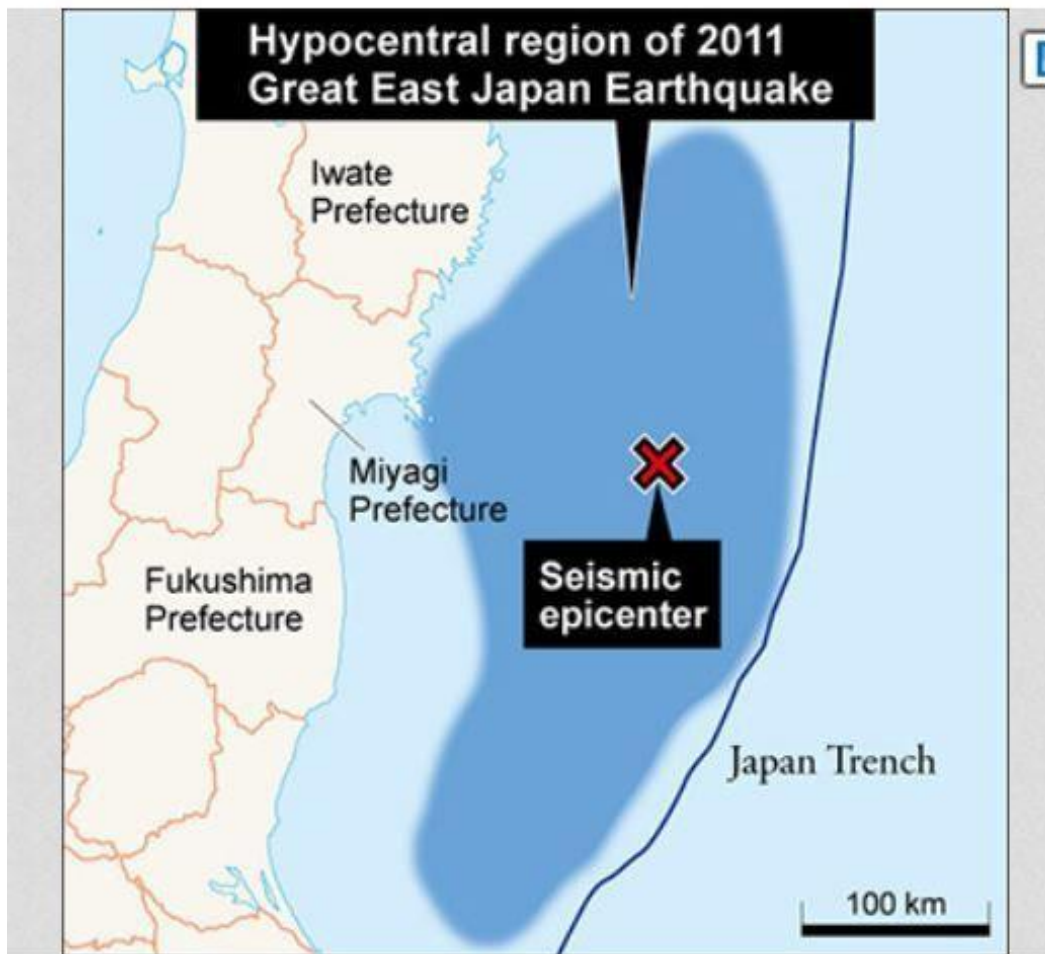
Managing Director Takao Watanabe apologized to people in the region for causing concern, although he asserted **the improper entries will not lead to any safety problems.**

The company says it will also check the inspection records for the No.1 and No. 3 reactors.

## Pressure back to pre-disaster levels

### Tectonic stress levels off northeastern Japan back to pre-disaster state

[http://ajw.asahi.com/article/0311disaster/quake\\_tsunami/AJ201502040069](http://ajw.asahi.com/article/0311disaster/quake_tsunami/AJ201502040069)



By SUSUMU YOSHIDA/ Staff Writer

Pressure exerted by tectonic plate movement off Tohoku that triggered the 2011 earthquake and tsunami has returned to pre-disaster levels, seismologists say.

"Large earthquakes might occur more randomly distributed in time than conventionally expected," said Bogdan Enescu, an associate professor at the University of Tsukuba.

Researchers from the university and Switzerland-based Eidgenössische Technische Hochschule analyzed seismic data collected by the Japan Meteorological Agency since 1998.

As part of the study, the team calculated b-values, a ratio comparing the occurrence of small earthquakes in a specific area with larger ones.

Because the b-values decline to under 1 when the frequency of large quakes increases, they assumed values of less than 1 are indicative of high plate stress in the areas being studied.

Although readings in the region at the center of the 2011 earthquake hovered around 0.8 to 0.9 from 1998 until 2005, the b-values dropped to around 0.6 to 0.7 in mid-2005. Those figures then surged to 1 or higher after the Great East Japan Earthquake of March 11, 2011.

But the b-values started to decline again around 2013, and returned to around 0.8 by the fall of 2014--almost the same level registered prior to the magnitude-9.0 quake.

"Observing b-values could be useful in improving the accuracy of massive earthquake forecasting," said Enescu.



The findings were published in the British scientific journal Nature Geoscience on Feb. 3.

February 5, 2015

## NRA studying fault near Shimane plant

### Regulator surveys fault near Shimane nuclear plant

[http://www3.nhk.or.jp/nhkworld/english/news/20150205\\_34.htm](http://www3.nhk.or.jp/nhkworld/english/news/20150205_34.htm)

Japan's nuclear regulator is studying an active fault near a nuclear power plant in Shimane Prefecture, western Japan.

The Nuclear Regulation Authority on Thursday started the survey of the fissure lying 2 kilometers south of the plant.

The survey is aimed at checking the results of a report submitted to the authority by plant operator Chugoku Electric Power Company for a safety screening. The assessment is a prerequisite for restarting the plant's No. 2 reactor.

**The length of the fault and its structure beneath the plant complex are among the focal points to determine the facility's earthquake resistance level.**

NRA commissioner Akira Ishiwatari on Thursday studied a trench dug beyond what the utility says is the eastern end of the fault. He also visited a hill where the ground surface was scraped off and layers are being revealed for research.

The commissioner then visited a site near the coast under which the utility says the fault's western end lies. He was briefed by utility officials about their topographic investigation there. **Chugoku Electric says the fault extends 22 kilometers.**

Ishiwatari later said he understood most of the officials' explanations. But he said he told them that additional studies will be needed because he now has **questions about the fault's western end.**

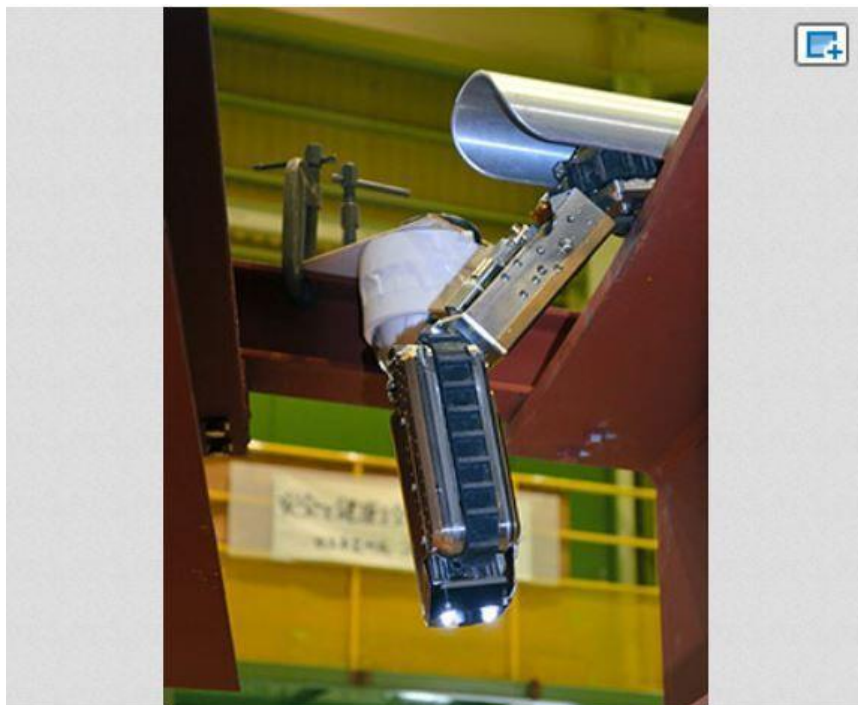
The commissioner on Friday plans to study the results of fault investigations the utility conducted in the plant's compound.

February 6, 2015

## New Robot

### New 'transformer' robot changes shape to access deadly Fukushima nuclear facilities

<http://ajw.asahi.com/article/business/AJ201502060059>



The new shape-changing robot developed by the International Research Institute for Nuclear Decommissioning is put through tests in Hitachi, Ibaraki Prefecture, on Feb. 5. (Tsuyoshi Nagano)



By TSUYOSHI NAGANO/ Staff Writer

HITACHI, Ibaraki Prefecture--A new shape-changing robot has been rolled out that can chart previously inaccessible areas of the damaged containment vessels at the crippled Fukushima No. 1 nuclear power plant.

The new device was demonstrated Feb. 5 at a plant owned by Hitachi-GE Nuclear Energy Ltd., one of the firms involved in its development. The International Research Institute for Nuclear Decommissioning, an organization made up of electric power companies and nuclear power plant manufacturers, developed it with a government subsidy.

The probe was conceived as a way to examine the containment vessels, which are too radioactive for humans to enter. It is scheduled for deployment at the No. 1 reactor building, which contains melted fuel, this spring.

The tubular-shaped robot, measuring 60 centimeters long in its normal state, can transform itself depending on the space it is trying to enter and the task to perform.

In the demonstration at the factory, the robot, in its tubular form, made its way through a pipe with a diameter of 10 cm. On the other side of the pipe, it changed shape to crawl around and capture images of the area.

The plan is to have the probe access the containment vessels through the holes in the wall through which electrical power lines pass.

Because strong radiation is harmful to electronic machines as well, the robot's camera is only guaranteed to function for 10 hours. The device can also take radiation and temperature readings.

## **Crawler robot to inspect Fukushima reactor vessels**

[http://www3.nhk.or.jp/nhkworld/english/news/20150206\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20150206_16.html)

Japanese engineers have unveiled a shape-changing crawler robot designed to inspect crippled reactors at the Fukushima Daiichi nuclear plant.

Hitachi-GE Nuclear Energy, a Hitachi subsidiary, and others developed the robot to probe the interior of reactor containment vessels.

The remote-controlled machine measures roughly 20 centimeters long, 30 centimeters wide and 10 centimeters high in its rectangular configuration. It can transform into a rod-like form to crawl through narrow pipes, such as those leading to the containment vessels.

The robot is equipped with a camera, dosimeter and thermometer.

The company showed the robot on Thursday to reporters in Hitachi City, northeast of Tokyo. The machine rearranged itself into a rod-like shape and went through a pipe 10 centimeters wide and 5 meters long.

It then changed back into its rectangular form, moved down to the floor, and traveled across the uneven surface.

Hitachi-GE officials say the robot will be used at the No.1 reactor at Fukushima Daiichi in April or May.

Radiation levels inside containment vessels there are too high for humans due to the 2011 nuclear accident.

Hitachi-GE Nuclear Energy engineer Yoshinori Takahashi said it will be the first inspection of a container vessel by a self-propelled robot. He expressed hope that the robot will collect a variety of data to help with decommissioning work at the Fukushima reactors.

## Hokkaido holds blizzard evacuation drill

### Nuclear drill held for blizzard conditions

[http://www3.nhk.or.jp/nhkworld/english/news/20150206\\_26.html](http://www3.nhk.or.jp/nhkworld/english/news/20150206_26.html)

Japan's northernmost prefecture of Hokkaido and its local governments have conducted a nuclear evacuation drill for blizzard conditions.

The Tomari plant is near Kyowa Town in western Hokkaido, and is currently offline. This region is often hit by heavy snow and blizzards in winter.

Friday's drill was based on the assumption that the power supply for the reactors' cooling system had stopped operating. It also assumed that workers were unable to gather at an offsite control room in Kyowa Town due to a severe snowstorm.

Officials from the prefecture, the town and the central government discussed response measures via a tele-conference system.

A bus was used to evacuate residents on the assumption that the storm had calmed down an hour later.

The exercise identified the problems of whether roads can be quickly cleared of snow and how people can be evacuated if their homes are buried under snow.

The authorities say they will review Friday's drills to improve the evacuation methods.

## Won't do

### Regulator: Probe of seismic fault not sufficient

[http://www3.nhk.or.jp/nhkworld/english/news/20150206\\_36.html](http://www3.nhk.or.jp/nhkworld/english/news/20150206_36.html)

Japan's nuclear watchdog says another survey may be needed on an active seismic fault near a nuclear power plant in Shimane Prefecture, western Japan.

The Nuclear Regulatory Authority, or NRA, on Thursday began studying the active fault at the Shimane nuclear plant which is operated by Chugoku Electric Power Company.

The survey focuses on whether an assessment by the plant operator is adequate. The assessment is a prerequisite for restarting the plant's No. 2 reactor.

On Friday, NRA commissioner Akira Ishiwatari **said the utility's assessment of the fault lying 2 kilometers south of the plant is not sufficient and he asked the company to conduct additional probe.**

Ishiwatari added that his agency may have to do an on-site survey again depending on its findings.

**Based on its assessment so far, the utility says that the fault is 22 kilometers long.**

**But NRA says that if the fault is longer it will be the focus of further screenings. The analysis concerns the jolts that would result from an earthquake and the resistance to those shocks the plant needs.**

February 7, 2015

## Flounder OK in Ibaraki waters



## Shipment ban lifted on all flounder in Ibaraki

[http://www3.nhk.or.jp/nhkworld/english/news/20150207\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20150207_16.html)

Japanese officials have lifted a ban on the shipment of flounder caught off northern Ibaraki Prefecture for the first time in 3 years. They say the fish has cleared radioactive tests.

The central government ordered the ban for the entire prefecture in April 2012. This was after radioactive cesium exceeding its limit was detected in the catches.

It has since lifted the restriction on many fishing areas. But the ban continued for the fish caught in waters north of Hitachi City, which borders Fukushima Prefecture.

The latest decision means all flounder catches in the prefecture will be cleared for shipment.

Ibaraki prefectural officials have conducted 57 radiation tests since last year. They say no radioactive cesium was detected in 37 of the tests, and the other 20 found that the maximum level of cesium was below one-seventh of the government's limit.

A fisheries official says the prefecture will conduct more tests and will also make efforts to dispel persistent unfounded rumors about the safety of its food.

February 8, 2015

## Another eruption soon?

### Experts alarmed by signs of possible eruption of volcano on outlying Kyushu island

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201502080023](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201502080023)

By TAKAYUKI KOZAKI/ Staff Writer

KAGOSHIMA--A volcano on an inhabited island in Kagoshima Prefecture that erupted last August for the first time in 34 years is again showing signs of increased volcanic activity.

The amount of volcanic gas emitted from Mount Shindake on Kuchinoerabujima island has increased greatly this year.

Experts said there was a possibility of volcanic activity, such as rising magma, and urged caution about a possible new eruption.

"There is the possibility that magma has reached close to the surface or its volume has increased," said Masato Iguchi, who heads the Sakurajima Volcano Research Center under Kyoto University's Disaster Prevention Research Institute.

When Mount Shindake erupted on Aug. 3, 2014, the first time since September 1980, volcanic fumes reached as high as 800 meters. A pyroclastic surge in which volcanic ash and hot gas flow quickly near the crater also occurred.

The Japan Meteorological Agency (JMA) **raised the alert level from 1 to 3 on the scale of 1-5, meaning that restrictions are in place on approaching the 626-meter-high mountain.**

About half of the approximately 140 residents on the island of about 36 square kilometers evacuated at that time. No injuries were reported, but 10 seismographs near the crater were damaged by falling volcanic rocks and cinder.

**Normally after an eruption the volume of sulfur dioxide and other volcanic gas declines.**

**However, the volume being emitted from Mount Shindake has begun increasing from the start of 2015.**

According to JMA officials, over the five-year period before the eruption, the daily volume of gas emitted was between 20 to 220 tons.

However, the daily volume increased to 500 tons in October 2014, 700 tons in November and as much as 1,900 tons in December. On Jan. 16, 2015, a volume of 3,100 tons was recorded. The volume was 2,700 tons on Feb. 1.

**The mountain itself also shows signs of expanding.**

The JMA's Fukuoka Regional Headquarters said there was a possibility of an eruption on a similar level as in last August occurring at any time.

It urged caution because volcanic rocks could be spewed over a radius of 2 kilometers from the crater and because there was also the possibility of a pyroclastic flow that could reach the ocean occurring in a southwest direction from the crater.

With no staff on the island to observe the volcano, experts have to rely on mechanical observations.

"Efforts should be made to construct a system of dispatching JMA workers to the island in order to detect an eruption as soon as possible and instruct residents to evacuate," Iguchi said.

February 9, 2015

## **Proposed CNS amendment derailed by US**

### **U.S. derails amendment to toughen nuclear safety pact: diplomats**

<http://www.reuters.com/article/2015/02/09/us-nuclear-safety-idUSKBN0LD22520150209>

Reuters

VIENNA – The United States has derailed a proposal to toughen nuclear safety standards by amending a global atomic treaty, diplomats said, with opponents of the move arguing it would get mired in lengthy parliamentary ratification.

Months of wrangling about the future of the 77-nation Convention on Nuclear Safety (CNS) culminated at a Vienna meeting diplomats feared could expose divisions over safety standards four years after the Fukushima disaster started.

Switzerland had put forward a proposal to amend the CNS, arguing stricter standards could help avoid a repeat of Fukushima, where an earthquake and tsunami sparked triple nuclear meltdowns, forced more than 160,000 people to flee nearby towns and contaminated water, food and air.

But Russia and the United States opposed an amendment of the CNS, diplomats told Reuters.

The gathering approved a Vienna Declaration on Nuclear Safety on Monday endorsing the main ideas of the proposed amendment, such as refitting old nuclear plants and minimizing off-site contamination in case of accidents.

But it does not create a piece of international law.

Some opponents of amendments argued the lengthy process of pushing them through national parliaments would run counter to the aim of increasing safety standards quickly.

Changing the convention itself to be more punishing could have been off-putting for countries already reluctant to fully submit themselves to peer reviews, some diplomats said.

"The ratification process for an amendment would have distracted the focus of the contracting parties to pursue full participation," one senior U.S. official said.

Critics of an amendment say U.S. industry has already spent billions of dollars on improving nuclear safety since Fukushima.

"Opposition was mainly politically motivated as it would have been hardly possible for some countries to domestically ratify a changed convention," Hans Wanner, head of the Swiss nuclear watchdog, said in a statement posted on the Internet.

"Many countries also fear massive cost increases by committing to refit older facilities," he said.

Rafael Grossi, Argentina's ambassador in Vienna and head of the conference, said that what might look like a weaker document to some is a practicable solution to others. "We tried to concentrate on what was achievable now," he told reporters.

## Rise in wildfires & radiation

### Rise in wildfires may resurrect Chernobyl's radiation

<http://www.newscientist.com/article/dn26933-rise-in-wildfires-may-resurrect-chernobyls-radiation.html#.VN4W7S5Rp2D>

Fallout from the world's worst nuclear accident just won't go away. Radioactive clouds may once again spread over Europe, as rising fires release radiation locked up in the upper layers of soil in the dense forests near Chernobyl in Ukraine and Belarus

Forest fires there have already been re-distributing that radioactivity over Europe. But the situation is set to worsen with climate change, political instability – and a bizarre effect of radiation on dead leaves.

After a reactor at the Chernobyl nuclear plant exploded in 1986, people were evacuated from 4800 square kilometres of the most heavily contaminated areas in Ukraine and neighbouring Belarus. This "exclusion zone" became a haven for wildlife and a dense boreal forest.

Nikolaos Evangeliou at the Norwegian Institute for Air Research and colleagues have analysed the impact of forest fires in the region, and calculated their future frequency and intensity. To do so they fed satellite images of real fires in 2002, 2008 and 2010, and measurements of radioactive caesium-137 deposited on the area, to models of air movements and fires.

They estimate that of the 85 petabecquerels of radioactive caesium released by the Chernobyl accident, between 2 and 8 PBq still lurk in the upper layer of soil in the exclusion zone. In another ecosystem this might gradually fall with erosion or the removal of vegetation. But in these abandoned forests, says Evangeliou, "trees pick up the radioactive ions, then dead leaves return it to the soil".

### Radioactive smoke

The team calculates that the three fires released from 2 to 8 per cent of the caesium, some 0.5 PBq, in smoke. This was distributed over eastern Europe, and detected as far south as Turkey and as far west as Italy and Scandinavia.

"The simulation probably underestimates the potential risks," says Ian Fairlie, former head of the UK government's radiation risk committee, who has studied the health impacts of Chernobyl. That's because the estimate depends on the half-life the team assumed for Cs-137, he says, and some investigators believe it is longer.

The team's calculated release would have given people in the nearby Ukrainian capital, Kiev, an average dose of 10 microsieverts of radiation – 1 per cent of the permitted yearly dose. "This is very small," says Tim Mousseau of the University of South Carolina at Columbia, a co-author of the study. "But these fires serve as a warning of where these contaminants can go. Should there be a larger fire, quite a bit more could end up on populated areas."

And the average dose isn't the problem. Some people will get much more, as fires dump radioactive strontium, plutonium and americium as well as caesium unevenly, and as some foods concentrate these heavy metals, for example caesium in mushrooms. "The internal dose from ingestion can be significant," says Mousseau. The resulting cancers might be hard to spot among many other less-exposed people. "But they will be very significant for those who experience them."

Increased forest fires seem likely. The area is due to get drier, according to the Intergovernmental Panel on Climate Change. The team found that droughts are already worsening forest fires in both area and intensity, and those are predicted to worsen.

This may be down to a range of factors, including lack of management of the forests. Most forests are managed by removing dead trees, clearing roads or cutting fire breaks but this isn't being done here. Moreover, dead vegetation that fuels fires is accumulating at a rate that has doubled since 1986, the team says.

### Insect killer?

This is partly because the radiation itself seems to inhibit the decay of leaf litter, perhaps because it kills key insects or microorganisms. "We brought in litter from an uncontaminated zone and found it decayed only half as fast," says Evangeliou.

The models predict peaks of forest fires between 2023 and 2036. By 2060, fires might continue, but much of the radioactive fallout will have decayed away.

To cap it all, once a fire starts, local fire-fighters in Ukraine have seven times fewer crews and equipment per 1000 hectares than elsewhere in the country – a situation unlikely to improve given the ongoing conflict. The UN Environment Programme is installing video surveillance for fires, but much of the forest is inaccessible or slow to reach due to blocked roads. "It's like a jungle in there," says Evangeliou.

**"This is clearly an important problem and one that applies also to Fukushima, where a significant amount of forest land has been contaminated,"** says Keith Baverstock of the University of Eastern Finland in Kuopio, formerly head of radiation protection at the World Health Organization's European



office. "They have a very valid point. The lack of management of forests, the apparently slower decay of vegetation exposed to radiation, climate change leading to drought and the expansion of forested areas all contribute to increasing the risk of forest fire and therefore further dispersal of long-lived radioactive nuclides."

The actual amount of radioactivity redistributed by the recent fires is about a tenth of what was deposited on Europe in 1986, and its health effects are still a matter of debate among epidemiologists. But long-lived emitters of radioactivity persist and accumulate, so any dose is bad news, says Mousseau. "A growing body of information supports the idea that there is no threshold below which they have no effect."

Journal reference: *Ecological Monographs*, DOI: 10.1890/14-1227.1

February 12, 2015

## Plans to restart Takahama "riddled with flaws"

### Protesters demand more explanation

[http://www3.nhk.or.jp/nhkworld/english/news/20150212\\_24.html](http://www3.nhk.or.jp/nhkworld/english/news/20150212_24.html)

Protesters have called on Japan's nuclear regulator to further discuss safety measures before approving the restart of the Takahama plant's 2 reactors.

Over 30 people gathered on Thursday in front of a Tokyo building where the Nuclear Regulation Authority held its meeting.

They said regulators have not assessed evacuation plans for residents in the event of an accident and have not fully explained details of the restart to residents.

They stressed plans to restart the facility are riddled with flaws and that further debate is needed.

The leader of the citizens group said residents are being neglected in the process. He said Takahama nuclear plant is not fit to be restarted.

## Screening process: No major development

### Screenings of nuclear fuel facilities in Japan not moving forward

<http://mainichi.jp/english/english/newsselect/news/20150212p2a00m0na019000c.html>

December last year marked one year since the implementation of new safety standards applying to nuclear fuel facilities, which play a significant role in the nation's nuclear fuel cycle. The Nuclear



Regulation Authority (NRA) is performing safety checks of such facilities alongside inspections of nuclear power plants, but so far there have been no major developments.

NRA member Akira Ishiwatari visited a reprocessing facility for spent nuclear fuel in Aomori Prefecture in December last year. It was the first full-scale, on-site inspection to be conducted since the facility's operator, Japan Nuclear Fuel Ltd., applied for a safety check in January 2014 with an eye to start operations. The focus of the inspection was whether an active fault lay beneath the plant. If a fault existed, the main structures would need further reinforcement against earthquakes.

After examining 10 spots including geological formations in trenches that were dug, Ishiwatari told reporters that he wanted the data for drilling that was underway, indicating that it would take quite some time to reach a decision on the facility.

Applications for safety screening of 15 nuclear fuel facilities have been submitted to the NRA. Among them are four major Japan Nuclear Fuel facilities, including a reprocessing facility and a MOX fuel facility, together with a reactor for university research. The reprocessing and MOX fuel facilities form the core of Japan's nuclear fuel cycle.

The MOX fuel that is processed at the reprocessing facility in Aomori Prefecture is used at nuclear power plants in so-called "pluthermal" systems. The reactor at the Oma Nuclear Power Plant in the prefecture, to be operated by J-Power (Electric Power Development Co.), would be the first commercial reactor in the world to use 100 percent MOX fuel. A safety screening application for this plant has already been filed. The Monju fast-breeder reactor in Fukui Prefecture, which was designed to generate more nuclear fuel than it consumes, also plays a pivotal role in the nuclear fuel cycle. A total of 99.3 percent of the uranium used as fuel at nuclear power plants consists of Uranium-238, which is not fissile. Monju has been touted as a "dream reactor" as it can break this down into fissile plutonium, increasing the amount of nuclear fuel.

However, the outlook for each of these facilities is unknown. NRA Chairman Shunichi Tanaka has said the Oma reactor will be evaluated carefully, as there are no other cases of 100 percent MOX fuel operation. As for the Monju reactor, it was learned in November 2012 that a massive number of checks had not been performed properly, which effectively resulted in it being ordered to a halt. The operator, Japan Atomic Energy Agency, has sought to revise its administration system, but there are no immediate prospects of the order being lifted.

Similarly, in the screening of the reprocessing facility, the NRA and Japan Nuclear Fuel have not seen eye to eye. Five screening meetings were held in January, but one NRA official said all that happened was that people gathered for the meetings. Kazuhiro Matsumura, senior executive vice president of Japan Nuclear Fuel, stressed, "We are putting full effort into explaining the issues" However, a critical NRA official commented, "The grounds for their explanations in the screening process are lacking. **They're just trying to get it over and done with simply and take the easiest route.**"

In screenings for nuclear power plants, the No. 1 and 2 reactors at the Sendai Nuclear Power Plant operated by Kyushu Electric Power Co. have been granted safety clearance. Permission was similarly granted to the idled No. 3 and 4 reactors at Kansai Electric Power Co.'s Takahama Nuclear Power Plant on Feb. 12. **To date, when power companies have failed to respond clearly to NRA requests during nuclear power plant screening, the screening process has tended to remain at a standstill.** As such, the stance of Japan Nuclear Fuel is likely to be tested.

## China plans to resume construction of nuclear plants

## Despite safety concerns, China resuming construction of nuclear plants

<http://ajw.asahi.com/article/asia/china/AJ201502120074>

BEIJING--Facing growing energy demands and struggling against air pollution, China this year plans to resume full-scale construction of nuclear power plants for the first time since the Fukushima nuclear disaster in March 2011.

The country's target is to triple the electricity generation capacity of its nuclear power plants to 58 gigawatts by 2020. That figure would approach the level of France, whose current nuclear generation capacity is second only to that of the United States.

But the variety of reactors that China wants to fire up has raised concerns that workers and engineers will be ill-prepared if a disaster strikes.

One type is a high-temperature, gas-cooled "fourth-generation" reactor. Work is under way to assemble the world's first demonstration reactor of that kind at a nuclear power plant in a coastal area of Shidao Bay at the tip of the Shandong Peninsula.

Practical use of fourth-generation reactors, said to be highly efficient and safe, is expected in the 2030s at the earliest.

In January, many huge cranes were operating at the site of the plant about 600 kilometers southeast of Beijing.

"Construction work, which had been suspended due to the Fukushima accident, has finally begun," a guard said.

China also plans to build several "third-generation" reactors for practical use at the same plant. Third-generation reactors, which were developed in the latter half of the 1990s, are the most advanced reactors currently in operation.

In November 2014, China's National Development and Reform Commission applied to the Standing Committee of the State Council for permission to build six nuclear reactors in the coastal area of Shidao Bay and other regions. The six include China's first domestically produced third-generation reactors and new-type reactors with little actual operating experience.

Some government officials are cautious about approving the application.

However, a senior official of the Nuclear and Radiation Safety Center of the Environmental Protection Ministry said, "The application will be approved sooner or later."

Approval would fall in line with the policy of Chinese President Xi Jinping. His government needs to secure energy sources for the country's growing economy while tackling environmental problems caused mainly by coal-fired plants.

At a Chinese Communist Party meeting held in 2014, Xi declared, "We will promptly start construction of new nuclear power plants in coastal areas by adopting the world's highest safety standards."

After tripling its nuclear electricity generation capacity by 2020, China plans to construct more than 200 reactors, including those in the conception stage.

Some experts estimate that total capacity will increase to a range between 400 gigawatts and 500 gigawatts by 2050.

On March 16, 2011, five days after the Great East Japan Earthquake and tsunami caused the accident at the Fukushima No. 1 nuclear plant, the Chinese government froze work at nuclear power plants whose construction had not yet started and suspended screenings of applications to build new nuclear plants. Amid growing calls from Chinese officials to review nuclear safety standards, the government conducted stress tests at nuclear plants in various parts of the country. It also reviewed measures to deal with tsunami and secure electricity sources during emergencies.

In October 2012, Beijing worked out its “safety plan of the nuclear power generation,” and then began granting permission for the construction of nuclear power plants.

However, the reactors that were given the green light were mainly those where construction work had started before the Fukushima nuclear accident. Very few reactors where ground had not been broken obtained approval.

But the challenges of meeting energy demands while reducing environmental problems became increasingly serious for the Chinese government.

In autumn 2014 in Beijing, President Xi promised in his meeting with U.S. President Barack Obama that China would raise its ratio of non-fossil fuels to about 20 percent by around 2030. But keeping that promise would be difficult without nuclear power generation.

In China, three major state-run operators of nuclear power plants have adopted separate technologies from the United States, France and Russia. **The various types of reactors and technologies used in China have sparked concerns about safety at the nuclear plants.**

**In addition, workers at nuclear plants in China have had little experience in dealing with emergencies. Critics also say that the nurturing of nuclear engineers in the country is not keeping pace with the rapid increase in the number of nuclear reactors.**

(This article was written by Nozomu Hayashi and Tokuhiko Saito.)

February 17, 2015

## Workers first...

### TEPCO vows safety first in training program for workers at Fukushima

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201502170029>



Workers check safety conditions near storage tanks for radioactive water before starting the day's work at the Fukushima No. 1 nuclear power plant on Feb. 3. Provided by Tokyo Electric Power Co.)

Tokyo Electric Power Co. submitted its plan to provide wide-ranging training programs for workers engaged in decommissioning of its crippled nuclear power plant in Fukushima Prefecture following a string of accidents, some of them fatal.

"We will promote safety awareness among contractors through communication in the management of daily operations," said a report by the operator of the Fukushima No. 1 nuclear power plant.

"Our operational coordination meetings will also properly arrange work areas and times to ensure thorough safety control," the report went on.

The number of serious work-related accidents at the facility, which experienced a triple meltdown as a result of the 2011 earthquake and tsunami disaster, doubled in 2014 from the previous year.

Nine serious accidents occurred between March 2014 and January 2015, resulting in two deaths and eight serious injuries.

The labor ministry ordered TEPCO to develop measures to prevent similar incidents following the death of a 55-year-old worker in January after he fell from the roof of a rainwater storage tank.

The power utility submitted the plans on Feb. 16 to the labor ministry and the Fukushima Labor Bureau outlining countermeasures against occupational injuries and deaths. The report attributed the accidents to tight schedules and a lack of experience at the plant among recruited workers.

At a news conference the same day, a TEPCO official vowed that the utility would proceed with decommissioning the reactors with the highest priority on safety, saying, "We will ascertain (the pressure on the workers imposed by tight deadlines) by enhancing communication."

The installation of additional storage tanks for radioactive water, as well as other equipment, has added to the workload of TEPCO employees and contractors, raising the proportion of unskilled workers at the site. The power utility thus said in its report that it would set up a special facility to provide hands-on training to such workers.

"We have to prevent a situation in which workers feel it is no longer safe to work at the Fukushima plant," a TEPCO official said.

The plant operator also intends to accelerate decommissioning and improve efficiency of other operations so employees will be able to work longer at the plant site before reaching the annual radiation exposure limit of 50 millisieverts.

(This article was written by Yu Kotsubo and Akifumi Nagahashi.)

## Revised policy on final disposal of nuclear waste

### Basic policy on nuclear waste disposal approved

[http://www3.nhk.or.jp/nhkworld/english/news/20150217\\_25.html](http://www3.nhk.or.jp/nhkworld/english/news/20150217_25.html)



Experts with the industry ministry have approved a draft revision of Japan's basic policy on disposal of highly radioactive nuclear power plant waste.

The government plans to bury high-level radioactive waste from nuclear plants 300 meters or deeper underground in final disposal facilities. But officials have been unable to secure sites for the facilities from candidate municipalities, even though they have been trying for the past 13 years.

The ministry's panel of experts broadly approved the draft revision at a meeting on Tuesday.

It says **the government will stick to its underground disposal program, but can halt the process and recover the waste in case of a technical problem or a change in plans.**

It also says the government will choose potential host sites for disposal facilities, and negotiate with local residents to win their consent.

**Spent nuclear fuel is currently reprocessed and fused with glass before disposal. But this takes too much time, so the government is considering expanding the number of storage sites and studying ways to manage the used fuel without reprocessing.**

The government plans to have the Cabinet endorse the draft basic policy at the end of March, after receiving public comments.

But it will then have to draw up a more concrete policy and override public skepticism about the safety of the disposal methods.



## Final nuclear waste dump may be reversible

<http://www.japantimes.co.jp/news/2015/02/17/national/science-health/final-nuclear-waste-dump-may-be-reversible/#.VOMEai51Cos>

Kyodo

The government said Tuesday it will consider designing a final storage site for nuclear waste that can be opened in the event that policies change or better techniques become available to deal with it.

Officials aim to include the plan in a revised basic policy on the final disposal of highly radioactive waste.

The government is currently considering the vexed question of what to do with waste in the long-term, as some of it may need management for tens of thousands of years.

Prime Minister Shinzo Abe's administration wants to fire up nuclear reactors again following the hiatus caused by the 2011 Fukushima meltdowns, but public opinion remains opposed.

**Critics accuse the government of pushing a return to nuclear without answering the question of where the waste will go.**

"In principle, we grant reversibility regarding policies on final disposal . . . so future generations can choose the best way" given the likely emergence of new technology in times ahead, according to a draft document proposed by the Ministry of Economy, Trade and Industry (METI).

Finland is currently constructing the world's first disposal facility for high-level radioactive waste. It decided in 2000 that the repository, in Olkiluoto, should be designed in a way that grants future generations access, while ensuring long-term safety.

As for how Japan would store its waste, a policy adopted in 2008 envisions reprocessing the waste, then vitrifying it and placing it deep underground.

But the revised policy is expected to leave open the possibility of other methods, too, including the direct disposal that has been opted for by Finland, Sweden and the United States.

**This implies a possible review of Japan's long-standing but stalled policy of a nuclear fuel cycle that aims to reprocess all spent fuel and reuse the extracted plutonium and uranium as reactor fuel.**

**The revised policy will also declare that the "current generation" is not only responsible for generating the waste it will also take action on the storage question. However, it falls short of mentioning a time frame for deciding on the final storage.**

It would take a long time to build such a facility. Therefore the government is also seeking to expand storage capacity by **constructing new interim facilities as a temporary fix.**

The revised policy will be adopted by the Cabinet by the end of March.

METI has proposed introducing a system in which the Japan Atomic Energy Commission, a promoter of nuclear power, acts as a third party in the choice of a final disposal site. But some experts who attended the ministry's panel meeting Tuesday questioned that organization's independence.

The process of finding local governments willing to host a final repository started in 2002, but there was overwhelming opposition and little progress was made.

**The government now plans to choose candidate sites based on their scientific value, rather than waiting for municipalities to step forward.**

## Japan eyes allowing retrieval of radioactive waste after disposal

<http://mainichi.jp/english/english/newsselect/news/20150217p2g00m0dm047000c.html>

TOKYO (Kyodo) -- The Japanese government said Tuesday it will consider allowing future generations to retrieve high-level radioactive waste from a final disposal facility should there be possible nuclear policy changes or development of new technologies.

The government aims to include the plan in its revised basic policy on the final disposal of highly radioactive waste, as it is currently reviewing the nation's stalled process to find a final site for fuel waste -- which will require management for tens of thousands of years.

Prime Minister Shinzo Abe's administration is seeking to revive the country's idled nuclear plants following the 2011 Fukushima meltdowns although the majority of the public remains opposed to the use of atomic power. The government has been under criticism over its stance to promote nuclear power without resolving the issue of the final disposal of nuclear waste, especially after the 2011 Fukushima nuclear crisis.

"In principle, we grant reversibility regarding policies on final disposal...so future generations can choose the best way to dispose (of nuclear waste)" by taking in new technologies, a draft document proposed by the industry ministry said.

Finland, which is now constructing the world's first disposal facility of high-level radioactive waste in Olkiluoto, decided in 2000 that the repository should be designed to enable retrieval for future generations, while ensuring long-term safety of the facility.

Regarding a method of permanent nuclear waste disposal, the current policy adopted in 2008 says Japan envisions placing high-level radioactive waste deep underground in a vitrified form after reprocessing it. But the revised policy is expected to leave open the possibility of alternative ways, including direct disposal that has been opted for by Finland, Sweden and the United States -- implying a possible review of Japan's long-standing, stalled policy of nuclear fuel cycle that aims to reprocess all spent fuel and reuse the extracted plutonium and uranium as reactor fuel.

The government also plans to stipulate in the revised policy that the "current generation," which is responsible for generating fuel waste from nuclear plants, will address the issue and will not put the problem off, but fell short of mentioning a specific time frame for deciding on the final storage.

As it is expected to take a prolonged time to start building a final disposal facility, the government is also seeking to expand storage capacity of spent fuel by constructing new interim facilities as a fix for the time being.

The revised policy will be adopted by the Cabinet by the end of March.

The industry ministry also proposed introducing a system in which the Japan Atomic Energy Commission, which has promoted nuclear power, evaluates the process of choosing a final disposal site as a third party. But some experts who attended the ministry's panel meeting Tuesday questioned the independence of the organization.

A process to find local governments willing to host a final repository site started in 2002, but little progress was made due mainly to opposition from local people.

The government now plans to choose candidate sites that are suitable for building such a facility based on scientific grounds, rather than waiting for municipalities to offer to host it.

## Aftershock or not?

## Two quakes shake Tohoku; small tsunami hits coast

<http://www.japantimes.co.jp/news/2015/02/17/national/tsunami-advisory-issued-6-9-magnitude-quake-hits-iwate/#.VOOP7S51Cos>

JIIJ, Reuters, AFP-JIJI, Staff Report

An earthquake measuring upper-5 on the Japanese seismic intensity scale of 7 shook Aomori Prefecture and other parts of the north on Tuesday afternoon, hours after another temblor triggered a small tsunami.

The second instance did not result in a tsunami alert.

The quake struck at 1:46 p.m. The Japan Meteorological Agency described it as magnitude 5.7, with an epicenter around 50 km off the coast of Iwate Prefecture and 50 km deep.

One of the hardest-hit districts was the town of Hashikami, where upper-5 was recorded. It registered as 5-weak in the village of Fudai in Iwate Prefecture.

There were no reported problems at nuclear plants in the area, Kyodo reported.

Earlier in the day, a small tsunami struck the coast of Iwate Prefecture, with a maximum surge of 20 cm recorded at one location.

The tsunami was triggered by a subsea quake with an estimated magnitude of 6.9. It struck on Tuesday morning about 210 km east of the city of Miyako and 10 km deep, the agency said.

Sirens sounded as residents sought higher ground. The largest tsunami waves were measured between 8:35 a.m. and 9:07 a.m. at a port in the city of Kuji, and a 10-cm surge was recorded in Miyako. A smaller tsunami reached the city of Kamaishi, the agency said.

Evacuation orders were issued for residents in coastal districts of Kuji and the town of Otsuchi, and evacuation advisories for the cities of Ofunato and Rikuzentakata as well as Kamaishi.

The Iwate Prefectural Government reported no damage from the waves.

The quake hit at 8:06 a.m. It measured 4 on the Japanese seismic intensity scale of 7 in Iwate and three other prefectures in Tohoku — Aomori, Akita and Miyagi.

The quake was believed to be an aftershock of the 9.0-magnitude earthquake that hit the Tohoku region on March 11, 2011, the meteorological agency said.

Tohoku Electric Power Co., which operates the Onagawa and Higashidori nuclear plants in nearby Miyagi and Aomori prefectures, said it saw no irregularities at the facilities after the quake.

All 48 of Japan's workable nuclear reactors remain offline after the March 2011 earthquake and tsunami triggered the Fukushima No. 1 plant meltdown disaster.

A spokesman for Tokyo Electric Power Co., the operator of Fukushima No. 1 and Fukushima No. 2 nuclear plants, said there were no irregularities at the plants. The quake was felt only weakly in the area, he said. Unlisted Japan Nuclear Fuel Ltd. also said there were no irregularities recorded at its nuclear fuel reprocessing facility or other plants in Aomori.

East Japan Railway Co. briefly halted Tohoku Shinkansen bullet trains between Furukawa Station in Miyagi and Shin-Aomori Station in Aomori amid a power failure.

The evacuation instructions and advisories were lifted at 10:20 a.m.

Large areas of the coastline covered by Tuesday's warning were damaged by the 2011 quake and tsunami that killed more than 18,000 people and triggered a nuclear disaster.

Earthquakes are common in Japan, one of the world's most seismically active areas. The nation accounts for about 20 percent of the world's earthquakes of magnitude 6 or greater.



See also;

<http://enenews.com/quake-magnitude-7-hits-northeast-japan-strongest-hit-country-2013-felt-along-entire-pacific-coastline-1000-km-followed-multiple-aftershocks-one-centered-japan-trench-official-event-related>

## **Tsunami warning issued by Japan Meteorological Agency as residents of Iwate prefecture are cleared from homes, though no damage or injuries reported**

<http://www.theguardian.com/world/2015/feb/17/japanese-towns-evacuated-earthquake-tsunami-warning>



Evacuations were ordered for towns closest to the coast in Iwate prefecture in Japan early on Tuesday morning after a strong earthquake with a preliminary magnitude of 6.9 was recorded off the country's coast.

The Japan Meteorological Agency issued a tsunami warning and Japanese broadcaster NHK warned residents a one metre-high wave was expected to hit the coast of Iwate. The quake was measured at a depth of about six miles and shook much of north-east Japan even being felt in Tokyo, 430 miles away. There were no immediate reports of damage or injuries. The Pacific Tsunami Warning Center in Hawaii said there was no danger of a Pacific-wide tsunami.

NHK later said that small tsunamis of about 10 centimetres were recorded about 45 minutes after the quake hit and warned people to stay away from the shore.

Tohoku Electric Power Co and Tokyo Electric Power Co, both of which operate nearby nuclear plants, reported no irregularities at their facilities after the quake. Unlisted Japan Nuclear Fuel Ltd also said there were no irregularities recorded at its nuclear fuel reprocessing facility or other plants in Aomori.

All 48 of Japan's nuclear reactors remain offline after a March 2011 earthquake and tsunami, which triggered the Fukushima nuclear disaster in north-east Japan.

## **6.7 Earthquake Jolts Northern Japan, Triggers Tsunami Warning**

<http://www.nbcnews.com/news/world/6-7-earthquake-jolts-northern-japan-triggers-tsunami-warning-n307196>

TOKYO — A shallow 6.7-magnitude earthquake jolted northern Japan early Tuesday, triggering a tsunami warning and advisories cautioning people to stay away from the coast. The warning and advisories ended later Tuesday.

The quake on Tuesday struck off the coast of Iwate Prefecture, where authorities had issued a tsunami warning and expected 3-foot-high waves. The quake's epicenter was 50 miles north of Miyako and 330 miles north of Tokyo, at a depth of 14 miles, according to the U.S. Geological Survey.

No damages or injuries were reported.

Onagawa Nuclear Power Plant in Miyagi Prefecture said there haven't been any disruptions or damage from the quake and bullet trains were running on regular schedules, Japan's NHK television reported. Japan's Meteorological Agency cast the quake as an aftershock of the 9.0 temblor that rocked Japan on March 11, 2011, killing at least 15,800 people and caused the meltdown of three reactors at the Fukushima Daiichi Nuclear Power Plant.

"Because the 3/11 earthquake had such a strong impact, and because it's an area where it was affected by the 3/11 Earthquake, we are describing this as an 'aftershock,'" said agency seismologist, Yasuhiro Yoshida.

Japan regularly experiences moderate size earthquakes in the area of the 2011 temblor several times a month, and JMA attributes most of them to the 2011 quake.

USGS wasn't characterizing Tuesday's quake as an aftershock, considering it a separate event.

## **Major quakes hit northeastern Japan, minor tsunami observed**

<http://mainichi.jp/english/english/newsselect/news/20150217p2g00m0dm018000c.html>

TOKYO (Kyodo) -- Earthquakes with a preliminary magnitude of 6.9 and 5.7 struck the Pacific off northeastern Japan on Tuesday, with slight tidal waves observed in some coastal areas following the first temblor.

The first quake occurred at 8:06 a.m. in the Pacific Ocean about 210 kilometers east of Miyako, Iwate Prefecture, at a depth of around 10 km and registered 4 on the Japanese seismic intensity scale of 7 in parts of Aomori, Iwate, Miyagi and Akita prefectures.

Before a tsunami advisory was lifted later in the morning, a 20-centimeter wave was observed at Kuji port in Iwate roughly an hour later and a 10-cm wave in Miyako, according to the Japan Meteorological Agency. Evacuation orders were temporarily issued in parts of Iwate, including the city of Kuji, for people near the coast. No injuries or damage to buildings from the quake has been reported, according to the government. The second quake, which hit at 1:46 p.m., originated off the Iwate coast at a depth of around 50 km and registered upper 5 in some areas of Aomori and lower 5 in parts of Iwate, but no tsunami warning was issued this time.

The weather agency warned after the first quake that temblors registering 3 or higher on the Japanese intensity scale could occur over the next week or so.

No abnormalities have been observed at the Onagawa nuclear power plant in Miyagi Prefecture and the Higashidori power plant in Aomori Prefecture after the quakes, according to their operator, Tohoku Electric Power Co.

Japan Nuclear Fuel Ltd. said it has not experienced anything out of the ordinary at its nuclear fuel reprocessing plant in Rokkasho, Aomori.

A power outage following the first quake temporarily halted service on the Tohoku Shinkansen Line, according to its operator, East Japan Railway Co. The operation of Sanriku Railway Co.'s entire coastal line in Iwate was also suspended temporarily.

The coastal areas of Aomori, Iwate, Miyagi and Fukushima prefectures were devastated on March 11, 2011, when a magnitude-9.0 earthquake struck the Pacific off the northeastern Japan areas, and caused a massive deadly tsunami.

## Useful ocean

### IAEA: Consider releasing treated water into ocean

[http://www3.nhk.or.jp/nhkworld/english/news/20150217\\_36.html](http://www3.nhk.or.jp/nhkworld/english/news/20150217_36.html)



The International Atomic Energy Agency has advised Japan's government and the operator of the crippled Fukushima Daiichi nuclear plant to work out plans to treat radioactive wastewater from a long-term view.

The UN agency suggested the plans would include discharging treated wastewater into the sea.

An IAEA team of experts has ended 9 days of checking Japan's efforts to decommission the crippled plant. The team visited the site and interviewed officials of the government and the operator, TEPCO.

At a news conference on Tuesday, team leader Juan Carlos Lentijo cited as future challenges accumulating wastewater at the plant and radioactive waste to be generated during the decommissioning process.

Lentijo said the water contains radioactive tritium, which cannot be removed by filtering devices. He said more tanks will be needed to store such water but that there will be a shortage of space for them.

He noted that the government and the operator should have a long-term view to carry out decommissioning work safely and without delay. He advised them to **consider options including discharging filtered water into the sea.**

**He also urged the Japanese side to come up with a plan to control a large amount of radioactive waste to be generated in the decommissioning process.**

The IAEA team is to publish its final report by the end of March. The government plans to reflect the report in future decommissioning and revising of a timetable for the work.

February 23, 2015

## **TEPCO investigates cause of radiation spike**

### **TEPCO trying to identify cause of high radiation**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>



The operator of the Fukushima Daiichi nuclear plant says it has yet to identify the cause of a rise in radioactivity in a drainage channel.

Tokyo Electric Power Company detected high levels of beta-ray-emitting substances in the channel on Sunday morning.

Measurements showed that levels of the substances had risen as high as 7,230 becquerels per liter -- 10 times the usual level.

The utility suspects that contaminated water in the channel may have leaked into the port.

TEPCO officials say their investigations have so far found no leaks in the tubes and tanks storing radioactive water on the premises. They also say the levels of the radioactive substances went down to 20 becquerels per liter on Sunday night.

The drainage channel is designed to discharge rainwater, as well as water used in various operations, into the port.

TEPCO officials say workers removed accumulated mud from the channel on Saturday, the day before the event. But they say they do not know whether the removal is related to the rise in radiation levels.

The company says there has been no leakage of the substances outside the port and that radiation levels of the water in the port are within the normal range.

### **Toxic water at Fukushima plant leaked into nearby bay**

<http://mainichi.jp/english/english/newsselect/news/20150223p2g00m0dm041000c.html>

TOKYO (Kyodo) -- Highly radioactive water at the crippled Fukushima Daiichi nuclear plant has leaked into a nearby bay, but the cause and amount of the leakage have yet to be investigated, Tokyo Electric Power Co. said Monday.

A company official said the bay is surrounded by fences and the plant operator believes the water did not flow into the ocean outside the bay, but details remain unknown.

According to TEPCO, radiation levels more than 70 times greater than usual were detected in a gutter on the premises of the complex on Sunday. The levels of beta ray-emitting substances, such as strontium, measured up to 7,230 becquerels per liter as of Sunday morning, but fell to 20 becquerels by around 10 p.m. the same day.

TEPCO had shut the gutter, which drains rain water into the bay, but the firm opened the gate on Monday after confirming that radiation levels have lowered.

The problem of radioactive water building up at the Fukushima site remains a major challenge in the process of decommissioning nearly four years after the outbreak of the nuclear crisis. In December, TEPCO said around 6 tons of radioactive water leaked into the ground, in a series of recent mishaps at the plant.

February 24, 2015

## TEPCO's report on radiation "incident"

### Fukushima Daiichi NPS Prompt Report 2015

[http://www.tepco.co.jp/en/press/corp-com/release/2015/1248327\\_6844.html](http://www.tepco.co.jp/en/press/corp-com/release/2015/1248327_6844.html)

### Fukushima Daiichi NPS Prompt Report (Feb 24,2015) Recent Topics:TEPCO INVESTIGATING CAUSE OF BRIEF WATER INCIDENT AT FUKUSHIMA

#### *No workers believed exposed in brief rise in radioactivity in drain water*

FUKUSHIMA, February 24, 2015-The Tokyo Electric Power Company is investigating the cause of a brief rise in the radioactivity of drainage water on Sunday and will make its findings public.

No workers are believed to have been exposed when measurements of the "gross beta" nuclides (total amount of nuclides that emit beta rays such as Strontium90) rose from below 1,500 to between 5,050 and 7,230 becquerels per liter of water. Although some of the water is believed to have reached the sea, measurements of radioactivity in the port area adjacent to the plant did not show any significant increase. The company also patrolled each tank facility and confirmed no leakage. Recent water radioactivity measurements are posted at [http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts\\_150223\\_01-e.pdf](http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150223_01-e.pdf).

TEPCO will increase the frequency of some ocean water sampling from once a week to daily during the investigation period. Ordinarily, TEPCO requires that any water discharged into the sea have "gross beta" levels below 5 becquerels per liter.



Plant operators were automatically alerted to the increase in radioactivity by sensors designed for that purpose. The air radiation dose monitored in the vicinity of drainage route at the time of the alarm did not show any significant changes. After confirming that the measurement results of the water pumped up from the drainage has returned to normal, TEPCO resumed drainage operations.

The company is investigating the potential causes of the event and will report its findings promptly.

For the location of the drainage and related materials, please go to

[http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts\\_150222\\_01-e.pdf](http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150222_01-e.pdf) and  
[http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts\\_150222\\_03-e.pdf](http://www.tepco.co.jp/en/nu/fukushima-np/handouts/2015/images/handouts_150222_03-e.pdf)

February 25, 2015

## New "likely" leak into the ocean

### Highly toxic water leaks into ocean from Fukushima plant

<http://mainichi.jp/english/english/newsselect/news/20150225p2g00m0dm041000c.html>

TOKYO (Kyodo) -- Highly radioactive rainwater at the crippled Fukushima Daiichi nuclear plant has likely leaked into the Pacific Ocean, Tokyo Electric Power Co. said Tuesday, in the latest of a series of mishaps at the complex.

TEPCO said contaminated rainwater accumulating on the rooftop of the No. 2 reactor building is highly likely to have flowed into the ocean through a gutter. The company learned of the possibility last May but failed to take measures immediately.

The level of radioactive cesium in the rainwater measured 29,400 becquerels per liter, while that of beta ray-emitting substances, such as strontium, measured 52,000 becquerels, according to the plant operator. TEPCO said no major changes in radiation levels have been observed so far in the ocean outside a bay adjacent to the plant. It will take measures such as placing sandbags with materials that can absorb cesium to prevent further pollution.

In a separate incident, TEPCO said recently that highly contaminated water leaked into the nearby bay through a different gutter, but the company claimed the water did not flow into the ocean outside the bay. The cause and the amount of water leakage remain unknown.

## TEPCO knew

### No measures taken for radioactive water leak

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the Fukushima Daiichi nuclear plant **did not take any measures to prevent radioactive water that accumulated on the roof of one of the reactor buildings from flowing into the Pacific Ocean.**

Tokyo Electric Power Company said on Tuesday that **rainwater with relatively high levels of radioactive substances has collected on the roof of the No. 2 reactor building.**

It said the contaminated water may have flowed into a drainage channel whenever it rained and could have spilled into the Pacific Ocean beyond the plant's port.

**TEPCO was aware of these rises in the concentration of radioactive substances in the drainage channel as long ago as April last year.**

But it did not make the information public or take any measures to stop the water from spilling into the ocean.

TEPCO has not installed floodgates or equipment in the drainage channel that would warn of rising concentrations of radioactive substances. **The utility says there are no radioactive standards for the rainwater it is allowed to discharge into the ocean and it does not plan to install any devices in the channel.**

The operator says no major changes have been observed in the levels of radioactive substances in nearby seawater.

But local residents, including workers in the fishing industry, may react sharply to the news. The drainage channel flows into the sea beyond the port. **TEPCO had earlier explained that the contaminated water only affected the port area.**

### **Tepco admits it failed to disclose cesium-tainted water leaks since April**

<http://www.japantimes.co.jp/news/2015/02/25/national/tepco-admits-failed-disclose-cesium-tainted-water-leaks-since-april/#.VO17iS51Cos>

JIIJ

Tokyo Electric Power Co. said Tuesday it has failed to disclose leaks into the sea of rainwater containing radioactive substances from a drainage ditch linked to a building at its stricken Fukushima No. 1 nuclear power plant although it became aware of the leaks in April last year.

The building is highly contaminated with radioactive substances such as cesium that have been released from the plant since it was damaged in the March 2011 earthquake and tsunami.

As the drainage ditch in question is connected to the roof of the reactor 2 building, **29,400 becquerels of radioactive cesium per liter were detected from water accumulated on the rooftop,** Tepco said.

**The water also contained 52,000 becquerels of beta ray-emitting radioactive substances such as strontium-90.**

The drainage ditch is linked to the Pacific Ocean. Some 1,050 becquerels of radioactive cesium and 1,500 becquerels of beta ray-emitting radioactive materials per liter were detected near an outlet leading to the sea.

Tepco said that there have been no major changes in the amount of radioactive substances detected in seawater collected from an area about 1 km from the drainage outlet.



The company saw water contaminated with high levels of radiation flowing to the plant's port through another drainage ditch Sunday.

## NRA demands thorough investigation

### NRA demands TEPCO probe radioactive water leak

[http://www3.nhk.or.jp/nhkworld/english/news/20150225\\_26.html](http://www3.nhk.or.jp/nhkworld/english/news/20150225_26.html)

Japan's nuclear regulator has demanded that the operator of the Fukushima Daiichi nuclear plant thoroughly investigate a recent leak of radioactive drainage water that may have entered the sea.

The Nuclear Regulation Authority on Wednesday heard a report on the incident saying levels of beta ray-emitting substances rose sharply in a drainage channel at the plant on Sunday. It also said some of the contaminated water likely spilled into the plant's port facing the Pacific Ocean.

Tokyo Electric Power Company, or TEPCO, has been unable to determine why the radioactivity levels spiked.

Authority Chairman Shunichi Tanaka criticized TEPCO for leaving the channel's gate to the port open for as long as 90 minutes after an alarm went off.

Tanaka said TEPCO might not have had a plan to follow after detection of radiation spikes. He said the utility should have in place a system to automatically shut the water gate in case of irregularity.

On Tuesday, Tokyo Electric reported another radioactive water leak. The firm said contaminated rainwater that had accumulated on the roof of the plant's No. 2 reactor building leaked into the sea outside the port through another drainage channel.

February 26, 2015

## Fishermen are angry

### Fukushima fishermen slam TEPCO over latest toxic water leak

<http://mainichi.jp/english/english/newsselect/news/20150226p2g00m0dm043000c.html>

FUKUSHIMA, Japan (Kyodo) -- Fishermen in Fukushima Prefecture criticized Tokyo Electric Power Co. on Wednesday following the revelation of another leak of radioactive water into the ocean from the crippled

nuclear plant and the utility's failure to take immediate measures despite learning of the possibility of a leak last spring.

"I don't understand why you (TEPCO) kept silent (about the leakage) even though you knew about it. Fishery operators are absolutely shocked," Masakazu Yabuki, chief of the Iwaki fisheries cooperative, told a meeting with TEPCO officials.

To curb the amount of toxic water building up at the complex, TEPCO sought approval from local fishermen for its plan to pump up tainted groundwater from wells at the plant -- before it mixes with water in reactor buildings with even higher radiation levels -- and dump it into the ocean after processing it. But the latest mishap could further delay implementation of the plan.

TEPCO said Tuesday that contaminated rainwater accumulating on the rooftop of the No. 2 reactor building has flowed into the ocean through a gutter every time it has rained.

The level of radioactive cesium in rainwater samples collected last week stood at 29,400 becquerels per liter, while that of beta ray-emitting substances, such as strontium, measured 52,000 becquerels, according to the plant operator.

But Chief Cabinet Secretary Yoshihide Suga said the situation is "completely under control" and radiation levels in the ocean outside an enclosed port area adjacent to the plant are well below the legal limits. Any negative impact of radioactive water on the environment is "completely blocked," the government's top spokesman told a press conference.

Fukushima Gov. Masao Uchibori said during Wednesday's meeting with TEPCO officials that it is "regrettable that a problem which causes anxiety to people in Fukushima has occurred, and that information was not disclosed immediately," adding that local municipal officials and experts will conduct on-site inspections.

Hiroyuki Sato, the chief of the Soma Futaba fisheries cooperative, also slammed TEPCO, saying the incident "destroyed trust" between the operator and local fishermen.

TEPCO said it has been aware since April that radiation levels in water running in the gutter were high, but it failed to identify the source of contamination and did not take measures to prevent the water from leaking.

Shunichi Tanaka, chairman of Japan's Nuclear Regulation Authority, urged the plant operator to disclose such information promptly.

In a separate incident, TEPCO said recently that highly contaminated water leaked into the nearby bay through a different gutter, but the company claimed the water did not flow into the ocean outside the bay. The cause and the amount of water leakage remain unknown.

### **TEPCO reveals another leak (NHK video)**

<http://www3.nhk.or.jp/nhkworld/english/news/features/201502251616.html>

It has taken TEPCO almost a year to make this information public...

**Obviously not safe enough**

## **Accident Monitoring Systems Need To Be Re-evaluated, Says IAEA**

<http://www.nucnet.org/all-the-news/2015/02/26/accident-monitoring-systems-need-to-be-re-evaluated-says-iaea>

During the Fukushima-Daiichi accident in March 2011 the instrumentation provided for accident monitoring proved to be ineffective and existing strategies for accident monitoring, developed before the accident, need to be re-evaluated, the International Atomic Energy Agency says in a new publication. The publication, 'Accident Monitoring Systems for Nuclear Power Plants', says accident monitoring instrumentation at Fukushima-Daiichi was ineffective for a combination of reasons that "appeared to include" a loss of power, evaporation of liquid in sense lines, failure of sensors due to environmental conditions, instrument ranges that were not suitable for monitoring plant conditions, and a lack of alternative data for use in validating instrument readings.

Lessons learned from the accident highlight the importance of accident management systems, including the availability of instrumentation systems that can monitor relevant plant parameters in the reactor and inside containment during and after a severe accident.

These parameters are needed to support "the execution of severe accident management guidelines to mitigate the consequences of such accidents and to disseminate information to external technical support staff", the publication concludes.

Furthermore, parameters collected during severe accident conditions could allow experts to predict how an accident will evolve, and to implement and coordinate mitigation efforts and rescue actions.

Generally, existing accident monitoring systems were designed for design basis accidents, but not for "design extension conditions". When designing accident monitoring instrumentation at new nuclear power plants, or when carrying out improvements to existing nuclear power plants, recent lessons need to be taken into account.

The publication says accident management strategies should consider the importance of monitoring spent fuel pools in addition to the reactor.

The publication provides an overview of instrumentation for monitoring accident conditions in land-based, stationary nuclear power plants designed for electricity generation or for other heat production applications.

Critical issues discussed include lessons learned from Fukushima-Daiichi; accident management and monitoring strategies; the selection of plant parameters for monitoring plant status; the establishment of performance, design, qualification, display and quality assurance criteria for designated accident monitoring instrumentation; and design and implementation considerations.

'Accident Monitoring Systems for Nuclear Power Plants' is online: <http://bit.ly/1LGI2JE>

## Advice for people outside 30km radius

### **NRA deciding on measures outside 30km radius**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japanese nuclear regulators are working on advice for people living more than 30 kilometers from a power plant in the event of an accident.

They are likely to instruct people to stay inside buildings if there is any possibility of radioactive material reaching their area.

The government has been focusing on evacuation and other plans for locations within 30 kilometers of a nuclear plant. Local governments are being asked to draw up the plans.

During 2011's Fukushima Daiichi crisis, radioactive material was carried beyond that distance and contaminated land there.

A panel of the Nuclear Regulation Authority on Thursday agreed to a plan to have people more than 30 kilometers from a nuclear plant seek shelter inside buildings if sensors around the facility detect a sharp increase in radiation levels.

The sharp rise would be evidence of a massive discharge of nuclear substances.

The plan says the government will estimate each time the areas at risk and decide where it's necessary to take shelter.

The government will lift the advisory after the threat passes, but some analysts point out that detailed measurements are needed in making that determination.

The Nuclear Regulation Authority is planning to finalize the draft of the new guidelines in March.

February 27, 2015

### **Kyoto, nuclear plant operator sign agreement**

[http://www3.nhk.or.jp/nhkworld/english/news/20150227\\_49.html](http://www3.nhk.or.jp/nhkworld/english/news/20150227_49.html)

The operator of a nuclear power plant in Fukui Prefecture has signed a new safety agreement with neighboring Kyoto Prefecture.

Kyoto Prefecture required Kansai Electric Power Company to sign the agreement as a condition of restarting reactors at the Takahama nuclear plant.

All of Japan's nuclear reactors remain offline after the 2011 nuclear disaster in Fukushima.

On Friday, Kyoto Governor Keiji Yamada and the utility's president, Makoto Yagi, signed the 15-article document.

Under the agreement, the power company has to explain key changes to the prefecture.

The utility must do this when it makes adjustments to the reactors or facilities. It must also adhere to these rules before it restarts any reactor if it goes offline due to an accident.

The prefecture will be able to give its opinions to the utility. The power company will have to genuinely respond to the officials.

Prefectural officials say it's the first agreement with a local government which does not host the plant that stipulates the utility must answer a municipality's questions.

**The agreement does not include Kyoto's initial demand that the operator obtain the prefecture's consent before it puts idle reactors back online.**

The utility says it would seek such approval from Takahama Town and Fukui Prefecture, where the plant is located.

Some local officials demand the utility obtain a similar go-ahead from all municipalities within the plant's 30-kilometer zone. Those local governments are obliged to draw up disaster preparedness plans.

Shiga Prefecture, which is partially included in the 30-kilometer zone around the Takahama plant, is also seeking a similar safety agreement to Takahama Town and Fukui Prefecture.

February 28, 2015

## **Nuclear "safety" accord between Kyoto and Kansai Electric**

### **Kyoto Pref., Kansai Electric sign nuclear safety accord**

<http://mainichi.jp/english/english/newsselect/news/20150228p2g00m0dm017000c.html>

TOKYO (Kyodo) -- Kyoto Prefecture and Kansai Electric Power Co. signed a nuclear safety accord Friday, giving the western Japanese prefecture more say over the utility's operation of nuclear reactors in nearby Fukui and greater access to related information.

The signing came after Kansai Electric's two reactors at the Takahama plant, located on the Sea of Japan coast in Fukui Prefecture, were cleared for safety by regulators earlier in February in a major step toward resumption following the 2011 Fukushima nuclear crisis.

Neighboring prefectures such as Kyoto and Shiga have demanded they be involved more in the process of ensuring nuclear safety. Under the accord, Kyoto can state its opinion about a restart of the Takahama plant in the event its operation is halted due to an accident, and Kansai Electric is obliged to provide a response to it.

This is the first time a nuclear safety pact stipulating the local government's right to state an opinion and the utility's obligation to respond to it was signed with municipalities that do not host a nuclear plant, according to Kyoto Prefecture.

As seven towns and cities in Kyoto Prefecture are located within a 30-kilometer radius of the Takahama plant, safety concerns have increased among the some 128,000 residents. The city of Maizuru is within a 5-km radius of the facility.

However, as Kyoto is not a community hosting the facility, Kansai Electric is not required to obtain approval from it on a restart.

Kyoto and Kansai Electric also agreed that the utility will provide explanations in advance when it intends to build new nuclear reactors, and that the prefecture can conduct on-site investigations when necessary.

Currently, all of Japan's 48 commercial reactors remain offline amid safety concerns after they were gradually taken offline since the Fukushima Daiichi nuclear disaster. To bring them back online, operators need to pass the Nuclear Regulation Authority's safety screening and obtain approval from host communities.

## More anti-terror measures needed at nuclear facilities

### IAEA: Japan needs more anti-nuclear terror steps

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Experts from the International Atomic Energy Agency have acknowledged overall improvements in anti-terror measures at nuclear facilities in Japan. But they say more needs to be done to safeguard them.

The IAEA team, comprising 8 experts from the US and 5 other countries, stayed in Japan for 2 weeks through Friday.

Japan's Nuclear Regulation Authority says the experts heard about anti-terror legislation and resources from officials with the authority, the National Police Agency and related ministries and agencies.

The experts also visited the Hamaoka nuclear power plant in Shizuoka Prefecture and the Japan Atomic Energy Agency's research center in Ibaraki Prefecture to see what's being done to make them safe from terrorism.

In a draft report that has not been released to the public, the IAEA team reportedly says that Japan's

counterterror legislation and resources are robust as a whole and have greatly improved in recent years.

But the report also included recommendations and advice aimed at further improvement.

The nuclear authority says it believes the IAEA team appreciates the regulatory revisions made since the nuclear accident at the Fukushima Daiichi plant in March 2011.

The regulation authority will review the current anti-terror measures after it receives the final report.

March 4, 2015

## New guidelines for nuke accidents

### New nuclear accident evacuation guideline compiled

[http://www3.nhk.or.jp/nhkworld/english/news/20150304\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20150304_21.html)

Japan's nuclear regulator has decided new guidelines for nuclear accidents. It will call on residents outside of a 30-kilometer radius of a nuclear power plant to remain indoors if there could be massive fallout from an accident.

At issue now is how to decide the areas and the timing of lifting the warning.

The Nuclear Regulation Authority compiled on Wednesday revised guidelines for evacuating people in the event of a nuclear accident.

Massive fallout was found beyond a 30-kilometer radius of the Fukushima Daiichi plant in the March, 2011 accident. Earlier evacuation guidelines focused only on those who live within 30 kilometers of a plant.

The revised guidelines call on residents outside the 30-kilometer radius to stay inside if there is any possibility of massive amounts of radioactive material reaching their area.

The guidelines note areas at risk will be decided by analyzing radioactivity levels at the plant and local weather conditions to estimate the fallout spread.

It says the order will be lifted after the air mass containing radioactivity no longer covers the area. Authorities would use aerial measurements of radioactivity levels and other metrics.

The guidelines will be finalized after receiving public comments, which will be accepted for 30 days, starting on Thursday.

March 7, 2015

## World leaders dolls at UN conference in Sendai

### Leaders to be greeted by miniature doubles at U.N. conference in Sendai

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201503070025](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201503070025)



A worker arranges "kokeshi" dolls painted to resemble world leaders for a display to open March 9 at a commercial complex connected to JR Sendai Station. (Satoru Semba)

By AKIKO NAGASHIMA/ Staff Writer

SENDAI--Local craftsmen have created Japanese wooden dolls resembling world leaders who were invited to attend the U.N. World Conference on Disaster Risk Reduction here from March 14.

The dolls, a traditional craft item of the Tohoku region, are the work of Takenao Sato, a craftsman who operates out of the Akiu Craft Park in Sendai.

Sato created about 200 of the handmade figures, then had artists from Miyagi Prefecture paint them to resemble various leaders, including Prime Minister Shinzo Abe and U.N. Secretary-General Ban Ki-moon, both of whom will be attending the conference.

**Kokeshi dolls were also made of leaders who will not be visiting Sendai, including U.S. President Barack Obama.**

All U.N. members will be represented at a doll display to be open March 9-19 at the S-Pal Sendai commercial facility, an annex of JR Sendai Station.



March 8, 2015

## Disaster prevention: Can do better

### News Navigator: How have disaster prevention measures changed after 2011 triple disasters?

<http://mainichi.jp/english/english/perspectives/news/20150308p2a00m0na002000c.html>

The Mainichi Shimbun answers some common questions readers may have about the Basic Act on Disaster Control Measures, which went through revisions in 2012 and 2013 after the Great East Japan Earthquake.

Questions: What are some important points in the revisions to the disaster control law?

Answer: The March 2011 Great East Japan Earthquake and tsunami affected an extensive area, crippling administrative functions at the municipal level. As a result, municipal governments failed to provide sufficient support to local residents. **In the 2012 revisions, the national and prefectural governments were given authority to manage support and evacuation systems beyond the boundaries of municipalities.**

The 2013 revisions called on municipal governments to form lists of residents who would need special assistance in times of evacuation, such as the elderly and those with disabilities. In the 2011 disasters, information about such residents was not passed down to private support groups, which hindered the evacuation process in some places. **The law now allows local fire departments, social workers and private-sector organizations to acquire the lists of those who need special evacuation care without their consent.** However, municipal governments still need people's consent if they choose to provide the lists to relevant organizations before disasters actually take place.

Q: What about measures against possible nuclear plant disasters?

A: The government reviewed its guidelines for nuclear disaster measures in the wake of the Fukushima No. 1 nuclear plant meltdown. Municipalities close to nuclear power plants are now working on evacuation measures based on the assumption that nuclear disasters can happen.

One of the major revisions to the law required municipal governments within 30 kilometers of nuclear plants to **map out nuclear disaster evacuation plans.** The distance was extended from 8 to 10 kilometers in the pre-revised law. Because of this, nursing homes and hospitals that are located within 30 kilometers from nuclear plants are now required to draw up evacuation plans.

Q: It sounds like our disaster preparedness has improved, doesn't it?

A: Well, yes and no. According to the national government, as of 2013, around 25 percent of all municipal governments had yet to complete compiling lists of residents needing special evacuation assistance in case of a disaster. Some municipalities are still working on their lists. In addition, **the effectiveness of the nuclear disaster prevention measures are being questioned as nursing homes and hospitals are having difficulties mapping out evacuation plans.** (Answers by Tomoki Okuyama, City News Department)

March 10, 2015

## Much increased quake activity after 3/11

### Earthquakes in some areas of Japan around 100 times as frequent as before 3/11

<http://mainichi.jp/english/english/newsselect/news/20150310p2a00m0na015000c.html>

Earthquakes in some parts of the country are around 100 times as frequent as before the Great East Japan Earthquake, according to a researcher's analysis.

Professor of earthquakes and geology Shinji Toda at Tohoku University's International Research Institute of Disaster Science says, "Even four years after the Great East Japan Earthquake, there are areas where the effects are lingering. We need to be yet more vigilant against a major earthquake caused by the increase in activity."

Toda looked at the rates of earthquakes of magnitude 1 or over occurring within 20 kilometers of the surface between March 11, 2011 and Feb. 18 this year, and compared them to the rates during the 10 years before the Great East Japan Earthquake. He left the two years after the Great East Japan Earthquake, when there were many aftershocks, out of the analysis.

The areas found to have earthquake rates some 100 times what they were before the disaster fall largely along a region including the Hamadori area of Fukushima Prefecture, Iwate Prefecture, and Choshi, Chiba Prefecture. Each of these areas had comparatively few quakes before the disaster, but the effects of crust changes from the Great East Japan Earthquake appear to have left lasting effects in them. The results showed that there are areas of high activity further inland than the aftershock region for the Great East Japan Earthquake, which extends from off the coast of Aomori Prefecture to off the coast of Chiba Prefecture.

For the Tokyo metropolitan area, where there are fears of a massive earthquake striking, Toda expanded the scope of his analysis to quakes within 100 kilometers of the surface. He found that the rate of quakes over magnitude 3 for the past two years was around twice what it was for the 10 years before the 2011 disaster.

Areas including the Chuetsu region of Niigata Prefecture had a lower incidence of quakes than before the Great East Japan Earthquake, but this is believed to be because of a decrease in aftershocks from an inland earthquake that occurred there before the 2011 disaster.

Meanwhile, on March 9, the Japan Meteorological Agency announced its recent records for aftershocks from the Great East Japan Earthquake. Over the one-year period from March 11 last year to March 7 this year, there were 737 earthquakes registering 1 on the Japanese seismic scale of 7 or higher and detectable by humans in the aftershock region. The number was well above the average yearly number of 306 for that region in the 10 years before the Great East Japan Earthquake.

"The area remains active," the agency said.

March 14, 2015

## UN Conference in Sendai (2)

## **U.N. forum brainstorms new framework for disaster risk reduction**

<http://www.japantimes.co.jp/news/2015/03/14/national/u-n-forum-brainstorms-new-framework-for-disaster-risk-reduction/#.VQRS0eF1Cos>

Kyodo

SENDAI – Amid growing concern that climate change may bring more natural calamities, the international community highlighted the need to boost measures and investment on disaster risk reduction at a U.N. conference that began Saturday in Sendai.

More than 5,000 participants, including government leaders and high-level officials from around the world, were expected to attend the five-day meeting in Tohoku, which was severely damaged by the March 11, 2011, earthquake and tsunami, and ensuing nuclear crisis, three days after Japan marked the fourth anniversary of the unprecedented calamity.

During the once-in-a-decade U.N. World Conference on Disaster Risk Reduction, delegations from over 160 countries are slated to adopt a new action plan aimed at mitigating the impact of disasters to replace the Hyogo Framework for Action that covered the past 10 years.

“Climate change is intensifying the risks for hundreds of millions of people, particularly in small island developing states and coastal areas. ... Disaster risk reduction is a front-line defense against the impacts of climate change. It is a smart investment for business and a wise investment in saving lives,” U.N.

Secretary-General Ban Ki-moon told the opening session.

According to a report by the U.N. Office for Disaster Risk Reduction, global economic losses caused by disasters including quakes, tsunami, cyclones and flooding are estimated at between \$250 billion and \$300 billion on average each year.

This figure is projected to increase to as much as \$314 billion in the future, highlighting the need for more disaster-related measures and investment.

“We can watch that number grow as more people suffer. Or we can dramatically lower that figure and use the savings to invest in development,” Ban said.

Prime Minister Shinzo Abe announced that Japan will offer \$4 billion in aid for global efforts to enhance disaster management over four years through 2018, including support for building infrastructure in developing countries.

“Our nation, which has accumulated knowledge and technologies of disaster prevention as we experienced many natural hazards, has promoted cooperation with international society to reduce the number of disaster victims,” Abe said in a speech delivered at a plenary session of the conference.

“It is important that we place disaster prevention as our highest priority in the post-2015 Millennium Development Goals agenda as well as the new framework on climate change,” Abe said.

The U.N. conference is also seen as an important opportunity to highlight the mainstreaming of disaster risk reduction and to prod many countries to prioritize addressing such risk to ensure sustainable economic growth, especially in developing economies, given that about 90 percent of victims around the world are from such countries.

Around 1.2 million people were killed and 2.9 billion affected by disasters between 2000 and 2012, with the economic damage totaling an estimated \$1.7 trillion during the period, according to the United Nations.

The new action plan to be adopted in Sendai is expected to set numerical targets for the first time to reduce the number of victims and economic losses so progress in international efforts against natural hazards can be assessed, conference officials said.

A total of seven targets will likely be laid out, including for reducing disaster damage to infrastructure, raising the number of countries with anti-disaster strategies and enhancing financial aid for developing economies.

On the sidelines of the plenary meetings, ministerial round tables will be held comprising more than 30 working sessions as well as high-level dialogue sessions covering a wide range of disaster issues.

Approximately 350 symposiums and seminars organized by international nongovernmental bodies and other entities will also take place during the conference.

## **U.N. forum calls for more investment to reduce disaster risks**

<http://mainichi.jp/english/english/newsselect/news/20150314p2g00m0dm036000c.html>

SENDAI (Kyodo) -- Amid growing concern that climate change may bring more natural calamities, the international community highlighted the need to boost measures and investment on disaster risk reduction at a U.N. conference that began Saturday in the northeastern Japan city of Sendai.

More than 5,000 participants, including government leaders and high-level officials from around the world, are expected to attend the five-day meeting in Japan's Tohoku region hit hard by the March 11, 2011, earthquake, tsunami and nuclear disasters, three days after the country marked their fourth anniversary.

During the once-in-a-decade U.N. World Conference on Disaster Risk Reduction, delegations from over 160 countries are slated to adopt a new action plan aimed at mitigating the impact of disasters to replace the Hyogo Framework for Action that covered the past 10 years.

"Climate change is intensifying the risks for hundreds of millions of people particularly in small island developing states and coastal areas...Disaster risk reduction is a frontline defense against the impacts of climate change. It is a smart investment for business and a wise investment in saving lives," U.N. Secretary General Ban Ki Moon told the opening session.

According to a report by the U.N. Office for Disaster Risk Reduction, global economic losses from disasters such as earthquakes, tsunami, cyclones and flooding are estimated at \$250 billion to \$300 billion on average each year and will increase to as much as \$314 billion in the future, highlighting the need for more disaster-related measures and investment.

"We can watch that number grow as more people suffer. Or we can dramatically lower that figure and use the savings to invest in development," Ban added.

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"Our nation, which has accumulated knowledge and technologies of disaster prevention as we experienced many natural hazards, has promoted cooperation with international society to reduce the number of victims of disasters," Abe said in his speech delivered at a plenary session of the conference.

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## Regulatory limits (food) need to be adapted

Conclusion of an article recently published in  
*Environmental Science & technology*, 2015, 49, 2875-2885

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### **Analysis of Japanese Radionuclide Monitoring Data of Food Before and After the Fukushima Nuclear Accident**

<http://pubs.acs.org/doi/pdf/10.1021/es5057648>

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[...]

Lessons Learned.

An ample set of food monitoring data allows for the observation of general radioecological trends, such as the mobility and bioavailability of radionuclides. In this particular case, the long series of pre-Fukushima monitoring data teach us that the  $^{90}\text{Sr}/^{137}\text{Cs}$  activity ratio is not constant in foodstuffs but constantly increases with time, thus causing an underestimation of the internal exposure as long as a constant (and low) ratio is assumed by the regulatory bodies. Data from pre-Fukushima monitoring campaigns revealed that animal products tend to be higher contaminated with radiocesium, whereas vegetarian produce exhibited higher activity concentrations in radiostrontium. The stunning amount of post-Fukushima food monitoring data clearly allows the identification of radioecologically “sensitive” foodstuffs. For the vegetarian food sector, these sentinels are primarily mushrooms and to a lower extent yuzu (citrus fruits),

berries and Japanese radish. Due to its special diet, the boar is a suitable sentinel in the animal product sector as it feeds on mushrooms and other hyperaccumulators.

In summary, the Fukushima nuclear accident triggered an unprecedented monitoring campaign for radionuclides in food. Vegetables from Fukushima prefecture exhibited high radio-cesium activity concentrations soon after the accident.

However, by late summer of 2011, it was mostly mushrooms or dried vegetarian foodstuffs that exceeded the provisional regulatory limit. A similar picture was observed in other affected prefectures: after an initial high, activity concentrations in vegetable dropped quickly, but peaked again due to mushrooms and dried vegetables. This confirms the necessity to monitor mushrooms as sentinel species for radiocesium [30].

Monitoring of meat/eggs started with significant delay after the accident, especially in prefectures other than Fukushima. Due to the constant intake of contaminated pasture, radiocesium concentrations in animal products from Fukushima built up relatively slowly and peaked for the first time in early July 2011. In this initial period, it was mainly beef responsible for exceedances of the provisional regulatory limits. After the peak, activity concentrations dropped again to rise back from September 2011. This time, it was mainly boar meat that was highly contaminated. Iodine-131 in tap water exhibited high levels shortly after the accident in several affected prefectures, but no exceedances of the limit were observed after March 2011.

Radiocesium levels in tap water were rather low. Given the high monitoring density, the mostly rapid response of Japanese authorities and the rapid decrease of very high initial contamination levels of the most common foods, it seems very unlikely that more than very few members of the public in Japan exceeded the maximum permissible internal exposure of 1 mSv/year. This observation is in agreement with the results of previous studies. [9–11, 21, 49–51]

A key finding of this study is that the correlation between  $^{90}\text{Sr}$  and  $^{137}\text{Cs}$  may soon no longer follow the assumption of a maximum  $^{90}\text{Sr}/^{137}\text{Cs}$  activity ratio of 0.1 or even 0.003 in food. Background data from Japan suggested that **after several years following the release into the environment, the  $^{90}\text{Sr}/^{137}\text{Cs}$  activity ratio observed in food rises significantly (most of the samples showing a ratio  $> 2$ ). This calls for an adaption of the current policy and also increased monitoring efforts with respect to  $^{90}\text{Sr}$ . The diminution of the regulatory limit ( $^{90}\text{Sr}/^{137}\text{Cs} = 0.003$ ) as of April 2012 was an adaption into the wrong direction. The Japanese authorities are urged to reimplement the “old” limit ( $^{90}\text{Sr}/^{137}\text{Cs} = 0.1$ ), which probably will have to be raised further in the future. This observation fosters the need for continuous monitoring of both  $^{137}\text{Cs}$  and  $^{90}\text{Sr}$ ; otherwise the  $^{90}\text{Sr}$  content of food will soon be underestimated.**

March 17, 2015

## What about nursing homes in case of emergency?

### Head of Fukushima nursing home suggests waiting before evacuation

<http://mainichi.jp/english/english/newsselect/news/20150317p2a00m0na010000c.html>

SENDAI -- **Nursing home users shouldn't necessarily be evacuated right after a nuclear disaster**, the head of facility near the Fukushima No. 1 Nuclear Power Plant told participants at a U.N. conference here on March 17.

"There is an option to not evacuate, but to hunker down instead," Ken Takagi, 49, the head of a nursing home in the Fukushima Prefecture town of Naraha told participants in a discussion forum at the U.N. World Conference on Disaster Risk Reduction.

Operations of Takagi's nursing home were suspended as a result of the nuclear disaster. He says that some of the residents he accompanied as they evacuated from location to location fell ill.

Early on the morning of March 12, 2011, a day after the Great East Japan Earthquake that triggered the Fukushima nuclear crisis, Takagi's nursing home was notified by the town government that the town was being evacuated. Together with eight employees and 11 facility users who hadn't been able to return to their homes the previous night, Takagi evacuated. The group piled into four vehicles and left the facility. Their first destination was an elementary school gymnasium in Iwaki, Fukushima Prefecture. The inside was cold because the doors had been left open. Some of the nursing home users suffered from delusion, acting as if they were back in their own homes.

Thinking the situation was untenable, Takagi had the group leave on March 13 and enter a nursing home in the city, but due to food shortages, the group had to leave again on the morning of March 15. In the early morning hours of March 16, the group arrived at a facility in Chiba Prefecture that a friend of Takagi had managed to arrange for them. When Takagi weighed himself then, he found he had lost six kilograms. Since then, Takagi has fretted over whether he made the right decisions. **The mere act of putting bedridden and ailing elderly people into a vehicle can be dangerous.**

Another nursing home, "Iitate Home," in Iitate, Fukushima Prefecture, did not evacuate. According to Takagi, nursing homes that moved their users from location to location tended to see higher death rates among users the year after the disaster. Iitate Home's death rate, however, was almost the same as it had been before the disaster. **Takagi recommends that nursing homes store enough food, water and fuel to last around a week in an emergency.**

Almost all of the town of Naraha lies within a 20-kilometer radius of the Fukushima plant, an area preparing for the lifting of evacuation orders. Residents are allowed to enter the area and stay during the daytime, but staying overnight is forbidden in principle.

"The radiation at Iitate Home was 0.2 to 0.3 microsieverts per hour at around the time of the disaster," Takagi says. "For a disaster of the scale (of the Fukushima disaster), I think the best way to protect (facility users') lives is to block off exposure from radiation outside the facility and keep the users there until a safe evacuation route is secured, then move them quickly."

Takagi encouraged participants to come and see people's positive outlook in Fukushima Prefecture. He feels that his acquaintances have drifted away from the prefecture.

"Please come to Fukushima to learn our lessons," he said to the forum discussion audience.

March 21, 2015

## **New committees to enhance preparedness**

## Japan's Cabinet Office to review evacuation plans

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The Japanese government plans to launch new committees in municipalities near nuclear plants to enhance preparedness for a nuclear accident.

The committees will be made up of officials from local governments and relevant central government offices.

Until now, the Cabinet Office, which is in charge of nuclear emergency preparations, has assigned a working group of local and central government officials to each of 13 areas across the country that has at least one nuclear power plant.

The groups have helped local governments within a 30-kilometer radius of the plants draw evacuation plans in the event of an accident.

But there are **concerns about whether the plans would be effective in the event of multiple disasters involving an earthquake and tsunami.**

To improve the effectiveness of the plans, the Cabinet Office decided to **replace the working groups with new committees that consist of deputy prefectural governors and senior officials of central government offices.**

The committee members will be tasked with improving local evacuation plans by reviewing evacuation drills carried out by the relevant prefectures.

They will evaluate the drills based on guidelines issued by the International Atomic Energy Agency.

March 25, 2015

## Fault under Tsuruga 2 active

### Regulator concludes fault under Tsuruga reactor is active

<http://mainichi.jp/english/english/newsselect/news/20150325p2g00m0dm055000c.html>

TOKYO (Kyodo) -- The nation's nuclear regulator determined Wednesday that a reactor at Japan Atomic Power Co.'s Tsuruga nuclear plant on the Sea of Japan coast sits right above an active geological fault, a conclusion that may force the operator to permanently shut down the unit.

The Nuclear Regulation Authority's decision-making panel approved a report compiled by experts that says at least one of the faults running under the No. 2 reactor, including one called "D-1," could move in the future.

**Despite the move, Japan Atomic Power is expected to apply for the regulator's safety screening to resume operation of the unit in Fukui Prefecture.**



But the regulator's decision is unlikely to be overturned unless the operator can submit enough new data. In quake-prone Japan, building reactors or other important safety-requiring facilities directly above active faults is prohibited.

The regulator acknowledged in 2013 that "D-1" is an active fault. But it conducted an additional probe after Japan Atomic Power submitted more data in trying to have that evaluation overturned.

Also Wednesday, the Nuclear Regulation Authority concluded that **at least two key geological faults running under the premises of Tohoku Electric Power Co.'s Higashidori plant in northeastern Japan could move in the future.**

Unlike with the Tsuruga reactor, the decision would not immediately force Tohoku Electric to scrap the sole reactor at the Pacific coast plant in Aomori Prefecture, as the faults do not run directly beneath the reactor.

But the facility could remain offline for quite a while, as Tohoku Electric will likely be required to take further measures to enhance the plant's safety before restarting it.

The assessment report also said the experts were not able to obtain enough data to judge whether another fault, which runs directly beneath an important facility at the plant, is active or not.

Tohoku Electric has already applied for the Higashidori plant's safety screening, a process necessary for any reactor to be allowed to go back online. The regulator is expected to resume a full-fledged review of the plant taking the report into account.

Currently, all of Japan's 48 commercial reactors remain offline amid heightened safety concerns following the Fukushima nuclear crisis triggered by a massive earthquake and tsunami in 2011.

The government of Prime Minister Shinzo Abe is seeking to restart reactors that have cleared the Nuclear Regulation Authority's safety review, which is based on new regulations introduced after the crisis.

## **Report: Fault under Tsuruga reactor may be active**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

An expert panel of Japan's nuclear regulator has maintained its assessment that a fault just below a nuclear reactor in central Japan could move.

The panel submitted a report to the Nuclear Regulation Authority on Wednesday, concluding its 3-year study of the fault under the No. 2 reactor at the Tsuruga plant in Fukui Prefecture. The report follows 2 others that said the fault may move.

After the 2011 Fukushima Daiichi nuclear disaster, Japan adopted tougher regulations that ban construction of reactor buildings and other key structures above such faults.

NHK reporters say the idled reactor may be scrapped. But the plant's operator, Japan Atomic Power Company, is disputing the experts' assessment and plans to apply for a restart.

Nuclear Regulation Authority Chairman Shunichi Tanaka suggested that the regulators will fully respect the assessment when they discuss the possible application.

The company recently decided to decommission the plant's aging No.1 reactor.

## More problems with Monju fast-breeder reactor

### More flaws found with Monju plant inspections

[http://www3.nhk.or.jp/nhkworld/english/news/20150325\\_35.html](http://www3.nhk.or.jp/nhkworld/english/news/20150325_35.html)

Nuclear regulators have found further problems with the inspection methods of the operator of the Monju fast-breeder reactor in Fukui Prefecture, on the Sea of Japan coast.

The Monju plant was shut down after a sodium leak was discovered in 1995. The plant was restarted on a test basis in 2010, but was soon shut down again due to a series of problems. Further test runs were banned in May 2013 over safety inspection oversights involving key equipment.

The reactor's operator, Japan Atomic Energy Agency, submitted a report on the problems to the Nuclear Regulation Authority last December.

Nuclear regulators met on Wednesday to discuss the operator's progress.

But the regulators heard that the operator had failed to carry out ultrasonic tests every 16 months as mandated to check the condition of pipes carrying coolant water.

The operator also failed to properly inspect the pipes where they intersect the walls of the reactor building. These spots require special checks because they cannot be visually inspected.

Authority Chairman Shunichi Tanaka censured Japan Atomic Energy Agency for its failure to properly inspect the pipes.

He said the company is not qualified to be in the atomic power business if it cannot be relied upon to manage the plant properly and conduct thorough inspections.

## Faults at Higashidori too

### Panel: Faults under Higashidori plant may move

[http://www3.nhk.or.jp/nhkworld/english/news/20150325\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20150325_31.html)

An expert panel has told Japan's Nuclear Regulation Authority that 2 faults under the Higashidori nuclear power plant site in northern Japan may move.

The plant's operator, Tohoku Electric, is applying to have the regulator assess the plant's planned safety

measures, a precondition for restarting the facility. But the panel's finding could affect the regulator's discussions on the measures.

The panel submitted its report on the plant in Aomori Prefecture on Wednesday. It says **the 2 faults that may shift are west of a reactor building.**

Tohoku Electric had claimed that deformation of land above the faults was attributed to swelling of rocks rather than movement of the faults.

But the report says the operator's claim lacks sufficient data and doesn't properly explain the area's topography.

Observers say the authority's commissioners may urge the operator to take more quake-resistance measures during the screening process, leading to longer discussions.

**The report also refers to another fault under key nuclear facilities including a cooling water intake.**

But it stops short of assessing the fault, leaving it a likely focus of debate among the commissioners. The experts say they could not agree on a conclusion regarding the fault.

March 26, 2015

## **Monju: New maintenance errors**

### **More errors with Monju nuclear reactor maintenance found**

<http://mainichi.jp/english/english/newsselect/news/20150326p2a00m0na007000c.html>

Several more maintenance problems have been discovered at the Monju fast-breeder reactor facility in Tsuruga, Fukui Prefecture, which has been banned from operation following the discovery of over 10,000 cases of maintenance errors in 2013, it has been learned.

The Nuclear Regulation Authority (NRA) secretariat revealed on March 25 that the newly discovered maintenance errors -- which involve the facility's piping system -- mean that Monju operator Japan Atomic Energy Agency (JAEA) may have violated safety regulations.

The NRA secretariat conducted safety inspections on pipes and other components at the troubled Monju facility between March 2 and 20. JAEA is responsible for checking the thickness and corrosion of the cooling pipes and the pipes for liquid sodium circulation, but the agency has failed to conduct the checks properly, only conducting visual inspections of the pipes, it is reported.

The NRA secretariat plans to report the matter to the NRA as early as May this year after examining details of the inspection and confirming the number of maintenance errors.

While an NRA secretariat representative said it has been confirmed at the inspection that the errors are not imminent threats to the safety of the facility, JAEA's latest failure may further delay the restart of the Monju reactor.

March 29, 2015

## Safety of Japanese food

### Japan to play up safety of food products at expo in Milan

<http://www.japantimes.co.jp/news/2015/03/29/national/japan-play-safety-food-products-expo-milan/#.VRg7feHwmos>

JJI

The government will use Expo Milano 2015 in Italy to highlight the safety of Japanese food products, including those from Fukushima Prefecture, according to its official representative Tatsuya Kato.

“I want to **use the expo as an opportunity to correct any wrong perceptions or information**,” Kato said in a recent interview, referring to the import bans imposed on Japanese food after the Fukushima nuclear crisis unfolded in March 2011.

Kato said some countries still require Japanese exporters to submit reports on the radiation checks or certificates of origin before accepting food products.

“The government should assist efforts for the lifting of such restrictions,” he said. “We can brief key figures visiting the Japanese pavilion on how disaster areas have recovered and what measures have been implemented to ensure food safety.”

Expo Milano 2015 will be held in Milan, Italy, from May 1 to Oct. 31. The theme of the event is “Feeding the Planet, Energy for Life.”

Noting that the Japan Day reception in July, which will attract several hundred guests, will be an important opportunity to underscore the safety of Japan’s food, Kato said Japan plans to hold a briefing and distribute leaflets at the reception.

March 31, 2015

## If you say so...

### Ex-U.S. nuclear chief says tritium water at Fukushima No. 1 can be dumped safely

<http://www.japantimes.co.jp/news/2015/03/31/national/former-u-s-nuclear-chief-says-tritium-water-at-fukushima-no-1-can-safely-be-dumped-in-sea/#.VRuWUOHwmos>

by Kazuaki Nagata  
Staff Writer

A former chief U.S. nuclear regulator asserted Tuesday that the massive volumes of tritium-tainted water stored at the Fukushima No. 1 nuclear plant can be “safely” dumped into the sea after it is diluted to reduce the levels of radioactive tritium below the legal limit.

"Most people don't know what tritium is, so what they will think about is that it's bad, something that's really dangerous. But tritium is an element that we know a lot about," Dale Klein, chairman of Tokyo Electric Power Co.'s Nuclear Reform Monitoring Committee, told a news conference in Tokyo.

"It can be released safely into the ocean. We know worldwide what the safe limit for tritium release is," said Klein, who once headed the U.S. Nuclear Regulatory Commission.

Tepco has been treating water stored at the plant with a system known as ALPS (Advanced Liquid Processing System), which removes all radioactive materials except for tritium.

The processing has left the utility with vast amounts of water contaminated with heavy doses of tritium. About 350,000 tons of the water is currently stored in hundreds of large tanks, each of which poses a potential leak risk.

**Tepco has said the level of tritium in the water is between 1 million and 5 million becquerels per liter. The legal limit for release to the sea is 60,000 becquerels.**

**Tritium has a half life of 12.3 years, so it would take decades to die down to permitted levels if left undiluted.** The element is about one-thousandth as radioactive as the isotopes cesium-134 and cesium-137, according to Tepco.

Tepco said it has not decided yet what to do with the tritium-tainted water, as a government panel is currently trying to figure out what options are available.

Klein said he understands the option to release the water into the Pacific "is intensely emotional" among local fishermen, but he is confident that they will eventually agree with his view.

He noted that fishermen in the past agreed to an equally controversial decision to discharge clean groundwater pumped up at the site before it seeps into the reactor buildings and becomes contaminated. Meanwhile, Tokyo Electric Power Co. said Monday it will release all available radiation data associated with the Fukushima No. 1 plant after facing criticism for failing to promptly announce leaks of radioactive rainwater into the sea.

**Tepco said it had a policy of disclosing radiation information for contaminated water stored at the plant facilities if there is a risk of that water reaching the sea. This policy did not cover rainwater in drainage ditches, however radioactive it might be.**

The utility has been criticized for not promptly releasing information about radioactive rainwater when it had data confirming leaks had taken place.

Information from Jiji added

April 5, 2015

## Fukushima rice popular online

### Fukushima rice kit enjoys online popularity

<http://mainichi.jp/english/english/newsselect/news/20150405p2a00m0na005000c.html>

A Fukushima rice kit developed by veteran copywriter Shigesato Itoi and a group of farmers in Fukushima Prefecture is becoming the talk of the town online.

Itoi, editor-in-chief of the website "Hobo Nikkan Itoi Shimbun" (Almost daily Itoi newspaper;

<http://www.1101.com/home.html>), has joined forces with the "Aomushi Club" (green caterpillar club)

led by rice farmer Hiroshi Fujita, 36, of Koriyama, Fukushima Prefecture, to develop a kit called "Chiisa na

Tanbo Kit" (small rice paddy kit) to grow the popular Koshihikari brand of rice from Fukushima rice seeds.

The kit went on sale on March 25 and is catching the fancy of a growing number of people, attracting comments on Twitter and other social networking services.

The kit comes with Koshihikari rice seeds that have cleared regulations for radioactive substances, along with fertilized sand, a planter and a manual. The purchasers of the kit will receive additional 3 kilograms of Fukushima rice at the time of harvest.

Itoi and his staff tried their hand at growing rice on the roof of a Tokyo building last year and posted the results online. "Sunshine and water will do the job," they say.

Fujita says it is natural to prioritize safety, and he and other developers want to convey the pleasure of growing rice. They have ensured the safety of their Fukushima rice. The Fukushima Prefectural Government checked about 10.75 million bags of rice harvested in 2014 and all of them showed readings below the national standard of 100 becquerels of radioactive substances per kilogram in the aftermath of the Fukushima No. 1 Nuclear Power Plant disaster.

Fujita says he would be happy if producers and consumers can share the same feeling as they watch the rice grow. The kits are being sold online at [http://www.1101.com/store/little\\_tanbo/index.html](http://www.1101.com/store/little_tanbo/index.html) but numbers are limited. The standard kit is priced at 7,560 yen.

April 6, 2015

## 24 hour-stay allowed in Nahara

### Evacuees can stay 24 hours in Fukushima town

[http://www3.nhk.or.jp/nhkworld/english/news/20150406\\_18.html](http://www3.nhk.or.jp/nhkworld/english/news/20150406_18.html)

Residents of a town near the Fukushima Daiichi nuclear power plant can now stay in their homes 24 hours a day in preparation for the lifting of an evacuation order.

On Monday, the central government began to allow evacuees from Naraha Town in Fukushima Prefecture to stay in their homes at night as well as the day. **The measure will remain in effect for 3 months.**

After the 2011 accident at the plant, the government issued an evacuation order for most of the town. All of about 7,500 residents have been living away from their homes.

73-year-old Shigeru Yoshida and his 67-year-old wife Nobuko returned home from their temporary housing in Iwaki City, also in Fukushima. They brought in food, water and other daily necessities, and opened their windows to let in fresh air.

**The government says it will decide when to lift the evacuation order after meeting with residents.**

Many residents are voicing concerns about radiation. They also want the local infrastructure to be rebuilt.

Yoshida said he thinks the measure, which comes 4 years after the accident, indicates some progress. But

he said the area has no medical institutions and few shops. He said he hopes government officials will listen to residents' opinions on how the situation can be improved.

The officials say 182 of about 2,700 households in Naraha had applied for permission to stay as of Sunday.

April 7, 2015

## Fukushima radiation detected in Canada

### Fukushima radiation detected off Canada's coast

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504070065>

REUTERS

PORTLAND, Oregon--Radiation from Japan's 2011 Fukushima nuclear disaster has for the first time been detected along a North American shoreline, though at levels too low to pose a significant threat to human or marine life, scientists said April 6.

Trace amounts of Cesium-134 and Cesium-137 were detected in samples collected Feb. 19 off the coast of Ucluelet, a small town on Vancouver Island in Canada's British Columbia, said Woods Hole Oceanographic Institution scientist Ken Buesseler.

"Radioactivity can be dangerous, and we should be carefully monitoring the oceans after what is certainly the largest accidental release of radioactive contaminants to the oceans in history," Buesseler said in a statement.

The levels the group detected are extremely low. For example, swimming in the Vancouver Island water every day for a year would provide a dose of radiation less than a thousand times smaller than a single dental X-ray, Woods Hole said.

In March 2011, an earthquake and tsunami struck the Fukushima nuclear plant, 209 kilometers northeast of Tokyo, sparking a triple nuclear meltdown, forcing more than 160,000 residents to flee from nearby towns, and contaminating water, food and air. It was the world's worst nuclear disaster since Chernobyl in 1986.

Buesseler said he expects similar low cesium levels to gradually reach other North American shores, possibly extending along the U.S. West Coast from Washington state to California.

"Predicting the spread of radiation becomes more complex the closer it gets to the coast," Buesseler said.

In November 2014, Woods Hole reported detectable radiation from Fukushima about 160 km off the coast of northern California, but no radiation has yet been detected any closer to U.S. shores.

Tests off the coast of Japan shortly after the 2011 disaster measured radiation at 50 million becquerels per cubic meter, Buesseler said. A becquerel is a unit of radioactivity.

The Canadian water sample contained 1.4 becquerels per cubic meter of Cesium-134 and 5.8 becquerels per cubic meter of Cesium-137.

## **Fukushima radiation newly detected off British Columbia**

<http://www.japantimes.co.jp/life/2015/04/07/environment/fukushima-radiation-newly-detected-british-columbia/#.VSOMVpPwmos>

Reuters

PORTLAND, OREGON – Radiation from the Fukushima nuclear disaster that started in 2011 has for the first time been detected along a North American shoreline, though at levels too low to pose a significant threat to human or marine life, scientists said on Monday.

Trace amounts of Cesium-134 and Cesium-137 were detected in samples collected on Feb. 19 off the coast of Ucluelet, a small town on Vancouver Island in British Columbia, said Woods Hole Oceanographic Institution scientist Ken Buesseler.

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In March 2011, an earthquake and tsunami struck the Fukushima nuclear plant, 130 miles (209 km) northeast of Tokyo, sparking triple nuclear meltdowns, forcing more than 160,000 residents to flee from nearby towns, and contaminating water, food and air. It was the world’s worst nuclear disaster since Chernobyl in 1986.

Buesseler said he expects similar low cesium levels to gradually reach other North American shores, possibly extending along the U.S. West Coast from Washington state to California.

“Predicting the spread of radiation becomes more complex the closer it gets to the coast,” Buesseler said. The Woods Hole Oceanographic Institution said its conclusions were drawn from research it collected from community groups and a network of local academics and aquariums to collect water samples and fund radiation testing.

Last November, Woods Hole reported detectable radiation from Fukushima about 100 miles (161 km) off the coast of Northern California, but no radiation has yet been detected any closer to U.S. shores.

Tests off the coast of Japan shortly after the 2011 disaster measured radiation at 50 million Becquerels per cubic meter, Buesseler told Reuters. A Becquerel is a unit of radioactivity.

The Canadian water sample contained 1.4 Becquerels per cubic meter of Cesium-134 and 5.8 Becquerels per cubic meter of Cesium-137.

## **US lab: Fukushima radioactivity detected in Canada**

[http://www3.nhk.or.jp/nhkworld/english/news/20150407\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20150407_16.html)

US researchers say small and harmless amounts of radioactivity from the 2011 Fukushima nuclear accident have been detected on the west coast of Canada.

The scientists at the Woods Hole Oceanographic Institution announced on Monday that samples of seawater collected from the shoreline of Ucluelet, British Columbia, in February contained trace amounts



of cesium-134.

They say Fukushima would have to be the source of the radioactive cesium, as it is the only place recently where the material was produced and the substance has a 2-year half-life.

Cesium-134 has been detected in waters off the United States and Canada, but this is the first time it has been detected along a shore.

The scientists say the sample in Ucluelet contained 1.4 Becquerels per cubic meter, well below the internationally set level at which human and marine life can be affected.

They say the levels were extremely low but they will continue to carefully monitor the situation, as more sites in the region are expected to show detectable levels of cesium-134 in coming months.

April 9, 2015

## Safety drills monitored by NRA

### Inspectors to monitor drills at nuclear plants

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear watchdog is to send inspectors to monitor drills on dealing with severe accidents at idled nuclear power reactors before they are put back online.

All commercial reactors in Japan are now offline. The Nuclear Regulation Authority must determine whether the operators' measures meet the stricter requirements introduced after the 2011 Fukushima accident.

Four reactors have cleared the new regulations -- 2 at the Sendai plant in southwestern Japan and 2 at the Takahama plant in central Japan.

Utilities have been required to explain procedures to handle severe accidents. One example is preventing damage to the reactor core by using newly introduced emergency power-generation vehicles and pump trucks.

At a meeting on Wednesday, NRA officials decided to have utilities carry out a comprehensive drill before the reactors are restarted, under the assumption a severe accident had taken place. They will send inspectors to monitor the procedures to see whether workers are capable of carrying them out.

Participants in the drills will be told beforehand what the accident scenario will be, such as loss of the entire power supply. They will be required to carry out the necessary procedures within a limited time.

Similar checks will be conducted once a year to confirm that workers are capable of responding to accidents.

April 13, 2015

## Deadly radiation concentration in reactor

### Radiation measured at deadly 9.7 sieverts in Fukushima reactor

JII

Tokyo Electric Power Co. said Monday that radiation in the primary containment vessel of the No. 1 reactor of the Fukushima No. 1 power station gets as high as 9.7 sieverts per hour — enough to kill a human within an hour.

The radiation levels at six locations in the western section of the first floor of the PCV ranged from 7.0 to 9.7 sieverts per hour, the beleaguered utility said in disclosing data collected by a remote-controlled robot on Friday.

By contrast, the temperatures at the six locations monitored were cool, ranging from 17.8 to 20.2 degrees. Tepco sent the robot into the primary containment vessel on Friday, expecting it to stay alive for 10 hours. But the robot failed within three hours after completing about two-thirds of its planned route. Tepco has given up on recovering the robot.

The survey involved eight Tepco employees and 36 other workers who were hired by contractors. The maximum radiation dose logged was 1.73 millisieverts.

Tepco official Teruaki Kobayashi said the survey found no major obstacles around an opening leading to the underground part of the vessel, which is good news for future surveys needed to extricate the molten nuclear fuel.

The No. 1 reactor is one of the three damaged by core meltdowns during the Fukushima nuclear crisis in March 2011.

April 15, 2015

## NRA: Current regulations good enough

### NRA chief defends standards despite court decision

[http://www3.nhk.or.jp/nhkworld/english/news/20150415\\_44.html](http://www3.nhk.or.jp/nhkworld/english/news/20150415_44.html)

The head of Japan's nuclear power supervisor has hinted he sees no need to review regulatory requirements despite a court's decision to block the restart of 2 reactors.

Nuclear Regulation Authority Chairman Shunichi Tanaka spoke to reporters on Wednesday, the day after

the Fukui District Court issued its injunction. The court blocked the restarts of reactors 3 and 4 at the Takahama nuclear plant in Fukui Prefecture, central Japan.

The court found that stricter regulations put in place following meltdowns at the Fukushima Daiichi plant in 2011 are still too lax.

Tanaka said he regretted that the court didn't seem to understand that Japan's standards are recognized internationally as the toughest in the world.

He also said the court's decision contained factual errors about the magnitude of potential earthquakes and the quake-resistance of facilities and equipment.

Tanaka said the requirements require nuclear operators to make provision for a fairly strong earthquake. They must also, he said, take steps to prevent a severe accident even if the tremor is bigger than planned for.

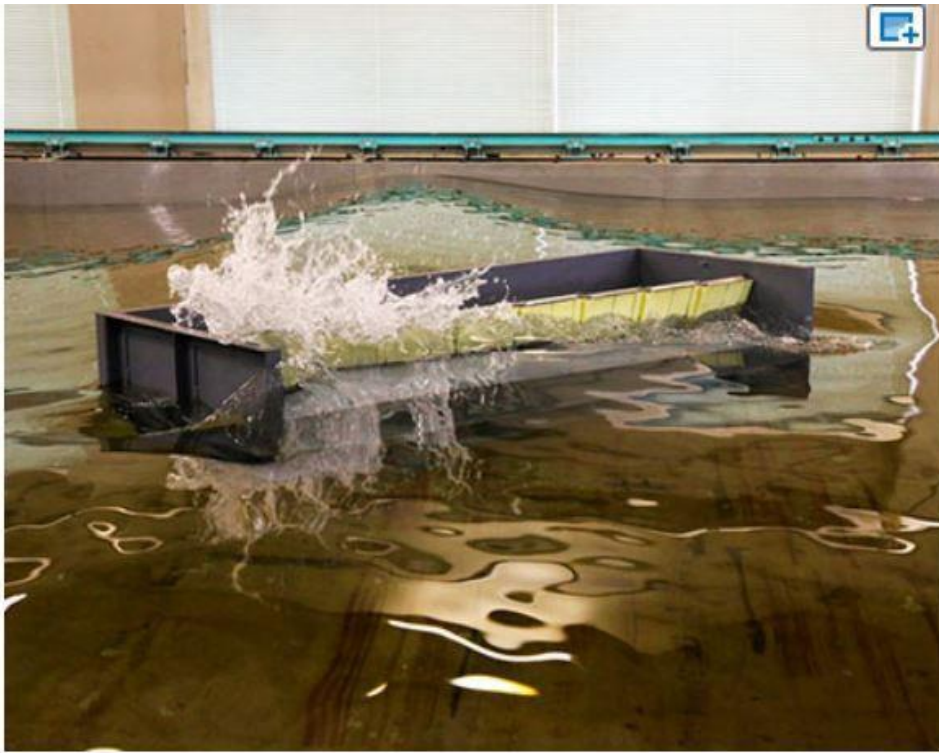
Tanaka indicated that the regulatory commission has no intention to review its requirements.

The NRA chairman added he will renew his efforts to explain to the public why the current requirements are good enough.

## New anti-tsunami walls

### **Self-elevating sea walls able to counter tsunami hundreds of meters wide**

[http://ajw.asahi.com/article/0311disaster/quake\\_tsunami/AJ201504150067](http://ajw.asahi.com/article/0311disaster/quake_tsunami/AJ201504150067)



Flap gates rise in a test at Nagoya University on April 7. (Taku Hosokawa)

By AYAKO TSUKIDATE/ Staff Writer

NAGOYA--Researchers say coastal barriers that use the force of waves to elevate automatically, and so spread the impact of tsunami or storm surges, proved effective in simulated tests and could offer an alternative to erecting massive sea walls.

Researchers at Nagoya University performed the experiment in laboratory conditions on April 7 with assistance from Hitachi Zosen Corp. and a number of organizations.

They found that the barriers can handle a tsunami measuring several hundred meters across.

When placed atop conventional sea walls, the so-called flap gates provide additional height and a buffer but do not mar the scenery as long as they remain flat.

Researchers created a scale model of a comprehensive coastal barrier because structures in the past were only capable of dealing with waves of up to around 10 meters across. This limited their use to openings in sea walls and other small spaces.

"This mechanism raises a sea wall just in the nick of time," said Norimi Mizutani, a professor of civil engineering at the Nagoya University Graduate School of Engineering. "So this is the answer that local residents have been looking for because it preserves the scenery but counters tsunami at the same time." Many municipalities have been under pressure to erect higher sea walls since the magnitude-9.0 Great East Japan Earthquake of March 11, 2011, triggered towering tsunami that devastated coastal areas of the Tohoku region.

However, gaining the consent of residents has been a challenge due to concerns that such massive structures will wreck the landscape.

When water rises and pushes up against the flap gate, the buoyant force raises the structure to form a wall, thus blocking the inundation.

A model with eight panels connected with a metal cable and one-fourth the size of the envisioned design was used for the test.

## NRA not pleased with Fukui injunction

### Nuclear watchdog hits out at injunction against restart of Takahama reactors

<http://www.japantimes.co.jp/news/2015/04/15/national/nuclear-watchdog-hits-out-at-injunction-against-restart-of-takahama-reactors/#.VS6AG5PwlLM>

AFP-JIJI

The head of the nation's nuclear watchdog said Wednesday a landmark court provisional injunction banning the restart of two atomic reactors was based on a judicial "misunderstanding" of basic facts. Although I haven't studied it in detail, many things that are based on misunderstandings are written in the verdict," Shunichi Tanaka told reporters, when asked about the court injunction that was issued on Tuesday.

"It is internationally recognized that our new regulatory regime is one of the strictest . . . but that was apparently not understood (by the judge)," the Chairman of the Nuclear Regulation Authority (NRA) told reporters.

Tanaka's damning comments came a day after a district court in Fukui Prefecture granted a temporary stop order in response to a bid by local residents to halt the restart of the No. 3 and No. 4 reactors at the Takahama nuclear power plant.

That came after the NRA said last December that Takahama's reactors met tougher safety standards introduced after a powerful earthquake and tsunami triggered a triple meltdown at Tepco's Fukushima No. 1 plant in 2011.

Pro-nuclear Prime Minister Shinzo Abe has backed an industry push to return to get the country's reactors back online — which once supplied more than a quarter of Japan's electricity — as companies squeal over the high cost of electricity produced from dollar-denominated fossil fuels.

But there has been a groundswell of public opposition to nuclear power since the Fukushima crisis — the worst atomic disaster since Chernobyl in 1986 — began.

Japan's entire stable of reactors was gradually switched off following the disaster, and tens of thousands of people remain displaced from areas around Fukushima because of elevated levels of radioactivity.

The NRA was sold to the public as a watchdog with teeth after criticism that the last nuclear regulator was spineless and had facilitated a cozy relationship between power companies and the government.

But criticism of the body has grown in recent months, with claims that outspoken critics have been removed from its ranks.

Anti-nuclear campaigners saw the legal challenge as something of a Hail Mary that was unlikely to succeed in Japan's usually meek courts.

But Tuesday's verdict was a shot across the NRA's bows, saying the body's safety guidelines are "too loose" and "lacking in rationality".

Presiding judge Hideaki Higuchi said the method of predicting the maximum size of future earthquakes that could hit the nuclear reactors “has lost credibility,” pointing out there have been five quakes in Japan that exceeded such predictions since 2005.

Tanaka said in greenlighting Takahama’s reactors, the NRA had taken into consideration past experience, including that at Fukushima.

“We have demanded utilities meet very strict guidelines . . . and take measures to prevent severe accidents even if an earthquake bigger than expected hits,” he said.

But he added that it was unreasonable to expect guarantees.

“There is no absolute safety in the world . . . a plane can fall and a train can overturn,” he said.

April 16, 2015

## 16 hours for residents to evacuate

### **Residents would need 16 hours to evacuate if Takahama plant struck by disaster:**

#### **NRA**

[http://www.japantimes.co.jp/news/2015/04/16/national/science-health/take-16-hours-evacuate-takahama-nuclear-plant-disaster-nra/#.VS\\_pvpPwLLM](http://www.japantimes.co.jp/news/2015/04/16/national/science-health/take-16-hours-evacuate-takahama-nuclear-plant-disaster-nra/#.VS_pvpPwLLM)

Kyodo

INJUNCTION, POLARIZING: PAGE 2 – The Nuclear Regulation Authority estimates it would take up to 16 hours for the 180,000 people living within 30 km of the Takahama nuclear complex in Fukui Prefecture to evacuate if disaster struck, sources said Wednesday..

The estimate is 4 hours and 50 minutes longer the figure calculated by the Fukui Prefectural Government, which covered only 90 percent of residents of Fukui and Kyoto prefectures living within 30 km of the plant and did not take into account the time required to conduct checks for radiation contamination.

Like the prefectural government, the evacuation times estimated by other municipalities located within 30 km of nuclear power plants tend to be short. The NRA’s estimates of evacuation times suggested local governments have underestimated the difficulties of evacuation during a nuclear disaster.

**That information was released a day after a court issued an injunction against Kansai Electric Power Co. restarting two reactors at its Takahama nuclear plant that had previously cleared the NRA’s safety screening, questioning the reasonability of the screening standard.**

The NRA estimation includes the time required for all residents within 30 km of the Takahama complex to undergo contamination check-ups and arrive at evacuation centers after an evacuation is ordered.

The nuclear watchdog expects the maximum time required to complete the evacuation process in Fukui Prefecture, if proper traffic control measures were not followed, would be 16 hours. In neighboring Kyoto Prefecture, the figure is 15 hours and 40 minutes.

The NRA has also calculated evacuation times for other nuclear power plants in Fukui Prefecture — of Kepco's Mihama and Oi complexes, and Japan Atomic Power Co.'s Tsuruga nuclear plant. The calculations assume residents would evacuate to either Ishikawa, Osaka, Hyogo, Nara or Tokushima prefectures. The longest evacuation time would be 26 hours and 20 minutes for a worst-case scenario involving a disaster at the Mihama plant, almost double from what the Fukui Prefectural Government had estimated.

## Revising the risk of nuclear accidents

### **Risk probability of major nuclear accident to be cut by half**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504160072>

The industry ministry intends to cut the risk probability of a major nuclear accident occurring to once in 80 years, half that of the once-in-40-years rate contrived just after the Fukushima disaster in 2011.

The industry ministry is a big supporter of nuclear power because it offers a cheap energy option.

The risk rate of a nuclear disaster is being revised because nuclear power plants are now only allowed to operate under safety standards set by the Nuclear Regulation Authority that are much stricter than at the time of the Great East Japan Earthquake and tsunami four years ago.

A plan assessing electricity generation costs was made under the administration led by the Democratic Party of Japan in 2011 following the Fukushima No. 1 nuclear power plant crisis, in which the probability of a large-scale nuclear power accident was presumed to be once in 40 years.

The cost of dealing with the basic damage plus the radioactive contamination of the environment was taken into account in determining the generation costs.

If the probability is revised to once in 80 years, the proposed costs for dealing with nuclear disasters will be reduced. But the ministry still plans to increase the safety fees to meet the NRA's new regulations. This means the cost of generating nuclear power will likely exceed the price set in the 2011 plan as "more than 8.9 yen" per kilowatt-hour.

All nuclear power plants in Japan suspended operations as the Fukushima No. 1 nuclear power plant crisis unfolded following the earthquake and tsunami. In recent months, however, several nuclear power plants are making preparations to resume operations, having passed safety screenings conducted by the NRA based on the stricter standards.

With the application of such standards, the average probability of a core meltdown and other major accidents in such facilities as the Sendai nuclear power plant in Satsuma-Sendai, Kagoshima Prefecture, which will be resuming operations in July at the earliest, will be cut to half of what was presumed before the new safety measures were implemented.

**The ministry plans to utilize such power plants as examples to justify revising the probability of nuclear accidents.**

(This article was written by Daiki Koga and Tomoyoshi Otsu.)



## NRA not pleased with Court decision (2)

### Nuclear regulator blasts court injunction against reactor restarts

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504160061>

The head of the government's nuclear watchdog body took issue with a recent court injunction on reactor restarts, saying the ruling was based on a faulty understanding of the facts.

"It showed that our efforts were not understood sufficiently," Shunichi Tanaka, chairman of the Nuclear Regulation Authority, said at a news conference on April 15 in response to the Fukui District Court's decision a day earlier.

The injunction banned the restart of two reactors at the Takahama nuclear power plant in Fukui Prefecture that are operated by Kansai Electric Power Co.

In its ruling, the court said the new safety regulations lack "rationality" and do not guarantee safety. Tanaka said, despite the ruling, the NRA has no plans to immediately review its safety guidelines or screening procedures.

"(The new regulations) were compiled based on lessons learned from the accident at the Fukushima No. 1 nuclear power plant and are among the most stringent in the world," he said. "I have no clue as to the true intention (of the use of the term 'rationality')."

Tanaka went further in pointing out factual errors in the decision. Although the court said the quake resistance of equipment that sends cooling water to a pool that stores spent nuclear fuel at the Takahama plant was rated low, in reality, it had the agency's highest rating, according to the NRA chairman.

He also said the requirements governing quake resistance at nuclear facilities were reached by factoring in additional safety precautions against the estimated maximum levels of shock at the sites. The requirements also took into account that previous quakes have exceeded the worst-case scenarios planned for by plant operators.

## Govt and utilities "reverting to safety myth" of nukes

### Address nuclear safety concerns

[http://www.japantimes.co.jp/opinion/2015/04/16/editorials/address-nuclear-safety-concerns/#.VS\\_rnpPwlLM](http://www.japantimes.co.jp/opinion/2015/04/16/editorials/address-nuclear-safety-concerns/#.VS_rnpPwlLM)

The Fukui District Court's injunction issued this week against restarting the Nos. 3 and 4 reactors of Kansai Electric Power Co.'s Takahama nuclear power plant again raises the question of who can guarantee the safety of nuclear power plants and how — an issue that the Abe administration seems to be keeping in the dark as it seeks to reactivate idled reactors that meet what it touts as the world's toughest safety standard.

The court on Tuesday dismissed the standard adopted by the Nuclear Regulation Authority in 2013 in the wake of the 2011 Fukushima nuclear disaster as "too lax" and "lacking in rationality" and said that it cannot approve restarting reactors that have cleared the NRA's screening under its guideline. This is a challenge to the administration's policy of relying on the NRA's endorsement as the green light for



resuming operation of idled reactors. Kansai Electric was given the NRA's nod in February to restart the Takahama reactors — only the second case among the nation's nuclear plants following Kyushu Electric Power Co.'s Sendai plant in Kagoshima Prefecture. But the injunction, which took effect immediately, puts the restart on hold until it's reversed by a higher court.

In the court ruling, presiding Judge Hideaki Higuchi said the safety requirements of nuclear power plants must be rigorous enough to eliminate any chance of a serious disaster. The NRA has required power companies seeking approval of restarting their reactors to raise the intensity of the assumed maximum possible temblor that could hit in and around the plant site based on the area's geological structure — which serves as the basis for the quake-resistant designs of the plants. Kansai Electric has told the court that the Takahama plant, which meets the NRA's requirement, is secure enough against major disasters. The Fukui court, however, pointed out that over the past decade, four nuclear power plant sites across Japan were hit by five temblors that exceeded the maximum level anticipated by the plants' operators. It would be groundless optimism to believe that the Takahama plant site alone would not be hit by a quake stronger than the assumed level, which could cripple its cooling system and possibly damage the reactor cores, the court stated in its ruling. Such a risk would not be eliminated, the court said, unless the assumed quake level was more substantially upgraded and the plant's quake-resistant features were fundamentally beefed up.

In May last year, Judge Higuchi handed down another Fukui court ruling that banned the restart of idled reactors — that time at the Oi plant also run by Kansai Electric on the Fukui coastline. Given that the only two court rulings against the operation of nuclear power plants in the wake of the Fukushima disaster were made by the same judge in the same court, his decisions have not escaped criticism. Some experts have pointed to what they called the court's misunderstanding of the technical aspects of the power plants. Others have said the judge is essentially calling for 100 percent safety of nuclear power and zero tolerance against associated risk, which would make it impossible to run nuclear plants in a country prone to earthquakes and other natural disasters.

In response to the Fukui court's decision, Chief Cabinet Secretary Yoshihide Suga said the government stands by the NRA's decision and it would not change its position to seek the restart of nuclear reactors based on the NRA's endorsements. Kansai Electric, which was planning to restart the Takahama reactors as early as November after obtaining consent of local authorities, said it would appeal the injunction to a higher court.

**But aren't the administration and the power companies reverting to the safety myth of nuclear power — which permeated the government and the power industry up until the Fukushima nuclear crisis — by repeating their faith in the safety standard set by the NRA and dismissing any challenge to its validity?**

The experience of the March 2011 triple meltdowns at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant, triggered by the Great East Japan Earthquake and tsunami, has shown that the unthinkable can happen. And when it happens in a nuclear facility, the result can be far-reaching and long-term damage. More than four years after the disaster, Tepco and the government are still struggling to clean up the mess at the crippled plant, while nearly 120,000 Fukushima residents remain displaced both in and outside the prefecture due to the effects of the radiation fallout.

NRA chairman Shunichi Tanaka himself reiterates that its standard does not eliminate the safety risk of nuclear power plants, and that its screening is only meant to see if the plants meet the updated safety guideline. The Abe administration repeats that it is following the NRA's judgment in promoting the restart of idled reactors. Meanwhile, a majority of people in media opinion polls continue to oppose the restart of

reactors, a stance that reflects their safety concerns over nuclear power in the wake of the Fukushima crisis.

**The government and power companies should not dismiss the Fukui court injunction as an aberrant decision by a lower court, but instead take it as a cue to reflect on whether they have sufficiently addressed people's safety concerns and various questions raised about the reactor restarts. If legitimate questions exist about the NRA's nuclear plant safety standard, they should be addressed.**

April 17, 2015

## Raising workers' exposure in cases of emergency

### Experts propose raising exposure limit for workers

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japanese experts have proposed raising the radiation exposure limit for nuclear plant workers in the event of a severe accident.

An expert panel of the labor ministry came up with the proposal on Friday based on lessons from the Fukushima Daiichi nuclear accident in 2011.

During the nuclear crisis, many workers at the plant were exposed to radiation beyond the government limit of 100 millisieverts. It had to be temporarily raised to 250 millisieverts.

On Friday, **the panel's report said the labor minister should be able to raise the limit up to 250 millisieverts in some emergencies.**

These would include a serious nuclear accident in which local residents are exposed to radiation. An accident might also make a plant's radiation levels too high and thus workers could not get the job done if the 100-millisievert limit is maintained.

**The proposal requires nuclear plant operators get prior consent from workers who might have to deal with such a situation.**

**It also requires the operators provide the workers with training on protective gear and other radiation precautions.**

The labor ministry plans to revise regulations on worker safety based on the report.

April 18, 2015

## **Doubling workers' maximum dose (2)**

### **Health ministry proposes more than doubling radiation exposure limit**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201504180025>

By TOMOYO FUKUMIYA/ Staff Writer

The health ministry recommends raising the maximum radiation-exposure limit for nuclear plant workers during an emergency from the current 100 millisieverts to 250 millisieverts.

The proposed figure, contained in a report completed April 17 by a panel of experts at the Ministry of Health, Labor and Welfare, would then be precisely half that of the 500-millisievert limit set by the International Atomic Energy Agency.

After the 2011 Fukushima nuclear disaster, the maximum limit of exposure in emergencies was temporarily raised to 250 millisieverts for workers at the plant as an exceptional measure. Nine months later it was returned to 100 millisieverts.

The health ministry began considering raising the maximum radiation exposure limit for workers at all nuclear plants to 250 millisieverts following a suggestion by the Nuclear Regulation Authority in December. The new limit will be rubber-stamped after being examined by two ministry committees.

Currently, the health ministry also sets the upper limit of cumulative radiation exposure at 100 millisieverts over a five-year period in nonemergency cases.

It instructs plant operators not to exceed this limit for workers even when the accumulated exposures in emergency and nonemergency cases are combined.

### **Gov't committee recommends more than doubling Fukushima plant workers' max radiation dose**

<http://mainichi.jp/english/english/newsselect/news/20150418p2a00m0na003000c.html>

The maximum radiation dose for staff doing emergency work at the Fukushima No. 1 nuclear plant should be hiked from 100 millisieverts to 250 millisieverts, an expert government panel stated in an April 17 report.

The expert panel under the Ministry of Health, Labor and Welfare is charged with considering policy on the long-term health of workers at the Fukushima No. 1 plant, operated by Tokyo Electric Power Co.

The panel recommendations must undergo a public comment phase, as well as pass the ministry's labor policy and radiation committees before they are incorporated into official safety standards. The ministry is aiming to make the necessary revisions to anti-radiation damage regulations in autumn this year.

At present, regulations state that a worker can be exposed to a maximum level of 50 millisieverts of radiation per year, and 100 millisieverts over five years. This upper limit had been raised to 250 millisieverts for emergency workers at Fukushima No. 1 plant, though this was later repealed. The expert committee decided, however, that this higher limit was appropriate.

April 21, 2015

## How much toxic water has leaked into sea?

### **Fukushima plant pumps halted, toxic water leaking into ocean**

<http://mainichi.jp/english/english/newsselect/news/20150421p2g00m0dm067000c.html>

TOKYO (Kyodo) -- Tokyo Electric Power Co. said Tuesday it has found all of the eight water transfer pumps halted at its stricken Fukushima Daiichi nuclear power station, leaving radiation-contaminated water to leak into the Pacific Ocean.

The utility is now checking why the pumps for a drainage path have stopped and how much water has leaked into the ocean.

TEPCO began to pump up contaminated water from the path only last Friday, after finding in late February that radioactive water was continuing to leak from the path into the ocean, following the March 2011 earthquake-tsunami disaster that devastated the plant.

The pumps, designed to move contaminated water from the path to another one that leads to a bay facing the station surrounded by fences, were confirmed to be working Monday afternoon but found stopped at 8:45 a.m. Tuesday.

The utility unveiled earlier this year that it had found water samples from the drainage last May containing more radioactive materials than the legally allowable limit.

### **Outage hits pumps at Fukushima plant; toxic water leaks into ocean**

Kyodo

<http://www.japantimes.co.jp/news/2015/04/21/national/outage-hits-pumps-fukushima-plant-toxic-water-leaks-ocean/#.VTY0vJPwmot>

Tokyo Electric Power Co. on Tuesday reported that a power outage has shut down all eight water transfer pumps at the Fukushima No. 1 nuclear power station and that radioactive water is again leaking into the Pacific Ocean.

The pumps are being used to pump tainted water from a drainage channel to another channel leading to a fence-enclosed artificial bay facing the station. The beleaguered utility said it was checking into what happened and how much water had leaked.

The pumping had begun last Friday, in response to a finding in late February that highly radioactive water in the channel was reaching the ocean. They were confirmed to be working Monday afternoon but found stopped at 8:45 a.m. Tuesday.

The utility said earlier this year that water samples from the drainage channel last May contained concentrations of radioactive materials that surpassed the legal limit.

### **Radioactive water leaking into sea**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the crippled Fukushima Daiichi nuclear power plant says radioactively contaminated rainwater is spilling outside the facility's port after pumps to prevent leakage stopped working.

In February, Tokyo Electric Power Company, or TEPCO, found that radioactive rainwater that had accumulated on the roof of the plant's No. 2 reactor building was leaking outside the port through a drainage channel.

TEPCO blocked the channel and installed 8 pumps in a tentative measure to reroute the channel so that contaminated water would not leak into the sea.

The firm started operating the pumps last Friday. But on Tuesday, a worker found that they had stopped and the water was going into the sea.

TEPCO officials say they don't know the amount or radioactive level of the water. But they say that as of April 9th, the level was extremely low.

They add that the pumps were working normally when workers checked them on Monday afternoon. They say they don't know what caused the problem or when they can restart the pumps.

The pumps can handle rainfall up to 14 millimeters per hour. It was not raining heavily when they presumably stopped.

## Pumps back in operation

### **Pumps restart; contaminated water leak stops**

[http://www3.nhk.or.jp/nhkworld/english/news/20150422\\_03.html](http://www3.nhk.or.jp/nhkworld/english/news/20150422_03.html)

The operator of the crippled Fukushima Daiichi nuclear power plant says radioactive rainwater has stopped leaking into the sea as pumps are back in operation.

Officials of Tokyo Electric Power Company say the generator for the 8 pumps was apparently out of order.

The pumps were used to draw the contaminated rainwater from a drainage channel to prevent leaks.

The utility used a backup generator to restart the pumps on Tuesday night.

The officials had reported the trouble earlier on Tuesday. They said a worker found the pumps had stopped, allowing the water to spill outside the facility's port.

The officials say the rainwater spilled into the sea for more than 11 hours, but they do not know the amount.

But they say the radioactive levels of the drainage water were low in samples taken shortly before the problem was discovered.

They say the utility is continuing an investigation to pinpoint the cause of the trouble.

The pumps had been installed as a stopgap measure to reroute the channel after the utility found in February that contaminated rainwater was leaking into the sea.

The firm said the rainwater that had accumulated on the roof of a reactor building was spilling through the drainage channel. This rooftop water contained comparatively high levels of radioactive substances.

April 29, 2015

## Forest fire in Chernobyl no-go zone

### Forest fire erupts in Chernobyl nuclear no-go zone

[http://www3.nhk.or.jp/nhkworld/english/news/20150429\\_11.html](http://www3.nhk.or.jp/nhkworld/english/news/20150429_11.html)

A forest fire has erupted in an exclusion zone around the Chernobyl nuclear plant in Ukraine, prompting fears that radioactive substances in the woodland may spread.

The fire broke out on Tuesday in the no-go zone set up within a 30-kilometer radius of the plant. It spread due to strong winds.

Ukraine's Interior Ministry says the fire has burned 400 hectares in the off-limits zone and reached an area 20 kilometers from the plant.

Prime Minister Arseniy Yatsenyuk told local media that 200 personnel are combating the blaze. He said the fire is the biggest since 1992, but the situation is under control.

Yatsenyuk added that no change in background radiation levels has been detected.

Interior Minister Arsen Avakov indicated the fire may have been started intentionally, as the blaze is believed to have several origins.

One of the reactors at the Chernobyl plant exploded in 1986, sending a huge amount of radioactive materials into the air.

## Chernobyl: New fallout likely

News | By Christof Lehmann

## **Forest Fire rages in Ukraine's Chernobyl Exclusion Zone: New Fallout to be expected**

<http://nsnbc.me/2015/04/29/forest-fire-rages-in-ukraines-chernobyl-exclusion-zone-new-fallout-to-be-expected/>

Christof Lehmann (nsnbc) : **A forest and wildfire, reportedly spanning over some 5,000 – 10,000 hectares in the exclusion zone around Ukraine's crippled Chernobyl nuclear power plant is being combated by Ukrainian emergency services. PM Yatzenyuk states that the "situation is under control". Interior Minister Avakov states that the situation is worsening. Meanwhile, the burning of organic materials which have bio-accumulated radioactive isotopes since 1986 may cause a new wave of radioactive fallout.**

A series of forest fires in the 30 kilometer or 18.6 mile exclusion zone around the Chernobyl NPP that went through an explosion and a 30% meltdown caused by human error in 1986 continues raging on. Ukrainian PM Arseny Yatzenyuk told Ukrainian and international media that emergency services and National Guard units have the situation under control.

Locals report to nsnbc that the fires continue approaching the sarcophagus that was built around the defunct power plant and that the fires also continue to approach nuclear waste storage facilities in the "forbidden zone".

While PM Yatzenyuk stated that the fires involve some 400 hectares, local residents informed nsnbc that the "fires" themselves may very well cover some 400 hectares, but that the fires are dispersed over some 10,000 hectares. Similar statements have been issued by the Russian chapter of Greenpeace.

Ukraine's Interior Minister, Arsen Avakov, who is in charge of Ukraine's National Guard, contradicted PM Yatzenyuk's statement's. On his Facebook page, Avakov stressed that the situation continues to worsen and that:

*"The forest fire is heading in the direction of Chernobyl's installations. Treetop flames and strong gusts of wind have created a real danger of the fire spreading to an area within 20 kilometers of the power plant. There are about 400 hectares [988 acres] of forests in the endangered area.."*

Rumors, according to which the fires have been caused by arson could, at least thus far, not be independently verified.

### **New fallout / and cover-up of the risks to be expected.**

The Secretary of the European Committee on Radiation Risks, Prof. Dr. Christopher Busby told the Russian State-run media Russia Today that:

*"Some of the materials that were contaminating that area would have been incorporated into the woods. In other words, they land on the ground in 1986 and they get absorbed into the trees and all the biosphere. And when it burns, they just become re-suspended. It's like Chernobyl all over again. All of that material that fell on the ground will now be burned up into the air and will become available for people to breathe."*

Dr. Christopher Busby's concerns about the risk of a new wave of fallout due to the dispersion of radionuclides is supported by an environmental study concerning the bio-accumulation of radioactive isotopes in forests around the crippled Japanese Fukushima Daiichi Nuclear Power Plant.

A Japanese study conducted between 2012 and 2013 in a 60 – 120 km radius around the crippled power plant concluded that cesium levels sampled in forests had doubled within one year.

The study concluded that the environment bio-accumulates hot particles in the fallen leaves, the forest soil as well as in the trees and other bio-mass.

Measurements taken in June 2012 showed that more than half of the sampled leaves contained 26.000 becquerel per kilogram.

Measurements taken one year later, in June 2013, showed that more than half of the leaves contained 42.000 bequerels per kilogram.

Soil samples, representing the surface earth up to a depth of ten centimeters, increased from about 721 to 3.000 bequerels.

Arguably, one can extrapolate from the Fukushima study that the burning trees and upper soil leads to the renewed release of a cohort of radioactive isotopes from the exclusion zone around the Chernobyl NPP, with the fallout being carried downwind. Westerly winds were prevailing on Tuesday and Wednesday. The Ukrainian government decided to evacuate some residents due to the risk of the spread of the fires. So far, no decision has been made to evacuate downwind areas.

Experts in radiation health would normally advise populations downwind the fires to stay indoors, to take precautionary measures such as protecting their respiratory tracts, and to avoid the ingestion of e.g. vegetables until further notice to avoid the ingestion of hot particles. Particular caution is advisable during and after rainfall in the affected areas.

## Workers get radioactive water on their faces

### Plant workers splashed with radioactive water

[http://www3.nhk.or.jp/nhkworld/english/news/20150429\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20150429_02.html)

It's been disclosed that 3 employees were accidentally splashed with radioactive water **last week** at a nuclear power plant in Shimane Prefecture, western Japan.

Officials at the plant's operator, Chugoku Electric Power Company, said on Tuesday that the workers do not have any health problems and radioactive substances did not leak outside the facility.

They say the workers had been using a pump to transfer contaminated water from a tank in the basement of the Shimane plant's number one reactor building on April 22nd.

They say a hose to the pump got unhooked, and the **3 employees were exposed to about 4 liters of radioactive water that splashed on their faces and legs**. They say the radiation level of the water was one-tenth of the government's safety limit.

**Company officials say they did not immediately announce the accident as the workers did not absorb any of the tainted water and the radiation level was not that high.**

They say they will find the exact cause of the accident and work to prevent a recurrence.



April 30, 201

## **Chernobyl ablaze. Again.**

<http://www.beyondnuclear.org/russia-ussr/2015/4/30/chernobyl-ablaze-again.html>

In what might have been a case of arson, 1.5 square miles of land was set ablaze around the ruined Chernobyl reactor, which exploded and released massive amounts of radionuclides in 1986. It was the worst fire in the area in 20 years and marks the 29<sup>th</sup> anniversary of the disaster almost to the day it began (April 26).

Fires can release and redistribute man-made radioactivity in the environment, contaminating areas that were not contaminated before, or making areas of low contamination higher. Since deposition of radioactive contamination around Chernobyl was spotty initially, Ukrainian officials cannot be sure this fire hit heavily contaminated areas although they claim no change in background levels was detected. This claim is difficult to believe because radioactivity levels after past fires have been six to 12 times higher than before the fires began.

This most recent fire in the Chernobyl exclusion zone has highlighted some uncomfortable truths: climate change could cause declining precipitation which could, in turn, cause more wildfires in the already fire prone Chernobyl landscape. Not only could fire release nuclides like cesium, strontium and plutonium be from around the Chernobyl itself, but fires throughout Europe and Eurasia could also release radiation that had been deposited hundreds of miles from the ruined reactor.

Dr. Mousseau and colleagues have created a computer model that demonstrates “wildfires that broke out in the exclusion zone in 2002, 2008 and 2010 have cumulatively redistributed an estimated 8 percent of the original amount of cesium-137 released in the 1986 disaster.”

In fact, forest fires have been a concern (see Stalked by Forest Fires section) for radioactively contaminated ecosystems for a long time and will also be a concern for the ongoing Fukushima nuclear disaster. Adding to the likelihood of recontamination by fire, is the lack of plant decay processes in contaminated areas around Chernobyl, which leaves drying plant matter as tinder for any spark. Proof yet again, that nuclear disasters are never-ending.

**Update** on April 30, 2015 by admin

RT International invited Beyond Nuclear on to discuss the radioactive wildfires burning in the Chernobyl region.

## **Extending it by 20 years**

### **Kansai Electric files to extend use of reactors**

[http://www3.nhk.or.jp/nhkworld/english/news/20150430\\_40.html](http://www3.nhk.or.jp/nhkworld/english/news/20150430_40.html)

Kansai Electric Power Company has applied to extend the operational lifespan of 2 of its nuclear reactors by 20 years.

The company filed the application with the Nuclear Regulation Authority on Thursday. The extension covers the No.1 and No.2 reactors of the Takahama plant in Fukui Prefecture, central Japan.

After the accident at the Fukushima Daiichi nuclear plant in 2011, the government introduced regulations that limit the operational lifespan of reactors to 40 years in principle.

Operation of the 2 Takahama reactors started about 40 years ago.

Power companies that seek to extend the limit must inspect reactors and other equipment for possible deterioration.

This is the first time a power company has applied for an extension under the new system.

Kansai Electric officials say they have concluded that there are no safety problems after inspecting the reactors and containment vessels starting last December.

For the extension to be granted, the reactors must pass screening based on the new requirements to go back online. The application must also be approved by July of next year.

Observers say the screening may take time because of measures required for the aging reactors. Such measures include preventing electric cables from catching fire and lowering radiation leakage in the event of an accident.

The industry ministry envisions nuclear power contributing 20 to 22 percent of the country's total energy mix in fiscal 2030. The ministry stated the percentages in its draft plan for the optimal energy mix.

The draft assumes that multiple nuclear reactors will be granted extensions beyond 40 years.

May 1, 2015

## **Suspected leak of highly radioactive water from (bolted) tank**

### **Possible leak probed at Fukushima Daiichi plant**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the disabled Fukushima Daiichi nuclear plant is investigating a **suspected leak of highly radioactive water from a holding tank at the facility.**

Tokyo Electric Power Company says inspectors found a pool of water at the base of the tank on Friday morning. The pool's surface measures about 20 by 20 centimeters square.

Company officials say workers placed sandbags around the water and there's no sign the pool is getting bigger. They say none of the water has seeped past barriers surrounding the tanks.

The officials say they measured a high **70-millisievert-per-hour rate of beta ray emission from the surface of the water.**

Water that was pumped out of the reactor buildings is stored in many tanks at the plant. The water was treated to remove cesium but remains highly toxic. Officials believe the water in the pool came from one of the tanks.

**The tank is an old type that has leaked before. Its steel plates are simply bolted together, not welded.**

Tokyo Electric plans to remove the remaining water in the tank for treatment. And officials will try to find out how the leak occurred.

## Extending it for 20 years, KEPCO (2)

### **Kepco applies to extend operating life of two aging reactors in Fukui by 20 years**

<http://www.japantimes.co.jp/news/2015/05/01/national/kepco-applies-extend-operating-life-two-aging-reactors-fukui-20-years/#.VUMqo5Pwmos>

JII

Kansai Electric Power Co. on Thursday applied for regulatory approval for extending by 20 years the operational periods of two aging reactors at its Takahama nuclear power plant in Fukui Prefecture because it found no problems with them in its special safety checks.

The application for the reactors 1 and 2, which are now offline, at the Takahama plant was submitted to the Nuclear Regulation Authority.

This is the first time an application for extending an operational period of a reactor aged 40 years or older has been filed.

The revised law on nuclear power plant regulations sets basic operation periods of nuclear reactors at 40 years. Operational periods can be extended only once by up to 20 years if certain conditions are met.

At the Takahama plant, reactor 1 is already over 40 years old, and reactor 2 will reach 40 years in November.

The moratorium period set under the law will expire in July 2016.

The two reactors are the oldest among the 43 reactors in Japan, excluding those that have been decommissioned.

Kepco started its special checks in December to investigate the condition of the two reactors.

After checking the pressure and containment vessels of the reactors with ultrasonic tests and visual examinations, the company concluded they can operate beyond 40 years.

According to Kansai Electric, safety screening for operational period extension will cover pressure and containment vessels as well as pipes, reactor buildings and emergency power generators for a total of about 3,100 items for reactor 1 and some 3,000 items for reactor 2.

The NRA will examine whether Kansai Electric's special safety checks are satisfactory.

In March, Kansai Electric separately applied for NRA screening that is necessary for restarting the two reactors under the new safety standards introduced in July 2013.

If the extensions are approved, Kansai Electric expects the two reactors to resume operations in November 2019 at the earliest, as they require further safety measures before their restart.

Also on Thursday, Kansai Electric told the prefectural government of Fukui that it will launch special checks as early as in mid-May for reactor 3, which is also offline, at its Mihama plant. The reactor will be 40 years old in December next year.

## More workers getting injured (2)

### Worker injuries double at Fukushima plant; TEPCO cites inexperience

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505010037>

One worker died and 63 others were injured in industrial accidents at the Fukushima No. 1 nuclear power plant in fiscal 2014, double the casualty figure from a year earlier, the plant operator said.

Tokyo Electric Power Co. said April 30 that about half of the injured workers in fiscal 2014 had worked at the crippled plant for less than six months, indicating that inexperience was a key factor behind the rise in labor accidents during decommissioning and other work.

TEPCO said 32 workers were involved in labor accidents at the plant in fiscal 2013.

The utility said it will improve training facilities and information-sharing mechanisms at the plant.

Six of the workers suffered serious injuries that prevented them from working for at least 14 days.

Another six were sidelined for between one and 13 days because of their injuries.

Overall, 15 workers suffered from heatstroke, 13 fell or stumbled, and 13 had mishaps with machinery and other equipment.

TEPCO pointed to an inability of its workers to learn from their experiences as a potential factor behind the increase in accidents. Company employees also failed to visit work sites on a sufficient number of occasions to supervise other workers, it said.

## Scrap 'hair-trigger' alert systems!

### Russian 'hair-trigger' nuclear alert urged ended, especially in age of cyberattack

<http://www.japantimes.co.jp/news/2015/05/01/world/u-s-russian-hair-trigger-nuclear-alert-urged-ended-especially-age-cyberattack/#.VUMq-5Pwmos>

AFP-JII

WASHINGTON – Former U.S. and Russian commanders Thursday called for scrapping “hair-trigger” alerts on nuclear weapons that carry grave risks of a potential atomic disaster — especially in an age of cyberattacks.

Retired military officers from the United States, Russia and other nuclear powers issued a report warning of the mounting dangers of the short fuses that allow hundreds of atomic weapons to be launched within minutes.

The high alert status is a legacy of outdated Cold War doctrine, when U.S. and Soviet leaders feared a devastating first strike that could “decapitate” an entire nuclear force, according to the report sponsored by the disarmament group Global Zero.

“Hundreds of missiles carrying nearly 1,800 warheads are ready to fly at a moment’s notice,” said the report. “These legacy postures of the Cold War are anachronisms but they remain fully operational.”

The hair-trigger alert, which applies to half of the U.S. and Russian arsenals, is particularly dangerous in an era when “warning and decision timelines are getting shorter, and consequently the potential for fateful human error in nuclear control systems is growing larger.”

The growing threat of cyberassault also exacerbates the risks of the alert status, opening the way for false alarms or even a hijacking of the control systems for the weapons, it said.

“Vulnerability to cyber attack . . . is a new wild card in the deck,” it said.

The report calls for the United States and Russia to renounce the prompt-alert arrangements and to require 24 to 72 hours before a nuclear weapon could be launched. And it also urges forging a binding agreement among all countries to refrain from putting their nuclear forces on high alert.

“There are a set of vulnerabilities particularly for the U.S. and Russia in these systems that were built in the fifties, sixties, seventies and eighties,” said James Cartwright, the retired four-star general who once was in charge of the U.S. nuclear arsenal.

“Many of these old systems are subject to false alarms,” Cartwright said at a news conference.

The report said other nuclear powers, including China, India, Pakistan, Israel, France and Britain, had less risky systems for their nuclear weapons compared to the United States and Russia.

“Their architectures have provided for lower alert rates and afforded decision-makers more time to consider their nuclear options,” it said. “The United States and Russia could learn from these models.”

## **NRA ignored (Nankai) earthquake risk**

### **NRA's approval of Sendai nuclear plant ignores Nankai quake risk, seismologist warns**

<https://www.japantimes.co.jp/news/2015/05/01/national/nras-approval-sendai-nuclear-plant-ignores-nankai-quake-risk-seismologist-warns/>

**by Yuriy Humber**

Bloomberg

The nation’s new nuclear regulator ignored earthquake risk and its own rules in approving the safety of the Sendai nuclear plant, said Kobe University professor and seismologist Katsuhiko Ishibashi.

Ishibashi, well-known in Japan for books and papers on earthquake threats that later became reality, said he has filed a formal complaint to the Nuclear Regulation Authority challenging the legality of its decision.

The NRA's approval in September of Kyushu Electric Power Co.'s Sendai nuclear plant in Kyushu opens the way to restart two reactors at the station, possibly this year. They are the first of Japan's viable reactors to pass the new standards introduced since the Fukushima nuclear crisis in 2011. All reactors in the country have been shut for safety checks for at least 18 months.

Ishibashi has seen his warnings of earthquake dangers come true in devastating fashion at least twice in a country that accounts for about 10 percent of the world's quakes.

In a 1994 book "A Seismologist Warns," he said building codes were putting Japan's cities at risk. The following year, the Kobe earthquake buckled bridges, highways, and brought down buildings, killing more than 6,000 people.

Then in 1997, he wrote a report in Japan's Science Journal where he coined the term "nuclear earthquake disaster." The paper was written about 14 years before the Fukushima disaster, yet reads like a post-mortem of what happened: A major quake knocks out external power to the plant's reactors and unleashes a tsunami that overruns its defenses, leading to loss of cooling and meltdowns.

Ishibashi says he does not want his forecasts to play out again.

"I don't want to experience that again, warning about a disaster and then seeing it take place and causing so much damage," Ishibashi said at a media briefing in Tokyo on Monday.

Amid pressure from Prime Minister Shinzo Abe's government to process applications for reactor restarts to help the economy, the NRA is under pressure to give utilities a pass, Ishibashi said. That makes the watchdog less rigorous in examining the safety assessments of utilities' reactors, he said.

"Professor Ishibashi has his own opinions," but members of the NRA's committee made their own judgment, NRA Chairman Shunichi Tanaka said at a media briefing in Tokyo on Tuesday, according to a video of the briefing posted on the regulator's website. The NRA recently lost a key member during a shuffle of top personnel.

A Kyushu Electric spokesman said the company does not have a comment regarding Ishibashi's statements.

In the case of the Sendai plant, the NRA has allowed the operating company to ignore the risk of an earthquake in the tectonic slab underneath Kyushu, the seismologist said.

Kyushu Electric also did not factor in the risk from a Nankai Trough earthquake, Ishibashi said. The feared Nankai Trough quake is expected to originate in a swath of ocean south of Honshu running from the Boso Peninsula toward Shikoku. It's considered a high-risk area and has recently been constantly monitored, and played up, by the government.

"Kyushu Electric was allowed to select their own criteria for quakes that could hit the plant and they ignored several as outliers — including a Nankai one," Ishibashi said. "Taking the Nankai Trough earthquake into account is indispensable" in modeling the dangers facing the Sendai plant, he said.

In terms of impact, a Nankai Trough quake would cause tremors and ground motion that would last almost ten times as long as Kyushu Electric's estimates when it applied for its Sendai plant assessment, Ishibashi said.

The government's billing of the NRA, formed in the aftermath of the Fukushima meltdowns, as the world's most stringent nuclear regulator is simply not true, Ishibashi said. The regulator feels beholden to government policy, which is pro-nuclear and supports restarts, he said.

"The NRA certainly seems to be feeling the pressure from the current administration," Ishibashi said.

May 2, 2015

## Toxic water leaks from tank

### Radioactive water leaks from storage tank at Fukushima

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505020022>

A tiny amount of radioactive water has leaked from a storage tank at the crippled Fukushima No. 1 nuclear power plant.

Tokyo Electric Power Co., the operator of the plant, said May 1 that about 40 milliliters of water was found under a storage tank holding radiation-contaminated water. The water is believed to have leaked from the tank.

Sandbags were placed around the tank to prevent water from spreading to other areas.

A TEPCO official said a worker came across the wet patch measuring 20 centimeters square at 9:30 a.m. on May 1.

Seventy millisieverts per hour of beta ray-emitting radioactivity were detected on the surface where the water had leaked.

## After the (food) scandal

### Japan calls on Taiwan to ease up on planned food import restrictions

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505020044>

By SATOSHI UKAI/ Correspondent

TAIPEI--Japan has urged Taiwan to scrap its plan to tighten restrictions on food imports from Japan, but Taipei demanded that Tokyo first address a food-labeling scandal.

Taiwan accused food companies of falsely labeling products from nuclear-stricken Fukushima Prefecture and other places in an attempt to evade the import ban.

A Liberal Democratic Party delegation, which included Nobuo Kishi, a former vice foreign minister, met with Taiwanese President Ma Ying-jeou on May 1 and asked Ma to retract the decision to impose stricter regulations on Japanese food products.

Taiwan banned imports of food items produced in Fukushima and four other prefectures after the March 2011 Great East Japan Earthquake triggered the crisis at the Fukushima No. 1 nuclear power plant.

Tokyo had been working to get Taiwan to ease regulations when it was discovered in March that some food products from the five prefectures were imported with forged place-of-origin labels saying they were from elsewhere in Japan.

In response to the scandal, Taiwan decided to strengthen restrictions on Japanese food imports. Effective May 15, the tighter regulations will require importers to submit results of radiation level checks for certain food articles from specific areas outside the five prefectures.

According to Kishi, the latest request is in line with the intention of Prime Minister Shinzo Abe.

During the May 1 meeting, **the Japanese side argued that the false labeling issue is a "separate matter" from tightening restrictions, and said the tighter regulations have no scientific basis.**



According to the Taiwan presidential office, Ma said the priority is seeking out the truth behind the scandal and developing preventive measures. He also requested that Japan make efforts to resolve the issue.

May 5, 2015

## Over 10% of tanks have leaked

### Radioactive water found leaking from wastewater tanks at Fukushima plant

<http://mainichi.jp/english/english/newsselect/news/20150505p2a00m0na011000c.html>

A sampling inspection of tanks containing radioactive waste produced during the processing of contaminated water at the Fukushima No. 1 Nuclear Power Plant has found that over 10 percent of them have leaked.

The tanks contain sludge and wastewater produced when removing radioactive contaminants from water with the Advanced Liquid Processing System (ALPS). The plant's operator, Tokyo Electric Power Co. (TEPCO) sampled 105 of 1,354 tanks at the plant, and found that contaminated water had leaked or seeped out of 15 tanks, or about 14 percent of those that were inspected. Each tank measures about 1.5 meters in diameter and 1.9 meters in height and can hold roughly 3 tons of waste.

A TEPCO worker found water had accumulated on the ground under the tanks and on their lids during an inspection in early April. It emerged that wastewater had leaked from holes to let out gas near the tops of the tanks. TEPCO suspects that hydrogen and other gases built up in the wastewater, thereby increasing its volume and forcing it out through the gas holes.

The highest concentration of radioactive cesium in the leaked wastewater was around 9,000 becquerels per liter. The radioactivity of materials emitting beta rays, meanwhile, was particularly high, at around 3.9 million becquerels per liter.

The tanks are shielded within a concrete structure at the Fukushima No. 1 nuclear plant, and TEPCO official Isao Shirai maintains that there have been no leaks outside the plant site. The tanks were drop tested in advance, but no tests using actual wastewater were carried out. TEPCO says the leaks were "unexpected."

An official from the Secretariat of the Nuclear Regulation Authority commented, "The leaked water is the most concentrated contaminated water at the nuclear power plant. Quick countermeasures are needed." Officials will ask TEPCO to thoroughly manage the radiation exposure of workers involving in leak checking and other relevant work.

TEPCO plans to take measures to prevent further leaks, including reducing the amount of wastewater in the tanks by about 10 centimeters. At the same time, as long as ALPS continues operating, it will keep producing sludge and wastewater. As the number of tanks increases, TEPCO will have to secure space for them. It also faces the task of dealing with the waste once the tanks have reached the end of their durable life (about 20 years).



May 6, 2015

## 4.7 kilograms of cesium

### article published on the blog of Nuclear-free by 2045?

<http://nf2045.blogspot.fr/2015/05/47-kilograms-of-cesium-137.html>

#### The Trouble with Nuclear Power

**Professor Hiroaki Koide speaks at the Foreign Correspondents' Club of Japan (FCCJ), Tokyo  
April 25, 2014**

Nuclear energy expert Professor Hiroaki Koide was recently invited to speak about the Fukushima Daiichi catastrophe at the Foreign Correspondents' Club of Japan. Professor Koide is known for being one of the few dissident nuclear experts in Japan who defected from the infamous nuclear village. He has now become famous, as much as one can become famous while being largely ignored by mainstream society, for his expert critiques of the nuclear establishment and the way that the Fukushima Daiichi catastrophe has been handled.

During his talk on April 25, 2015, Professor Koide reviewed the history of the Fukushima meltdowns for the benefit of the journalists in the room who might not have been familiar with it. He emphasized how badly the public has been deceived all along about the severity of the disaster. Radiation levels inside the damaged reactors are so high that there is no way yet conceived (nor is there likely to be a way conceived in the future) for man or machine to move the lost nuclear waste to a safer location. There is no way to stop the leaking of radiation into the ocean, and there is a finite limit on how much radioactive water can be stored. He suggested the use of air or liquid metal cooling systems, but thought that eventually the Japanese authorities will concede defeat and just entomb the whole site, somehow.

The only development that gave him a small sense of relief was that the spent fuel from Unit 4 had been removed to a "less dangerous" place. Until that operation was concluded, there had been a constant danger that the damaged building containing the spent fuel would collapse in an earthquake and leave a burning heap of radioactive waste that would have forced the population of Tokyo to evacuate.

These circumstances are all familiar to people who have been following the aftermath of the catastrophe over the past four years. The unique and most interesting thing Professor Koide related was the information at the end of his talk about exactly how much Cesium 137 (according to what can be derived from TEPCO's data) was released in the meltdowns of the reactor cores and the fires in the spent fuel pools. He stated that this isotope was the one of most concern to him, even though there were many others to worry about. There was also heavy metal contamination caused by the release of non-radioactive materials in the fuel rods, but he limited his discussion to Cesium 137 because it is an abundant, long-lasting isotope (half-life of 30 years) which has a significant impact on biochemical processes.

He mentioned that the numbers tossed about when referring to the disaster are so astronomical as to be meaningless to most people. It is difficult to impress upon people the significance of peta and tera becquerels and so on. What do these mean? When should we worry? He asked rhetorically for the audience to guess how many kilograms of Cesium 137 were actually released in the catastrophe, then he

answered that, remarkably, the total was only 4.7 kilograms, of which 0.75 kg. fell on Japan. The rest drifted eastward over the ocean, or directly into it.

In mentioning these figures, Professor Koide drove home the point that it is extremely difficult for humans to conceive of the danger that radioactive materials pose relative to their size and weight. It is the enormous hazard-per-gram ratio that makes nuclear energy so easy to ignore when reactors operate normally, and so difficult to manage when they don't.

Since the catastrophe struck, communities all over northern Japan have frantically tried to "decontaminate" by scraping off topsoil and storing it in plastic bags in "temporary" storage sites. The photos of these sites, some of them stretching out for hundreds of meters, are now famous symbols of the catastrophe. As the bags of soil were full of seeds, they are now sprouting weeds and grasses, so they have effectively become new radioactive plantations partitioned meaninglessly by decomposing plastic. All this dirt was moved in a desperate attempt to collect 750 grams of a fine mist of radioactive particles spread over thousands of square kilometers.

When people say that a small soda can of uranium could give you all the energy you need for your lifetime, it is important to know that such people are exploiting your intuitive but misguided sense of how size and weight relate to danger. When it comes to the threats posed by radiation, we are led astray if we rely on our evolved instincts for judging threats in our surroundings. As Professor Koide pointed out, if a person were able to hold an amount of Cesium 137 large enough to be tangible, that person wouldn't be alive much longer.

There are some scientists on the pro-nuclear side who have made the radical claim that it is precisely these miniscule quantities of cesium that make the response to the Fukushima catastrophe an extreme over-reaction. They insist that there would be no noticeable impact on health far into the future if there were no evacuations and no attempt at decontamination. Professor Koide was asked about this in the question period after his talk and he dismissed such minimizing. He spoke with typical polite Japanese understatement, but it was clear that he was implying that these scientists should shut their mouths and stop making people doubt their sensible decision to minimize exposure to radiation as much as possible. He reminded everyone that the measures taken after the disaster were made according to laws based on the standards set by the nations that use and promote nuclear energy. He suggested that the minimizers should focus their energies on changing these laws (good luck with that, knock yourselves out, he seemed to imply), but in the meantime they should shut up and stop distracting the public with the suggestion that everyone should just suck up the extra radiation and be happy.

May 13, 2015

## **Experts say faults under Japan nuclear plant may be active**

<http://mainichi.jp/english/english/newsselect/news/20150513p2g00m0dm092000c.html>

TOKYO (Kyodo) -- Geological experts on a panel under the Nuclear Regulation Authority said Wednesday that faults running beneath a nuclear plant in central Japan may be active, clouding the prospects for resumption of its operations.

Four outside experts of the five-member panel told a meeting it is possible the fault running right under the No. 1 reactor at Hokuriku Electric Power Co.'s two-unit plant in Shika, Ishikawa Prefecture, is active.

If the regulator finalizes the judgment based on the panel's opinion, the utility would have no option but permanently shutting down that unit.

The experts also pointed out that two other faults running beneath the plant's emergency equipment could be active.

A regulatory official said the No. 2 unit could avoid a permanent shutdown, but that complex construction work would be required to greatly enhance the facility's safety before restarting it.

In quake-prone Japan, building nuclear reactors or other important facilities directly above active faults is prohibited. The issue came into the spotlight after the 2011 Fukushima meltdowns that resulted in all the country's commercial reactors coming offline by September 2013.

Panel members have "largely agreed" on the evaluation of the faults, said Akira Ishiwatari, the regulator's commissioner who heads the panel, adding he will compile a draft report and present it at the next meeting.

Hokuriku Electric maintains that the faults are not active. "We had it checked by experts when we built the No. 1 unit. I don't think there was a major oversight," Executive Vice President Yutaka Kanai told reporters.

To restart nuclear reactors, operators must pass the regulator's safety screening based on a set of new regulations adopted after the Fukushima Daiichi disaster. Hokuriku Electric has already applied for screening of the No. 2 reactor.

Amid an increase in imported fuel costs for thermal power plants in the absence of nuclear power, utilities are desperate to restart their nuclear reactors. However, many hurdles including the issue of active faults stand in the way.

A reactor at Japan Atomic Power Co.'s Tsuruga nuclear plant on the Sea of Japan coast is likely to be scrapped after a different panel concluded in March that at least one of the faults running under it could move in the future.

At least two key geological faults under Tohoku Electric Power Co.'s Higashidori plant in northeastern Japan are also believed to be active.

The situation could affect the government's plan to continue to use nuclear power even after the Fukushima crisis. It plans to cover around 20 percent of the total electricity supply with nuclear power in 2030, compared with 28.6 percent in fiscal 2010 when the Fukushima accident occurred.

Prime Minister Shinzo Abe seeks to restart nuclear reactors that have met the regulator's requirements as soon as possible, but a majority of the public remains opposed to resumption.

May 14, 2015

## Faults under Shika plants may be active

### Panel says faults under Shika nuke plant may be active

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201505140050](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201505140050)

By TOSHIO KAWADA/ Staff Writer

The nation's nuclear watchdog concluded that fault lines running underneath the Shika nuclear power plant in Ishikawa Prefecture may well be active, throwing the prospect of restarting the facility's reactors into doubt.

An expert panel of the Nuclear Regulation Authority, comprising NRA Commissioner Akira Ishiwatari and four external specialists, said May 13 the possibility of the Shika plant standing directly above active faults was very real.

But Yutaka Kanai, vice president of Hokuriku Electric Power Co., the plant operator, said: "We take issue with that conclusion."

Kanai said the utility will present its "arguments at meetings on screening for restarts."

The NRA panel plans to release a draft report of its conclusions at its next meeting. If the draft is approved, it will be the second time the nuclear watchdog has reported that fault lines directly beneath a nuclear reactor could be active, following the No. 2 reactor of Japan Atomic Power Co.'s Tsuruga plant in Fukui Prefecture.

Although the Shika plant has been taken offline after the 2011 earthquake and tsunami disaster set off the nuclear crisis in Fukushima, Hokuriku Electric has applied to the NRA for screening to restart its No. 2 reactor. The power company is also seeking to resume operations at the No. 1 reactor.

The company insists there are no active faults beneath the reactors and other key facilities on the plant site, but the expert panel said the S-1 fault line, which runs directly beneath the No. 1 reactor, as well as the S-2 and S-6 faults under cooling pipes connected to the No. 1 and No. 2 turbine buildings, may be active.

Stricter safety standards for nuclear power facilities were established after the Fukushima disaster, which ban plant operators from locating reactors and other key equipment directly atop active fault lines.

If Hokuriku Electric is unable to overturn the decision by the NRA panel, the No. 1 reactor will have to be decommissioned. Because piping is considered among key equipment under the new safety standards, the No. 2 reactor may also have to be decommissioned unless the utility relocates the pipes.

## **Shika nuclear plant may be sitting on active seismic fault: NRA panel**

<http://www.japantimes.co.jp/news/2015/05/14/national/science-health/faults-under-shika-nuclear-plant-may-be-active-experts-warn/#.VVRyDZPwmic>

Kyodo

The news that a nuclear plant on the Sea of Japan coast may have been built on at least one active seismic fault line has cast doubt on whether the plant in Shika, Ishikawa Prefecture, will ever be restarted.

Four outside experts on the five-member panel from the Nuclear Regulation Authority revealed at a meeting Wednesday that it is possible the fault running beneath the No. 1 reactor of the two-unit plant run by Hokuriku Electric Power Co. is active.

If the regulator issues a judgment reflecting that opinion, the utility would have no option but to shut down the unit permanently.

Furthermore, the panel said two other faults running beneath the plant's emergency equipment could be active, too.

A regulatory official said the No. 2 unit could avoid decommissioning but that complex construction work would be required to bolster its safety before a restart.

In quake-prone Japan, it is prohibited to build nuclear reactors or other important facilities directly on active fault lines. The issue was thrust into the public spotlight after the triple core meltdown at the

Fukushima No. 1 power plant in March 2011 that caused all of the nation's commercial reactors to be taken offline by September 2013.

Panel members have "largely agreed" on the evaluation of the faults, said NRA Commissioner Akira Ishiwatari, who heads the panel. Ishiwatari said he will compile a report on the matter and present it at the next meeting.

Hokuriku Electric maintains that the faults are not active.

"We had it checked by experts when we built the No. 1 unit. I don't think there was a major oversight," Executive Vice President Yutaka Kanai told reporters.

To restart a nuclear reactor, the utility that owns it must pass a safety screening based on new regulations adopted by the NRA, which was set up after the Fukushima crisis began. Hokuriku Electric has already requested a safety screening for the No. 2 reactor.

Amid an increase in imported fuel costs for thermal power plants in the absence of nuclear power, utilities are desperate to restart their nuclear reactors. However, many hurdles stand in the way.

A reactor at Japan Atomic Power Co.'s Tsuruga nuclear plant on the Sea of Japan coast is likely to be scrapped after a different panel concluded in March that at least one of the faults running under it could move in the future.

At least two key geological faults under Tohoku Electric Power Co.'s Higashidori plant in Tohoku are also believed to be active.

The situation could affect the government's plan to continue to use atomic power after the Fukushima crisis. It aims for reactors to account for around 20 percent of the nation's total power by 2030, compared with 28.6 percent in fiscal 2010 — when the Fukushima No. 1 disaster struck.

Prime Minister Shinzo Abe intends to restart nuclear reactors that pass the NRA's safety tests as soon as possible, but the majority of the public remains opposed.

## More evacuation orders to be lifted

### LDP eyes lifting evacuation orders for some Fukushima municipalities

<http://mainichi.jp/english/english/newsselect/news/20150514p2a00m0na009000c.html>

The ruling Liberal Democratic Party (LDP) is eyeing to lift evacuation orders in some areas near the Fukushima No. 1 Nuclear Power Plant by March 2017, affecting more than 50,000 evacuees, it has been learned.

The LDP's Headquarters for Accelerating Reconstruction after the Great East Japan Earthquake has drawn up a proposal to be submitted to the government, requesting that government-set evacuation orders be lifted in so-called "residency restriction zones" and "areas preparing for the lifting of evacuation orders." No areas in "residency restriction zones" have seen evacuation orders lifted thus far.

Because the government has not specified when residents evacuated from those areas in the aftermath of the 2011 nuclear disaster will be allowed to return to their hometowns, the proposal is likely to spark debate on the issue.

The proposal, which is a draft for the fifth recommendation for reconstruction, states that "**evacuation orders (in those areas) will be entirely lifted within six years after the nuclear accident at the latest, making it possible for residents to return home.**"

**A total of 55,000 residents will be affected by the lifting of evacuation orders -- some 23,000 in "residency restriction zones" and roughly 32,000 in "areas preparing for the lifting of evacuation orders." Annual radiation doses in the former zones are over 20 millisieverts but below 50 millisieverts, and the latter at 20 millisieverts or less.**

The proposal also requests that the government address measures to restore infrastructure and vital services and accelerate decontamination work in order to lower radiation levels in those areas at an early date. The government plans to continue financing decontamination work beyond the intensive reconstruction period, which is set to expire in March 2016.

**Meanwhile, evacuation orders for some 24,000 residents in so-called "difficult-to-return zones," where yearly radiation doses top 50 millisieverts, will be retained. The Fukushima Prefecture towns of Futaba and Okuma fall under those areas.**

In 2014, evacuation orders in part of the Fukushima Prefecture city of Tamura and the prefectural village of Kawauchi were lifted in April and October, respectively. Both areas were part of "areas preparing for the lifting of evacuation orders."

## Safety questions (Hamaoka plant)

### 7 municipalities near Hamaoka plant may not demand advance consent for restart

<http://mainichi.jp/english/english/newsselect/news/20150514p2a00m0na012000c.html>

The governments of seven municipalities within 10 to 30 kilometers of the Hamaoka Nuclear Power Plant in Omaezaki, Shizuoka Prefecture, are in the final stages of talks to decide whether to incorporate "advance consent" for restarting the nuclear station into their safety agreement with Chubu Electric Power Co., it has been learned.

Instead of insisting on requiring advance consent, to which Chubu Electric has expressed strong resistance, **the seven municipal governments have decided to demand the utility work out concrete safety measures. Therefore, talks between the municipal governments and the utility are likely to take a big step forward.**

The seven municipalities are: **the five cities of Fukuroi, Iwata, Shimada, Fujieda and Yaizu and the two towns of Yoshida and Mori.**

Together with the Shizuoka Prefectural Government, four municipalities located within 10 kilometers of the Hamaoka nuclear power station, including the Omaezaki Municipal Government, had signed a safety agreement with Chubu Electric before the 2011 Great East Japan Earthquake disasters. The agreement was accompanied by commentary saying, "When a nuclear reactor facility is set up or a change is made (to the nuclear plant), advance consent shall effectively be provided." But the Shizuoka Prefectural Government and the four municipal governments share the view with Chubu Electric that the section "does not mean advance consent for restarting (the nuclear power plant.)"

Meanwhile, the seven municipal governments do not have a safety agreement with Chubu Electric even though they are located within an Urgent Protective Action Planning Zone (UPZ) -- a zone within a 30-kilometer radius of the nuclear plant. After a series of talks aimed at signing a safety agreement, they came up with a proposal in September 2014 in which they said they would "conform to the agreement signed by the four municipal governments." At that time, views expressed by some heads of the seven local governments included: "Discussions should be held from scratch without being bound by the agreement

signed by the four municipal governments;" and "More steps should be taken than the agreement signed by the four municipal governments to incorporate advance consent for restart."

According to sources close to the Shizuoka Prefectural Government and the seven municipal governments, when asked during closed-door talks in March by Chubu Electric what was meant by "(conforming) to the agreement signed by the four municipal governments," the seven municipal governments said in reply that it meant "not going beyond the agreement by the four municipal governments." A source told the Mainichi Shimbun, "The resumption of operations involves the state's energy policy and should be separated from disaster prevention (which is handled mainly by local governments). We want to build a disaster prevention system that's integrated with that of the four cities within the 10-kilometer-radius zone."

However, even though the agreement may not include a provision for advance consent, some chiefs of the seven municipal governments are still opposed to restarting the nuclear power station. Shizuoka Gov. Heita Kawakatsu also said, "The power plant will not be operated without consent from the 11 cities and towns. Thus, the hurdle for Chubu Electric to restart the nuclear plant remains high.

Chubu Electric posted a consolidated current-account surplus in the business year ending in March 2015, its first profit in four years. But the company says that it needs to restart the Hamaoka nuclear power station in order to ensure stable management because it has continued to run up fuel costs as a result of boosting operations at its thermal power plants following the Hamaoka plant shutdown. But according to the Nuclear Regulation Authority, the safety screening of the plant's No. 4 reactor has stalled.

The reactors at the Hamaoka plant are boiling water reactors (BWR) -- the same type as those at the crippled Fukushima No. 1 Nuclear Power Plant.

The safety standards for BWRs implemented for the first time after the 2011 disaster require the installation of vents with filters that reduce the amount of radioactive substances released in the event of an accident. There has been no case of such equipment being installed in Japan, and that is one of the reasons for the prolonged safety screening process.

Furthermore, because the Hamaoka nuclear complex is situated in the assumed epicentral area of Tokai earthquakes, it is necessary to assess whether key facilities such as nuclear reactor pressure vessels can withstand temblors. Chubu Electric has also been proceeding with its plans to build wave-preventive walls (22 meters high) and doors designed to prevent the inflow of sea water as part of its measures against tsunami, and the NRA is to evaluate those facilities carefully.

Anti-volcanic measures could also come under scrutiny. After examining the effects of 12 volcanoes, including Mount Fuji, which is within a 160-kilometer radius zone, and Mount Hakone, where a volcanic eruption alert was recently raised, Chubu Electric concluded that they "do not affect facilities that are important to ensure safety." But some officials within the NRA are calling for stricter anti-volcano measures.

May 14 marks the fourth anniversary of the suspension of all operations at the Hamaoka plant.

May 15, 2015

## Taiwan tightens restrictions on Japanese food

## **Hayashi: Taiwan's measure regrettable**

[http://www3.nhk.or.jp/nhkworld/english/news/20150515\\_17.html](http://www3.nhk.or.jp/nhkworld/english/news/20150515_17.html)

Japan's agriculture minister Yoshimasa Hayashi says it is extremely regrettable that Taiwan has tightened restrictions on food imports from Japan.

Hayashi told reporters on Friday that there are no scientific grounds for the decision and he will urge Taiwan to retract the unilateral measure.

Hayashi added that Japan may file a complaint with the World Trade Organization and take other steps as well if the negotiations with Taiwan do not make sufficient progress.

## **Taiwan tightening rules on food imports from Japan**

[http://www3.nhk.or.jp/nhkworld/english/news/20150515\\_03.html](http://www3.nhk.or.jp/nhkworld/english/news/20150515_03.html)

Taiwan is tightening restrictions on food imports from Japan. It created the rules in response to the 2011 Fukushima nuclear accident.

Taiwan has banned food imports from Fukushima and 4 other Japanese prefectures since the nuclear accident.

But it emerged in March that food from the prefectures was imported to Taiwan. The news prompted consumer groups to call for stricter regulations.

Starting on Friday, Taiwan is requiring all food imported from Japan to carry certificates proving the prefecture of origin. Some food from certain Japanese areas must also pass radiation inspection.

Taiwan's health officials held a news conference on Thursday.

They claimed they will be flexible with the new rules. They added that information written on quarantine and other already-mandated documents can be used as certificates of origin.

However, Taiwan has not yet agreed with Japan on specific ways to implement the new regulations. Japan is asking Taiwan to withdraw the measures, citing a lack of scientific justification.

Japanese food is popular in Taiwan. Supermarkets and Japanese companies are concerned that if customs inspections get even tougher, the volume of Japanese food they sell may decline.

## **Ikata likely to clear screening**



## **Ikata reactor to effectively clear NRA screening**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear regulator is expected to compile a draft assessment on safety measures for a reactor at the Ikata plant in western Japan.

Completing the assessment is regarded as a major step forward in the reactor's restart.

The Nuclear Regulation Authority is to present the draft on the plant's No.3 reactor in Ehime Prefecture at its meeting on May 20th.

The NRA has been discussing for nearly 2 years whether Shikoku Electric Power's safety measures meet new government requirements set after the Fukushima Daiichi nuclear crisis.

If the commissioners find no problem with the assessment, the NRA will hear public comments for 30 days and formally approve the assessment.

The NRA is screening, or has screened, 24 reactors at 15 power plants. Ikata is the 3rd plant to make it to the assessment stage after the Sendai plant in Kagoshima Prefecture and the Takahama plant in Fukui Prefecture.

Observers say **Ikata's restart could be late this year at the earliest. It needs to get approval for equipment designs and pass onsite inspections as well as get local consent.**

## **IAEA: Can do better**

### **IAEA: Handling radioactive waste at Fukushima plant could be improved**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505150088>

REUTERS

VIENNA--The U.N. nuclear watchdog said the management of radioactive waste and contaminated water at Japan's tsunami-crippled Fukushima nuclear power plant could be improved despite good progress in cleaning up the site.

The operator of the plant said in February it had found a pool of highly contaminated water on the roof of a plant building and that it had probably leaked into the sea through a gutter when it rained.

A massive earthquake and tsunami four years ago caused meltdowns at Tokyo Electric Power Co Inc's (TEPCO) Fukushima reactors.

Some of the leaks have been dealt with to avoid a repetition of such incidents, the International Atomic Energy Agency (IAEA) said. Measures have included filling and covering of gaps, recovery of contaminated soil and treating surfaces to prevent rainwater leakages.

"While acknowledging these efforts, the IAEA experts encourage TEPCO to continue to focus on finding any other sources contaminating the channels," the agency said in a statement on May 12.

The creation in 2014 of a new branch of TEPCO, called Fukushima Daiichi Decontamination and Decommissioning Engineering Company (FDEC), was a good step to define clear responsibility for the clear-up, the IAEA said.

Still, there is room for improvement in how the body handles radioactive waste, for example by more complete waste characterization and packaging, the U.N. watchdog added.

"FDEC could better employ long-term radioactive waste management principles (beyond the segregation, relocation and dose reduction/shielding currently performed)," the agency said.

"While recognizing the usefulness of the large number of water treatment systems deployed by TEPCO for decontaminating and thereby ensuring highly radioactive water ... is not inappropriately released..., the IAEA team also notes that currently not all of these systems are operating to their full design capacity and performance."

The IAEA will send a team to Japan this month to collect water samples from the sea near the Fukushima plant to help Japanese authorities with radioactive data collection and analysis.

In a 240-page report released to the agency's member states on May 14, IAEA chief Yukiya Amano said Japan had not been sufficiently prepared for the 2011 accident, which triggered action to improve safety at nuclear plants across the globe.

"Responsibilities were divided among a number of bodies and it was not always clear where authority lay," Amano said of Japan. "There were also certain weaknesses in plant design, in emergency preparedness and response arrangements and in planning for the management of a severe accident."

## 5.1 quake hits Fukushima

### Magnitude 5.1 quake shakes Fukushima

<http://mainichi.jp/english/english/newsselect/news/20150515p2g00m0dm065000c.html>

TOKYO (Kyodo) -- An earthquake with an estimated magnitude of 5.1 jolted Fukushima Prefecture and other areas in northeastern Japan early Friday afternoon, the Japan Meteorological Agency said. No tsunami warning was issued.

The quake occurred around 12:30 p.m. off the coast of Fukushima at a depth of about 50 kilometers. It registered 4 on the Japanese seismic intensity scale of 7 in coastal areas facing the Pacific.

Tokyo Electric Power Co. said its Fukushima Daiichi and Fukushima Daini nuclear power plants were unaffected by the quake.

May 17, 2015

## Safety (food) concerns easing within Fukushima Pref.

### Despite rumors, Fukushima food safety concerns ease inside prefecture

<http://www.japantimes.co.jp/news/2015/05/17/national/despite-rumors-fukushima-food-safety-concerns-ease-inside-prefecture/#.VVi0VZPwmid>

## Fukushima Minpo

Some 78.1 percent of Fukushima residents bought local food goods in fiscal 2014 rather than produce harvested in other prefectures, up about 10 percentage points from the year before, a survey conducted by the prefectural consumers' group association shows.

The survey indicates that safety concerns among residents about food harvested in the prefecture are easing despite persistent rumors since the nuclear disaster at the Fukushima No. 1 nuclear plant.

The survey also showed that more than 80 percent of those surveyed said they had purchased processed food made from Fukushima ingredients.

Despite this bump inside the prefecture, **consumers outside have tended to avoid food produced in Fukushima, calling for continued safety screening.**

The questionnaire was distributed to 1,100 people, including some members of the consumers' group, of whom 1,045, or 95 percent, responded. Respondents came from the cities and towns of Fukushima, Aizuwakamatsu, Koriyama, Iwaki, Shirakawa, Sukagawa, Soma, Nihonmatsu, Minamisoma, Date, Motomiya, Koori, Kawamata, Minamiaizu, Aizumisato, Nishigo, Izumizaki and Namie.

Of the total, 237 were male and 808 were female. Around 28.4 percent were in the 60s, while those in their 20s to 40s comprised 22.1 percent.

When asked which local produce they most often purchased, 63.6 percent said they bought goods harvested near their residences, while 14.5 percent said they bought produce from inside the prefecture but not harvested near their home, the survey said.

Another 12.7 percent said they purchased produce harvested in neighboring prefectures, while 8.0 percent said they bought domestically harvested products that were not from Fukushima or neighboring prefectures, the survey showed.

Those who said they most often purchased overseas produce came to 0.4 percent, putting the number of those surveyed who mainly purchased produce from outside of Fukushima at more than 20 percent.

Respondents who most frequently purchased produce harvested near their residence shot up 14.4 percentage points from the year before. In contrast, those who usually bought food from neighboring prefectures fell 5.4 percentage points. Those who bought food produced domestically but not in Fukushima or neighboring prefectures decreased 5.7 percentage points, the poll showed.

According to the survey, 43.9 percent said the reason they bought processed food using Fukushima produce was because they believed it safe, while 27.2 percent cited its taste and 16.7 percent said they were supporting local industry. Those who said they rarely buy such produce stood at 8.9 percent.

Although the association said it didn't have an accurate analysis of each age bracket's consumer behavior, those in their 20s to 40s tended to buy products from outside the prefecture in fiscal 2012, when the first survey was conducted.

However, in the latest survey more of those in the same age bracket said they were purchasing Fukushima produce.

"Although more people in each age category seem to feel that (local Fukushima products) are safe, there are people who still avoid them," said Yoshiko Tasaki, 59, the association's executive. "We're still seeing bipolar tendencies."

The survey also covered Fukushima residents' thoughts on the risks of low-level radiation exposure.

To compare the mindset of consumers in Fukushima and those outside the prefecture, the association asked the same questions as in a nationwide Consumer Affairs Agency's questionnaire.

When asked their thoughts on the risks of exposure to radiation levels so low that health effects weren't detected, 18.1 percent still said it is unacceptable even if it is within approved limits, down 12.9 percentage points from the previous year.

The corresponding figure in the Consumer Affairs Agency survey was 21.0 percent, up 2.1 percentage points, demonstrating a gap between those inside and outside the prefecture.

In fiscal 2015, which began April 1, one of the Fukushima Prefectural Government's top priorities has been to dispel harmful rumors about local food products by promoting the safety of its agricultural produce at a variety of events.

"At present, people outside the prefecture and those overseas still (have concerns over the safety of foods in Fukushima)," said an official in charge of promoting its products at the prefectural office. "We'd like to believe that the best way to tackle the issue and promote our products is by providing accurate information (to consumers)."

*This section, appearing every third Monday, focuses on topics and issues covered by the Fukushima Minpo, the largest newspaper in Fukushima Prefecture. The original article was published May 2.*

May 18, 2015

## Rice (for sale?) grown in Namie

### Rice for sale test-grown near Fukushima plant

[http://www3.nhk.or.jp/nhkworld/english/news/20150518\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20150518_32.html)

An experiment started on Monday to grow rice for sale in paddies in the town of Namie near the disabled Fukushima nuclear power plant.

All residents of Namie continue their evacuation from the town since the nuclear accident in March of 2011.

Seedlings were planted by about 20 people, including local farmers and Namie Mayor Tamotsu Baba, in paddies in a district of Sakata. The area is still designated as an evacuation zone.

Rice that was not for shipment was grown in the same paddies last year for the first time since the nuclear accident. Since the radiation levels of the rice harvested from the paddies were within permissible levels, the rice was cooked and served at cafeterias in government buildings in Tokyo.

Namie Town officials say rice will be planted in 1.3 hectares of land this year. If the radioactivity level of the expected harvest is below permissible levels, the town, in cooperation with an agricultural cooperative, will consider selling the rice.

The initiative comes as town officials aim to have the government lift its evacuation order in March of 2017.

**They hope the local farmers can begin growing full crops by then, and that this will lead to the residents returning home.**

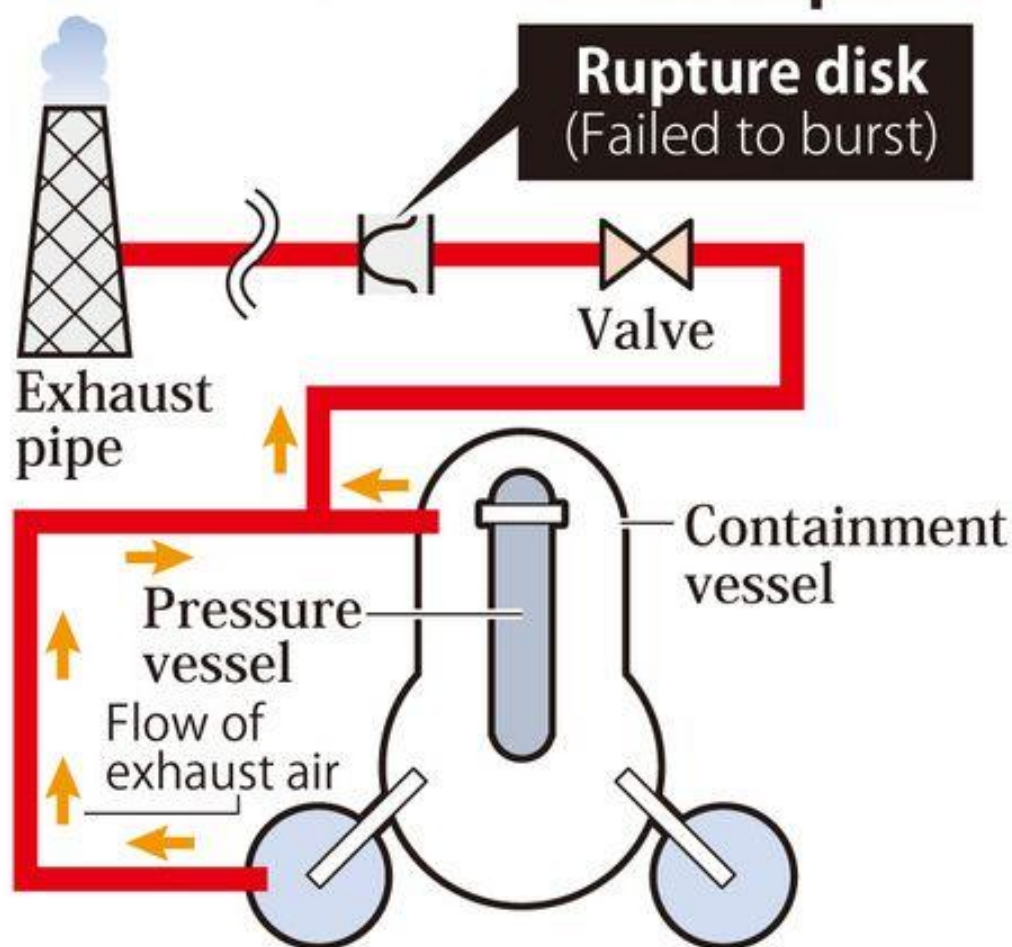
Mayor Baba said he believes accelerated efforts to decontaminate Namie will lead to a resumption of the local farming industry. He expressed his readiness to prepare to sell rice this year, despite rumors and consumer worries about agricultural products from Fukushima.

May 20, 2015

### Faulty part may have caused Fukushima nuke plant venting failure

<http://mainichi.jp/english/english/newsselect/news/20150520p2a00m0na011000c.html>

## Venting at No. 2 reactor at Fukushima No. 1 nuclear plant



Venting of the No. 2 reactor at the Fukushima No. 1 Nuclear Power Plant may have failed due to a part inside the pipes failing to operate, it was learned from the results of an investigation by Tokyo Electric Power Co. (TEPCO) on May 19.

During the March 2011 disaster at the Fukushima plant, the No. 2 reactor no longer had power for its cooling system and pressure inside it rose to abnormally high levels. Plant operator TEPCO attempted to vent the reactor to lower the pressure, but the venting did not go smoothly. The company has been investigating what went wrong with the venting in order to clear up the cause of the disaster.

The part that may have failed to operate was a "rupture disk," located inside a pipe leading from the nuclear reactor's containment vessel to an exhaust pipe. Meant to keep radiation from leaking outside, the disk is supposed to break after a certain level of pressure is applied to it. However, in its investigation TEPCO found no evidence of radioactive contamination inside the pipe around the rupture disk, suggesting that the disk did not rupture and the vented gas was trapped in front of it.

Radioactive gas is thought to have leaked directly from the No. 2 reactor's containment vessel, and it is estimated as having leaked the most radiation out of the No. 1 through 3 reactors.

## **More Fukushima disaster findings revealed**

[http://www3.nhk.or.jp/nhkworld/english/news/20150520\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20150520_20.html)

Tokyo Electric Power Company says it is highly likely it had failed to vent a vessel containing one of the reactors at its Fukushima Daiichi plant in the days after the March 2011 disaster.

TEPCO attempted to vent the Number 2 reactor container to release water vapor and radioactive materials and prevent it from being damaged.

The reactor suffered damage 4 days after the accident, as the pressure inside did not drop. The damage is thought to have caused the release of a massive amount of radioactive materials, forcing most plant workers to temporarily evacuate.

TEPCO has been investigating the accident, focusing on dozens of points that had remained unconfirmed. The finding on the venting of the Number 2 reactor is one of the 4 points the utility revealed on Wednesday.

TEPCO now says the venting procedure may have failed because in its investigation no high levels of radiation were detected in piping connected to a device called a "rupture disk". Water vapor and radioactive materials were to pass through the disk after venting.

This was the first time for the likelihood of the venting having failed to be substantiated by the actual situation at the site.

TEPCO says it will continue to investigate how the radioactive release occurred at the Number 2 reactor.

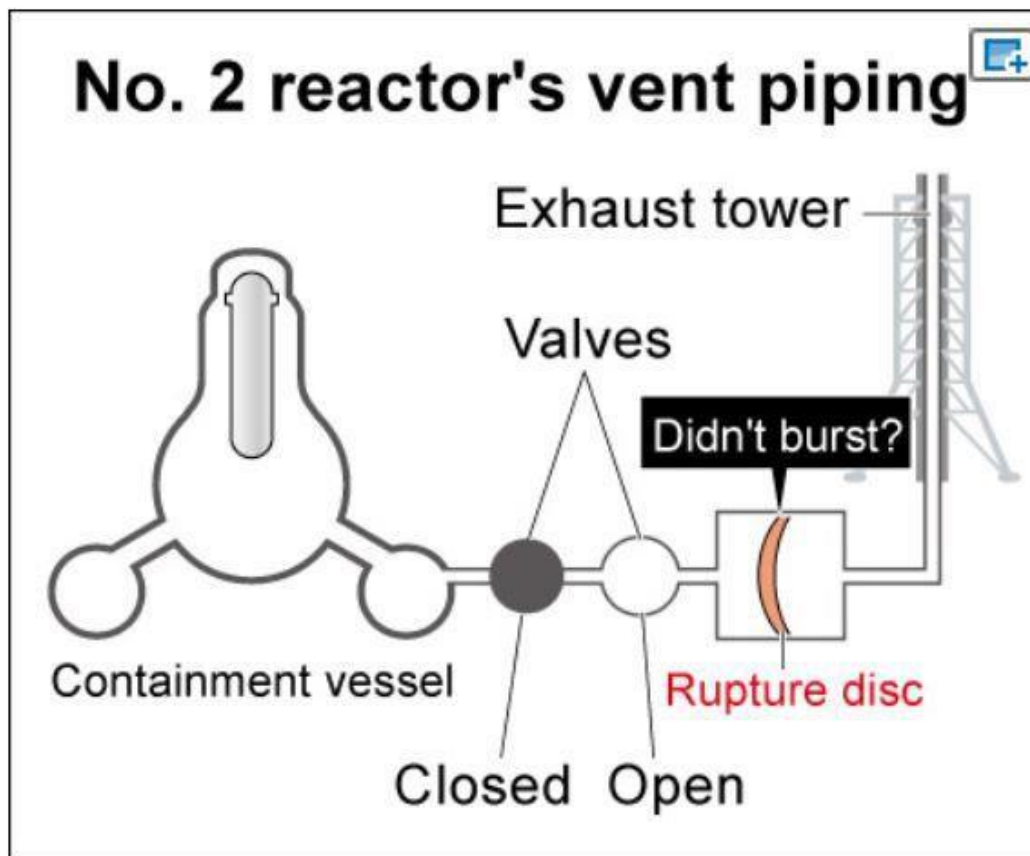
It also says it will continue on-site investigations and find out the details of the situation more closely, and use the findings to secure the safe decommissioning of the reactors.

May 21, 2015

## Venting system apparently failed

### TEPCO robot finds Fukushima No. 2 reactor pressure venting system failure

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505210037>



The Asahi Shimbun

By MASANOBU HIGASHIYAMA/ Staff Writer

The venting system designed to release pressure inside the containment vessel of the No. 2 reactor at the Fukushima No. 1 nuclear power plant likely failed during the 2011 disaster, the operator of the facility said May 20.

The discovery was made by a robot deployed last October by Tokyo Electric Power Co. to a room in the plant where the venting pipes from the reactor pass.



The magnitude-9.0 Great East Japan Earthquake that triggered towering tsunami struck on March 11. On March 13 and 14, as the pressure inside the No. 2 reactor was rising, workers at the plant opened valves in its venting system. When the valves are opened, the pressure is supposed to rupture a special disc farther down the pipes that allows it to vent.

TEPCO, until now, was never able to confirm whether the effort was successful.

The robot revealed that the radiation levels around the rupture disc were relatively low, between 0.08 and 0.30 millisievert per hour. Similarly, radiation levels around the valve near the containment vessel were also low, between 0.15 and 0.70 millisievert per hour.

However, a significant amount of radioactive material was found to have been directly released from the damaged containment vessel.

By contrast, strong radiation levels higher than 10 sieverts per hour were detected in areas around the exhaust tower where the pipes of the venting systems for both the No. 1 and No. 2 reactors release their pressure. The readings confirm that the No. 1 reactor's venting system performed as designed.

TEPCO believes that the pressure inside the containment vessel of the No. 2 reactor was not high enough to break the rupture disc when the workers opened the valves, thus the pressure never exited through the exhaust tower.

The company suspects the hydrogen explosion at the No. 3 reactor building caused some of the valves in the No. 2 reactor to close, causing the failure.

## Concerns about contaminated food

### Japan food exports to Taiwan contain cesium

<http://www.beyondnuclear.org/food/2015/5/21/japan-food-exports-to-taiwan-contain-cesium.html>

In the wake of the continuing Fukushima catastrophe, countries such as Korea and China are concerned that contaminated food is being exported from Japan. In a recent report by SimplyInfo.org, data from Taiwan showing food imports (primarily green tea) from Japan have contained radioactive cesium levels below Taiwan's limit of 370 Bq/kg, but above Japan's limit of 100 Bq/kg. The monitoring program in Taiwan is spot-checking these imports, so this contaminated tea was discovered in only a fraction of food coming from Japan, meaning additionally contaminated food could have been missed. In addition, Taiwan had already banned food from areas in Japan considered most contaminated, so this food was imported from areas in Japan considered "safe". Taiwan tested teas that were harvested after the Fukushima catastrophe began. However, in 2011 and 2012, the US Food Drug Administration only tested tea varieties that would have been harvested in 2010, thereby having escaped contamination, making the FDA tea tests completely meaningless.

This unsettling discovery demonstrates that **people in other countries are being sold food that is contaminated above Japan's allowable limit, but below that of the receiving country**—a concern that has been expressed time-and-again by Fukushima Fallout Awareness Network (FFAN) of which Beyond Nuclear is a coalition partner. While the allowable limit of radioactive cesium in Japan is 100 Bq/kg, in Taiwan it is 370 Bq/kg, and in the U.S. it is 1200 Bq/kg with **no real explanation as to why, say, a pregnant woman in the U.S. should be allowed to ingest 12 times the radioactive poison of a pregnant woman in Japan.** These inconsistent limits may not make biological sense, but they do make



sense when taken in context of this statement by ICRP (International Commission on Radiological Protection--the body which generates statements governments rely on to set radiation exposure standards.) **"There may be a situation where a sustainable agricultural economy is not possible without placing contaminated food on the market. As such foods will be subject to market forces, this will necessitate an effective communication strategy to overcome the negative reactions from consumers outside the affected areas."** This is the price of the continued use and catastrophic meltdowns of nuclear power.

Japan has filed a complaint with the WTO over Korean Fukushima-related import bans and additional testing requirements, demonstrating that **countries trying to protect themselves from contaminated food could be facing international adjudication through the WTO.** Japan told the WTO in October 2014 "more than 99 percent of food items were below standard limits, and strict measures prevented the sale or export of any food exceeding those limits." But since **measurement of food is so spotty**, both from the importer and exporter, a statement like this is not only meaningless, but deceptive. Further, **if every country's contamination limits are different, in reality, there are no standard limits, no matter what the WTO or Japan contends.**

If the Trans-Pacific Partnership is approved, these penalties could get a lot worse (link to Part 1 of a 5 part FFAN series on the TPP and contaminated food from Japan) and could include taxpayer compensation for corporate lost revenue due to such disputes.

But the radioisotope cesium isn't the only concern. **There is also strontium.** Strontium-90 is much more difficult to measure than cesium-137. To avoid this inconvenience, strontium is often assumed or calculated to be in a ratio with cesium-137 such that a certain amount of measurable cesium would have a known accompanying smaller amount of strontium-90. Originally for contamination in Japan, strontium content was thought to be 10% of whatever the cesium-137 content was. However, after testing food in Japan, researchers have discovered that the initial ratio of strontium to cesium-137 is *more than two times* the amount of cesium-137. More importantly, it also means that the various country limits set for radioactive cesium in food may no longer protect from the increased health impact of the strontium-90 that may be lurking in imports from Japan.

May 23, 2015

## Tanks without vents: Risk of hydrogen explosion

### Risk of hydrogen explosion from leaking containers at Fukushima plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505230059>



Fukushima Governor Masao Uchibori, right, is briefed on the ALPS system that removes radioactive substances from contaminated water at the Fukushima No. 1 nuclear power plant in November. (Pool)

By HIROMI KUMAI/ Staff Writer

Inspections of containers holding contaminated water at the Fukushima No. 1 nuclear power plant found that at least 10 percent have leaks, which could trigger a hydrogen explosion.

Tokyo Electric Power Co., the plant's operator, reported its findings at a meeting with a study group from the Nuclear Regulation Authority on May 22. It said no radioactive water was found to have escaped outside the concrete structures that encase the containers.

According to TEPCO, there were about 1,300 such containers at the plant as of May 20.

They store waste water from the ALPS (advanced liquid processing system) equipment that removes radioactive substances from contaminated water.

The containers, which are made of polyethylene, are 1.8 meters high and have diameters of 1.5 meters.

The first leak was discovered in a lid on April 2.

TEPCO began inspecting others to see if they had similar problems. Of the 278 it had examined by May 20, it found 26 had some sort of leak or were bleeding from their lids.

The operator said the leaks and bleeding were likely caused by hydrogen and other types of gases that resulted from the water's exposure to high levels of radiation.

Such gases appear to have accumulated in sediment at the bottom of the containers, expanding the volume of the liquid.

An NRA official said the accumulating hydrogen poses a potential danger.

“If the concentration level is high, a spark caused by static electricity could cause a container to explode,” the official said.

Although all the lids of the containers were supposed to be fitted with pressure-release valves to allow gasses to escape, TEPCO’s survey found that one did not have the mechanism.

Further review of the delivery records for the containers showed there may be as many as 333 that are also defective, a TEPCO official said.

## **Container for Fukushima waste found without gas venting holes**

<http://mainichi.jp/english/english/newsselect/news/20150523p2a00m0na015000c.html>

Tokyo Electric Power Co. (TEPCO) revealed on May 22 that one of its containers for waste liquid remaining after the processing of contaminated water at the Fukushima No. 1 Nuclear Power Plant did not have the necessary holes in its lid for venting out gas.

A total of 305 containers are being used without having been checked for venting holes. TEPCO says it will quickly inspect all of the containers.

The containers hold sludge and other waste liquids containing radioactive materials that remain after contaminated water is put through the Advanced Liquid Processing System (ALPS). The waste produces gasses like hydrogen, so as a safety measure the Nuclear Regulation Authority had asked TEPCO to create the holes.

In early April, containers were found to be leaking radioactive waste liquids through the venting holes.

Later in the month, a company in a cooperative relationship with TEPCO was inspecting the containers when it discovered the container without the venting holes. Out of the approximately 1,400 containers, 334 -- including ones that are not being used yet -- have not yet been checked for venting holes.

TEPCO has speculated that the work to create the holes was skipped over at a factory in the United States.

May 25, 2015

## **Simply not safe enough: No escape route**

### **Editorial: Comprehensive evacuation plans needed ahead of nuke reactor restarts**

<http://mainichi.jp/english/english/perspectives/news/20150525p2a00m0na015000c.html>

Shikoku Electric Power Co.'s Ikata Nuclear Power Plant stands at the base of the Sadamisaki Peninsula, a thin finger of land pointing southwest from the island of Shikoku toward Kyushu. Though the plant recently passed Nuclear Regulation Authority (NRA) safety inspections, opening the way for reactor restarts, its very location is a serious cause for worry. Namely, **everyone living to the west of the plant on the Sadamisaki Peninsula could find themselves without an overland escape route should there be a nuclear accident at Ikata.**

The Fukushima No. 1 nuclear plant meltdowns, triggered by the March 2011 Great East Japan Earthquake and tsunami, joined those two natural calamities to produce a three-headed disaster hydra. The nuclear accident response plans drawn up by Ikata plant host Ehime Prefecture and seven nearby municipalities fell outside the scope of the NRA's inspections, and it would be difficult to say they could cope with the kind of multi-disaster scenario seen on 3.11. If the process to bring the Ikata reactors back online goes ahead, it could threaten the safety of the people living close by.

Shikoku Electric submitted an application to the NRA for safety inspections of the Ikata plant's No. 3 reactor in July 2013 -- the same month that new NRA safety standards went into force. The focus of the inspections was the relative likelihood of an earthquake.

The Median Tectonic Line, one of Japan's major active fault zones, runs roughly parallel to the Sadamisaki Peninsula, in waters about 8 kilometers from the Ikata plant. There are also fears that Shikoku could be hit very hard by a major Nankai Trough quake.

At first, Shikoku Electric based its disaster preparedness plan for a hypothetical quake on a 54-kilometer stretch of the Median Tectonic Line in the waters off the nuclear station, but the NRA told the utility to rejig its calculations with a greater emphasis on safety. Shikoku Electric complied, modeling shifts in 480 kilometers of interconnected faults stretching all the way to Kyushu. The estimated shaking from a quake was also revised up from 570 gal (a unit of acceleration) to 650 gal, while the maximum height of a hypothetical tsunami was boosted from about 4 meters to 8.12 meters. The No. 3 reactor passed the NRA inspection under these more stringent conditions.

Some 5,000 people live between the Ikata nuclear plant and the westernmost tip of the Sadamisaki Peninsula. Under Ehime Prefectural and other local government contingency planning, if there was a nuclear accident at the plant, every one of those 5,000 people would be directed to evacuate east past the plant, theoretically before any radioactive substances had escaped. That is, if the accident got very bad very fast and radioactive materials escaped before the evacuation, the residents would see their eastern escape route cut, and would have to be rescued by sea or air.

If, however, it was a major earthquake that caused this accident, tsunami damage could prevent any evacuation by sea. If we added bad weather to this scenario, escape by plane and helicopter would also become problematic. Concerned residents have apparently been voicing their worries to the Ikata Town Hall.

It is the responsibility of local governments to set evacuation plans in case of a nuclear accident. The central government, meanwhile, has pledged to "give full support" to these plans.

Prime Minister Shinzo Abe has said many times that he will green-light the restarts of reactors that pass NRA safety inspections. That being the case, **creating evacuation plans that really do guarantee the safety of local residents should ultimately be the central government's responsibility.**

However, **if this responsibility is left in the hands of local governments, we cannot support moving ahead with reactor restarts.**

**May 26, 2015**

**TEPCO finished with toxic water?**

## TEPCO to finish processing highly contaminated water by month's end

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201505260041>



Equipment to remove radioactive substances from contaminated water stored at the Fukushima No. 1 nuclear power plant (Pool)

By MASANOBU HIGASHIYAMA/ Staff Writer

IWAKI, Fukushima Prefecture--Tokyo Electric Power Co. said it will finish processing highly radioactive water stored in tanks at the Fukushima No. 1 nuclear power plant by the end of the month.

**The plant operator said the volume of water containing tens of millions to hundreds of millions of becquerels of radioactive substances per liter had been reduced to 8,872 tons by May 21.**

At one point, more than 360,000 tons of highly contaminated water was stored in tanks on the premises of the crippled facility.

In March, TEPCO said it would not finish processing all the highly radioactive water by the end of May. But it now says it will be able to complete treatment of 20,000 tons of salty radioactive water generated when reactor cores were cooled with seawater, a factor TEPCO cited as the key reason for the delay in processing work.

Finishing the work will lower the risk of radioactive substances on the plant site from leaking. But **the treated water still contains some radioactive materials, and TEPCO has yet to decide how to handle the processed water.**



## No escape route for 200,000 people

### Over 2,300 settlements around nuke plants face isolation if earthquake hits

<http://mainichi.jp/english/english/newsselect/news/20150525p2a00m0na017000c.html>

More than 2,300 settlements within 30 kilometers from nuclear power plants in Japan are feared to be isolated in the event of a major earthquake and other disasters, affecting some 200,000 residents, it has been learned.

According to the documents compiled by the Cabinet Office, there are a total of 2,318 settlements that are feared to be isolated due to quake-triggered landslides and other factors in municipalities within 30 kilometers of nuclear plants that are required to draw up evacuation plans for nuclear accidents.

While nuclear disasters are feared to be triggered by other calamities such as massive earthquakes, 80 percent of those settlements don't have space for helipads -- raising fears for residents being trapped there. "Local governments should work out evacuation plans with complex disasters in mind," said an expert.

In the wake of the 2004 Niigata Chuetsu Earthquake, in which a large number of settlements were isolated, the Cabinet Office began surveys on the number of communities vulnerable to such isolation due to shutdowns of road and sea traffic following quake, tsunami, wind or flood damage, as well as what countermeasures are in place.

In October 2014, the Cabinet Office released survey results that showed there were a total of 19,160 such settlements in mountainous areas and along coasts across the country. The Mainichi Shimbun requested the disclosure of the names of municipalities hosting those settlements and looked into which municipalities fall within 30 kilometers from nuclear plants and are required to map out evacuation plans under the Basic Act on Disaster Control Measures.

As a result, 93 municipalities -- about 70 percent of the 135 municipalities in 21 prefectures that lie within 30 kilometers from nuclear power stations -- hosted the 2,318 settlements that are feared to be isolated. Among the 207,177 residents in those communities, 9,345 were known to require assistance for evacuation due to old age, disabilities and other reasons.

The government-set guidelines for nuclear emergency responses call for either evacuation or staying indoors in areas within 30 kilometers of nuclear plants in the event of a nuclear disaster depending on the diffusion status of radioactive materials. However, 1,876 of those potentially isolated settlements do not even have spaces that can serve as helipads because the hamlets are situated on slopes or are concentrated on narrow flatland.

Furthermore, there are 1,461 settlements that are not equipped with water reserves at public halls and other shelters that could host evacuees and 1,456 settlements that are without food reserves in the event a nuclear disaster requires residents to stay indoors. Together with settlements for which there were no responses to the survey, more than 90 percent of hamlets were without water or food reserves, respectively.

Among the 93 municipalities that host the potentially isolated 2,318 settlements, 70 percent -- or 67 municipalities -- have mapped out nuclear disaster evacuation plans. With regards to why anti-isolation measures are lacking despite the relatively advanced nuclear evacuation plans in these municipalities, an official with the Takahama Municipal Government in Fukui Prefecture said, "When it comes to evacuating

residents in broader areas using helicopters, we will need help from the national and prefectural governments. There are limits to what the town office can do about it on its own."

The town of Takahama hosts Kansai Electric Power Co.'s Takahama nuclear plant and has drawn up its own nuclear evacuation plan. An official with the Onagawa Municipal Government in Miyagi Prefecture said, "In order to develop and improve shelters and helipads, we will need to receive financial aid from the national and prefectural governments." The town of Onagawa is home to Tohoku Electric Power Co.'s Onagawa nuclear plant and is in the process of formulating a nuclear evacuation plan.

An official in charge of nuclear disaster management at the Cabinet Office commented, "We are aware that possible isolation of communities caused by complex disasters is feared at each nuclear plant. We will look into measures to be taken in the respective regions."

May 29, 2015

## Volcano erupts in Kagoshima Pref.

### Japanese island to be evacuated after volcano erupts

TOKYO | By Elaine Lies

A video grab from the Japan Meteorological Agency's live camera image shows an eruption of Mount Shindake on Kuchinoerabujima island, Kagoshima Prefecture, southwestern Japan, May 29, 2015.

Reuters/Japan Meteorological Agency/Handout via Reuters

A volcano on the remote southern Japanese island of Kuchinoerabujima erupted suddenly on Friday, blasting plumes of black smoke high into the sky, prompting authorities to start evacuating the island and airlines to re-route flights.

A pyroclastic flow of super-heated gas and rock flowed down the side of Mount Shindake and reached the ocean after the mountain's "explosive" eruption, but officials said there was no danger to human life.

"There was a huge bang and black smoke rose up immediately," Nobuaki Hayashi, an island official, told NHK television, adding that residents were gathering to await evacuation.

One 72-year-old man suffered burns to his face after being caught in the pyroclastic flow, but there were no reports of other injuries among the island's 137 residents, whose only access to the outside world is by boat.

Watchful residents gathered on the roof of an evacuation centre, its parking lot packed with cars, as the peak continued to spew out smoke and ash. Ash blanketed part of the mountain's lower slopes and fell on the main harbour, turning it grey.

Smoke billowed some 9,000 metres into the sky and officials warned of the risk of continuing, possibly large-scale eruptions, calling for "extreme caution".

Japan's All Nippon Airways said it would divert some flights to Okinawa and Southeast Asia as a precaution, but didn't plan to cancel any. Japan Airlines (JAL) said it did not have any plans to change any of its flights.

A ferry from Yakushima, the closest neighbouring island about one hour sail east, had arrived and aimed to evacuate residents around 3:00 p.m. (0600 GMT), said Tatsuya Terada, a government official on Yakushima.

"We will need to verify safety conditions and check lists of names, but that's currently the plan," he said. A Coast Guard ship was standing by off the island.

Kuchinoerabujima island is about 130 km (70 miles) south of Japan's southernmost main island Kyushu, and roughly 1,000 km (620 miles) southwest of Tokyo.

**It was not immediately clear if the eruption would affect the restart of Kyushu Electric Power's Sendai nuclear plant, which on Wednesday cleared the last step of the nuclear regulator's stringent safety hurdles introduced after the Fukushima Daiichi disaster in 2011.** [ID: nL3N0YI1Q4]

The company said an internal analysis showed the erupting volcano posed no risk to the Sendai plant on Kyushu island, and volcanologists agreed.

The island has been the site of several previous eruptions, including one in 1933 that killed several people.

Mount Shindake erupted last summer and the area where that pyroclastic flow occurred has been off limits since then.

Japan is one of the world's most seismically active nations and there has been an upsurge in volcanic activity in recent weeks, which volcanologists said may have been ushered in by the massive March 11, 2011 earthquake.

In September 2014, 63 people were killed when Mount Ontake in central Japan erupted without warning while packed with hikers.

(Additional reporting by Tim Kelly, Osamu Tsukimori Kentaro Hamada and Kaori Kaneko; Editing by Chang-Ran Kim and Michael Perry)

## **Radioactive water leaks at Fukushima Daiichi**

[http://www3.nhk.or.jp/nhkworld/english/news/20150529\\_41.html](http://www3.nhk.or.jp/nhkworld/english/news/20150529_41.html)

The operator of the crippled Fukushima Daiichi nuclear plant says workers have found a leak of comparatively highly radioactive water at the plant's site. It says the water flowed into the plant's port.

Tokyo Electric Power Company says the contaminated water was leaking from a hose connecting a wastewater tank and a building at the plant.

The hose had a crack about 1 centimeter long. The contaminated water was produced in a process to clean up rainwater tainted by radioactive materials at the plant.

Utility officials said the leaked water flowed into a nearby drainage channel and into the port.

They said they detected about 1,200 becquerels per liter of beta ray-emitting substances from water taken from the channel on Thursday. That figure was 40 times the level the previous day.

They said the figure rose to a maximum of 1,400 becquerels on Friday. The officials believe the leakage continued over the two days.



The company says **concerns were raised about the hoses' durability**. It has been replacing them.

Authorities in Fukushima Prefecture have urged the company to conduct an investigation to identify the cause of the leak. They say the company should take thorough measures to prevent a recurrence.

May 30, 2015

## Record-high radioactivity in port

### Record levels of radioactivity in plant's port

[http://www3.nhk.or.jp/nhkworld/english/news/20150530\\_09.html](http://www3.nhk.or.jp/nhkworld/english/news/20150530_09.html)

The operator of the damaged Fukushima Daiichi nuclear plant says it has found record-high levels of radioactive water in the facility's port. It says the high levels are due to a leak of wastewater.

Tokyo Electric Power Company officials said on Friday that **contaminated water leaked from a crack in a hose connecting a wastewater tank to a building at the plant**.

**They later detected about 22,000 becquerels of beta ray-emitting substances per liter of water in a nearby drainage ditch. The ditch is in the upper part of a drainage channel.**

The utility also found the density of radioactive materials in the channel was around 6,600 becquerels per liter. That's more than 200 times higher than the figure recorded on Wednesday.

TEPCO officials took samples of seawater from 4 locations in the port, where the leaked water reached via the drainage channel. They detected **between 190 and 320 becquerels of radioactive substances per liter. The figure is the highest ever recorded in the port.**

Utility officials say the leak stopped after they halted the flow of water, and that it has not affected waters in the Pacific Ocean outside the port.

TEPCO workers are trying to collect water from the drainage channel to prevent it from reaching the ocean.

## 8.5 quake jolts eastern Japan

### Magnitude 8.5 quake strikes off eastern Japan, no immediate reports of damage

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201505300062](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201505300062)

REUTERS

A magnitude 8.5 earthquake struck off the east coast of Japan on May 30, shaking buildings in Tokyo but with no immediate reports of damage, a Japanese broadcaster said.

There was no danger of tsunami, it added.

The earthquake, centred off the Ogasawara islands south of Tokyo, was felt widely in Japan but occurred at a depth of 590 km.

Tokyo Electric Power Co said there were no abnormalities at the crippled Fukushima nuclear power plant following the quake. The runways at Tokyo's Narita airport were operating normally but the high-speed bullet train service between Tokyo and Osaka was halted due to a power outage, the broadcaster said.

### **M8.5 quake rocks Ogasawara Islands, jolting Tokyo and wider Kanto area**

<http://www.japantimes.co.jp/news/2015/05/30/national/m8-5-quake-rocks-ogasawara-islands-jolting-tokyo-and-wider-kanto-area/#.VWm8KUbwmos>

Kyodo, Staff Report

A magnitude-8.5 earthquake struck west of the Ogasawara Islands south of Tokyo on Saturday evening, jolting wide parts of the Kanto region and causing moderate tremors in many parts of the archipelago, the Meteorological Agency said.

No tsunami warning was issued by the agency, and no injuries or major damage were immediately reported by local authorities in the Ogasawara chain.

The quake, which measured upper-5 on the Japanese seismic intensity scale of 7, occurred at 8:24 p.m. at a depth of 590 km below the seabed, the agency said. Given the depth of the epicenter, slow lateral vibrations continued for about a minute in Tokyo.

On Chichijima Island in the Ogasawara chain, communities experienced powerful jolts. NHK quoted Yoshiyuki Sasamoto, who runs a local inn, as saying things started to fall from shelves as the tremors continued.

Following the quake, Tokyo Electric Power Co. said no damage had been reported at its Fukushima No. 1 and No. 2 nuclear power stations.

East Japan Railway Co. suspended operations on the Tokaido Shinkansen Line as well as the Yamanote Line and other rail routes in Tokyo for safety checks. NHK footage showed many people stranded at major hub stations, including Shibuya, Shinjuku and Ikebukuro.

Some lines later resumed operation after safety was confirmed.

Haneda airport in Tokyo temporarily closed its runways for safety checks but resumed services within an hour.

### **Strong quake shakes Kanto region**

#### **Strong quake rocks Kanto region, disrupts traffic**

<http://mainichi.jp/english/english/newsselect/news/20150530p2g00m0dm065000c.html>

TOKYO (Kyodo) -- A strong quake with a preliminary magnitude of 8.5 shook the Kanto region including Tokyo on Saturday evening, the Japan Meteorological Agency said, causing temporary disruption in air and rail traffic. No tsunami warning was issued.

There were no immediate reports of injuries, according to the Fire and Disaster Management Agency. The quake occurred at 8:24 p.m. off the Ogasawara islands in the Pacific about 1,000 kilometers south of Tokyo at a depth of some 590 km, registering upper 5 on the Japanese seismic intensity scale of 7 in Ogasawara and Ninomiya town in the eastern part of Kanagawa Prefecture west of Tokyo. It also registered lower 5 in parts of Saitama Prefecture north of Tokyo and 4 in central Tokyo. Tokyo's Haneda airport was temporarily closed for runway inspection but services later resumed. Some rail services including Shinkansen bullet trains were also temporarily halted. No irregularities were found at nuclear power plants in Ibaraki and Fukushima prefectures, their operators said.

## Better get used to it?

### Greater volcanic activity in Japan looks like new norm

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201505300041](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201505300041)

The violent eruption of Mount Shindake on Kuchinoerabujima island on May 29 is the latest ominous sign that the Earth's crust around the archipelago is getting restless. And some experts suggest that people get used to it.

Mount Ontakesan northeast of Nagoya erupted last September, killing 57 hikers. More recently, the rumblings of volcanic Mount Hakoneyama southwest of Tokyo led to the raising of the alert level to 2 on the 1-to-5 scale. A level 2 warning restricts entry into areas near the crater.

Toshitsugu Fujii, a professor emeritus at the University of Tokyo who heads the government's Coordinating Committee for Prediction of Volcanic Eruptions, says the spate of volcanic activity may not be so unusual after all.

"Although there were fewer volcanic eruptions in the 20th century, the current situation may be the normal state of affairs," Fujii said.

The May 29 eruption forced the residents of Kuchinoerabujima to evacuate. A similar evacuation of all islanders on Miyakejima island southeast of Tokyo took place in 2000 when a volcano erupted there. Islanders were not allowed to return until 2005.

Other volcanoes have also shown increased activity.

Although Mount Sakurajima in Kagoshima Prefecture has always been an active volcano, it has recorded close to 600 volcanic belches just this year alone.

Although it accounts for only 0.25 percent of the Earth's total land mass, Japan has 7 percent of the world's active volcanoes.

The 1914 eruption of Sakurajima in southern Kyushu caused volcanic ash to be carried as far away as the Tohoku region, but such huge volcanic eruptions have been rare in recent times.

"From now on, we may have to prepare ourselves for an even larger eruption at another volcano," Fujii said.

The government is taking steps to deal with such possibilities.

On May 29, the Cabinet of Prime Minister Shinzo Abe approved a bill to revise the special measures law to deal with active volcanoes. The changes would require local governments in the vicinity of active volcanoes, as well as the tourism industry operating in such areas, to compile evacuation plans. The revision was made after last year's Mount Ontakesan eruption and is to cover all volcanoes that are under constant monitoring by the central government.

The Japan Meteorological Agency currently monitors 47 of the 110 active volcanoes in Japan, but three more will be added to that list.

The local governments that lie in the vicinity of the 50 active volcanoes to be monitored will be required to designate evacuation centers and routes in the evacuation plans they come up with.

According to the Cabinet Office, only 20 of the total of 130 local governments in the vicinity of active volcanoes have put together evacuation plans so far.

May 31, 2015

## Second largest quake in more than a century

### **Magnitude-8.5 quake sends shaking throughout Japan, second largest since 1885**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201505310018](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201505310018)

The second most powerful earthquake to hit Japan in more than 100 years was felt in all 47 prefectures on May 30, but no deaths or serious damage were reported.

The quake struck at 8:24 p.m. with a preliminary magnitude of 8.5. Its epicenter was west of the Ogasawara island chain, 800 to 900 kilometers south of Tokyo, and its focus was at a depth of about 590 km, according to the Japan Meteorological Agency.

The agency said that with the exception of the magnitude-9.0 Great East Japan Earthquake on March 11, 2011, the May 30 quake was the strongest recorded in and around Japan since 1885.

It was also the first to measure a magnitude of 8.0 or more since the 3/11 disaster on the northeastern region of the nation.

Despite the widespread shaking throughout Japan, there was no danger of tsunami, the agency said.

Koji Nakamura, director of the agency's earthquake and volcano observations division, also said the possibility of a strong aftershock is "slim."

An intensity of upper 5 on the Japanese seismic scale of 7 was recorded in Hahajima island, part of the Ogasawara island chain, and Ninomiya, a town in Kanagawa Prefecture.

In some parts of Saitama Prefecture, the intensity was lower 5, while it was 4 in most areas of Tokyo.

The tremor temporarily disrupted services on the Tokaido Shinkansen Line between Tokyo and Osaka, the JR Yamanote Line in the capital and many other train services in the Tokyo metropolitan area.

About 77,000 passengers were affected by suspended Shinkansen runs alone, according to East Japan Railway Co. (JR East) and Central Japan Railway Co. (JR Tokai).

JR Tokai made arrangements for passengers to spend the night inside bullet trains at JR Tokyo, Nagoya and Shin-Osaka stations after they could not make it home because of the quake. About 350 passengers slept at JR Nagoya Station.

Experts believe the quake was triggered when the Pacific Plate submerged beneath the Philippine Sea Plate.

Kazuki Koketsu, professor at the Earthquake Research Institute of the University of Tokyo, said the earthquake was “among the largest occurring at a depth” so far from the ground surface.

He said the impact traveled through hard plates, resulting in shaking in broad regions of Japan.

The vibration of the quake was prolonged, much like during the Great East Japan Earthquake, since it usually takes powerful seismic activity to complete the slippage movement. But the focus of the Great East Japan Earthquake was at a relatively shallow depth of 24 km, leading to widespread devastation on the northeastern coast.

Residents in high-rises in the capital were in a “better” position to feel the effects of the May 30 quake.

“It felt like being aboard a ship,” said a man who was watching soccer on TV on the 41st floor of a condominium building in Tokyo’s Koto Ward near the waterfront. “I was scared that the condo might topple.”

Nobuo Fukuwa, professor of earthquake engineering who heads Nagoya University’s Disaster Mitigation Research Center, said vibrations of powerful earthquakes tend to amplify in sedimentary plains, such as Tokyo and Osaka, because many such quakes come with long-period ground motion.

“Tall buildings are prone to sway significantly by long-period ground motion,” he said.

**The Nuclear Regulation Authority and Tokyo Electric Power Co. reported no irregularities at TEPCO’s Fukushima No. 1 and No. 2 nuclear power plants after the quake.**

**The NRA also said the earthquake did not damage the Tokai No. 2 nuclear power plant in Ibaraki Prefecture.**

June 1, 2015

## Greenpeace on IAEA's report of Fukushima accident

<http://www.greenpeace.org/international/en/news/Blogs/nuclear-reaction/IAEA-Fukushima-Daiichi-accident-report/blog/53055/>

### Greenpeace releases confidential IAEA Fukushima-Daiichi accident report

Blogpost by Justin McKeating -

*The International Atomic Energy Agency report fails to accurately reflect the scale and consequences of the Fukushima disaster.*

The International Atomic Energy Agency's Board of Governors meets on June the 8th to discuss its confidential Fukushima-Daiichi Accident Summary Report. The report describes itself as 'an assessment of the causes and consequences of the accident at the Fukushima Daiichi nuclear power plant in Japan that began on 11 March 2011.'

Greenpeace has received a copy of the report and we made it public last week. We've also conducted an initial analysis of the report and our findings are not good.

Yukiya Amano, the IAEA Director General says the report is 'an authoritative, factual and balanced assessment, addressing the causes and consequences of the accident, as well as lessons learned.'

Yet our experts find it to be full of inaccuracies, uncertainties, and that it fails to address several highly important issues. We've sent our findings to Mr Amano.

Here are some examples.

- The IAEA admits that radiation monitoring was not working properly in the days immediately after the Fukushima disaster began.
- Despite this uncertainty, the report downplays the health risks to the disaster's many victims.
- This means that the estimates of the levels of radiation the people of Fukushima were exposed to cannot be trusted.
- The IAEA's analysis of the new safety regulations in Japan are superficial at best, and they offer no evidence in the report that the Japanese nuclear industry is operating to the global highest standards of nuclear safety.
- The reality is that there are major flaws in nuclear regulation in Japan with seismic and other threats to nuclear plants safety ignored or underestimated.
- The report dismisses the environmental impact of the disaster on animal life despite scientific investigations finding measurable effects on the region's fauna.
- The report fails to acknowledge the uncertainties that still surround the causes of the disaster. Much of the critical systems inside the reactors that melted down have not yet been inspected.

These are just some of our initial findings. There are more to come.

(You can read our full analysis of the report here. The five part IAEA report is here: part one, part two, part three, part four, part five.)

So we see, as we saw in the aftermath of the Chernobyl nuclear disaster, the IAEA trying to create a narrative that minimizes the health and environmental impacts of Fukushima, while emphasising that lessons are being learned, including in making nuclear safety regulation more effective.

In short, the IAEA is moving to protect the nuclear industry instead of the people whose lives have been destroyed by the Fukushima disaster and those who may be affected by future nuclear accidents.

This is not a surprise, a central role of the IAEA is to promote the global expansion of nuclear power. The fact that all commercial nuclear reactors in Japan – 43 in total – remain shutdown is a direct challenge to the IAEA's mission. That is the context in which the IAEA report must be seen.

After four years, the disaster in Fukushima is still unfolding and will take many decades to address. If the work to clean up the massive damage done is to be carried out effectively and future accidents avoided as much as possible, the IAEA must demonstrate that it can change the way it operates and quickly.

The IAEA at present serves only the interests of the nuclear industry and its drive for profit at the expense of the people who have pay the ultimate price for nuclear power's failures.

Greenpeace is calling on Mr Amano and the IAEA to suspend their consideration of the report's findings.

An open and transparent process must be established that considers the views of the people of Japan, as well as independent scientists. We stand ready to meet with representatives of the IAEA to discuss our serious concerns.

*Justin McKeating is a nuclear blogger for Greenpeace International, based in the UK.*

June 2, 2015

## **Durability in doubt but hose not replaced**

### **Hose leaking radioactive water not replaced**

[http://www3.nhk.or.jp/nhkworld/english/news/20150602\\_13.html](http://www3.nhk.or.jp/nhkworld/english/news/20150602_13.html)

Officials at the Fukushima Daiichi nuclear plant say a hose that leaked radioactive water was left untended **even though its durability was in doubt.**

The leak of highly radioactive wastewater was detected on Friday. Tokyo Electric Power Company, or TEPCO, estimates that **7 to 15 tons of water leaked from a crack in the hose, some into the plant's port.**

Water sampled from 4 locations inside the port turned up the highest levels of radioactive substances since monitoring began 2 years ago.

Company officials say the crack in the hose was caused by stress from excessive bending that went beyond the permissible level set by its maker.

TEPCO had been replacing the same type of hose at other parts of the plant due to doubts about its durability.

But the one that leaked was left untouched since it was placed at a site where workers were busy building a wall of frozen soil around the nuclear complex to keep groundwater from seeping into the reactor buildings.

No clear rules for patrols were in place at the site. **A worker passing by happened to notice the leak.**

TEPCO plans to speed up work to replace the hoses with stronger ones. It also plans to draw up a new manual to ensure proper monitoring when the hoses are used.

## **25% of special disaster facilities not usable after flooding**

### **Many disaster-response hospitals at risk of being cut off by flooding**

<http://www.japantimes.co.jp/news/2015/06/02/national/many-designated-disaster-hospitals-at-risk-of-being-cut-off-by-flooding/#.VW7NNkbwmos>

Kyodo

**More than a quarter of the hospitals designated as special disaster facilities may not be able to accept patients if heavy rain inundates nearby streets, as they have no alternative means of access,** according to a new government study.

Of the 676 facilities designated as disaster hospitals as of April last year, 398, or 58.9 percent, said the roads surrounding them could be flooded due to heavy rainfall or tsunami. Of these, 179 facilities, or 26.5 percent of the total, said they have no substitute access.

According to the study, which was released Monday, only 25 of the 179 have taken steps such as setting up heliports or using inflatable boats and amphibious vehicles to accommodate patients in such contingencies, while 154 facilities have yet to take any such measure

Prefectural governments designate hospitals with disaster medical assistance teams, heliports and inhouse power generators as disaster hospitals to accept patients on a 24-hour basis when disasters occur.

The number of such hospitals was increased from 676 to 694 in April this year.

The results have prompted the Health, Labor and Welfare Ministry to call on relevant prefectural governments to consider stepping in.

The ministry launched the study last October after heavy rain inundated a large part of Fukuchiyama, Kyoto Prefecture, in August, leaving no designated disaster hospital in the city able to accept emergency patients for 10 hours.

A fire department official in Fukuchiyama said when more than 2,500 buildings flooded in heavy rain last August, the water level rose faster than expected.

Moreover, the water blocked a road leading to Fukuchiyama City Hospital, which serves as a special disaster facility. Four patients had to be delivered to the hospital on stretchers carried through waist-deep water for a distance of up to 200 meters, the fire department said.

The hospital also suffered from power outages caused by two lightning strikes. Despite switching to an in-house generator, some equipment remained unavailable for use for extended periods.

The flooding also affected staffing. Since workers on duty the following day were unable to reach the site, those already at the hospital had to continue at their posts while grabbing short naps.

As many as 101 hospitals, or almost 15 percent of the total surveyed, said they were unable to estimate the scale of damage resulting from ground liquefaction. Ninety-five blamed that on a lack of hazard maps drawn up by local communities.

Meanwhile, 93, or almost 14 percent of the total, said they could not foresee the efficacy of their fire extinguishing equipment, while 74 hospitals, or almost 11 percent, were unprepared to cope with damage caused by volcanic activity. As many as 62, or 9.2 percent, said they might have difficulty in dealing with damage due to seismic activity.

The study revealed that some hospitals have taken no specific steps even though they made some predictions of impact — and certainly did not consider a major disaster such as flooding or a lower-6 quake on the Japanese seismic scale.

The hospitals are required to conduct seismic strengthening work and must have access to drainage pumps, but some replied that they would need to raise funds for that. Some put it bluntly: They would be unable to cope without outside help.

The ministry guidelines designating hospitals as special disaster facilities do not specify location as a criteria, such as being in an elevated position if the neighborhood is flood-prone.

“It is essential to use hazard maps when estimating damage,” said Nobuo Fuke, head of Teikyo University Chiba Medical Center’s Intensive Care Center.

Meanwhile, recent disasters have boosted risk awareness among hospitals and local communities.

Authorities in Hyogo Prefecture revised guidelines in March 2014 that had been drafted in the wake of the 1995 Great Hanshin Earthquake. And the Aichi Prefectural Government urged all medical institutions in the prefecture to establish a network enabling the exchange of information about bed availability.

Fukuchiyama City Hospital has issued a request to municipal and other authorities to increase the number of drainage pumps available for use in the event of flooding after heavy rainfall.

The hospital said it has also updated its electrical facilities so that they can power heavy equipment with in-house generators in the event of an emergency.

The biggest problem remains a shortage of funds.



“Local communities should share information about possible risks with hospitals and consider securing a budget for emergencies. But it is also important to establish a safety net among local hospitals,” said a health ministry official.

## Amano on nuclear cyberattacks

### *Amano Calls For International Response On Nuclear Cyberattacks*

**<http://www.nucnet.org/all-the-news/2015/06/02/amano-calls-for-international-response-on-nuclear-cyberattacks>**

An international response is needed to tackle the global threat posed by criminals and terrorists bent on launching cyberattacks against nuclear facilities, International Atomic Energy Agency director-general Yukiya Amano has said.

Speaking at the opening of a conference on computer security at the IAEA's Vienna headquarters, Mr Amano said reports of actual or attempted cyberattacks have become “an almost daily occurrence” around the world and “the nuclear industry has not been immune”.

“Last year alone, there were cases of random malware-based attacks at nuclear power plants, and of such facilities being specifically targeted,” he said.

Mr Amano said computers play an essential role in all aspects of the management and safe and secure operation of nuclear facilities, including maintaining physical protection. “It is vitally important that all such systems are properly secured against malicious intrusions.”

He said staff responsible for nuclear security should know how to repel cyberattacks and to limit the damage if systems are penetrated. The IAEA is doing what it can to help governments, organisations, and individuals adapt to evolving technology-driven threats from “skilled cyber adversaries”.

While nuclear security is a national responsibility, the IAEA plays the central role in helping the world to act in unison against the threat of nuclear terrorism, Mr Amano said. “Terrorists and other criminals operate international networks and could strike anywhere,” he said. “So the response must also be international.”

The 1-5 June 2015 conference, the first of its kind to be held at the IAEA, has attracted more than 650 delegates from 92 member states and 17 regional and international organisations. Organised in cooperation with the International Criminal Police Organisation (Interpol), the International Telecommunication Union, the UN Interregional Crime and Justice Research Institute, and the International Electrotechnical Commission, the conference includes representatives of nuclear regulators and plant operators, law enforcement, system and security vendors.

Addressing the conference participants yesterday, Mr Amano said: “Your presence here sends the important message that the international community is serious about protecting nuclear and other radioactive material – and associated activities and facilities – from malicious acts which are either computer-based, or targeted at computers.”

Khammar Mrabit, director of the IAEA's division of nuclear security, said the conference will identify additional areas where the IAEA can help member states develop "comprehensive computer security programmes within their national security regimes".

## Hose caused radioactivity leak

### NUCLEAR WATCH



### Hose Caused Radioactivity Leak

<http://www3.nhk.or.jp/nhkworld/english/news/nuclearwatch/20150602.html>

Officials at the Fukushima Daiichi nuclear plant have supplied more details about a leak of highly radioactive water that was discovered last week. They say a hose that caused the leak was left unchecked even though there were concerns about its durability.

Tokyo Electric Power Company (TEPCO) workers discovered the problem on Friday. They estimate that as much as 15 tons of water seeped into a drainage channel and then leaked into the port that is managed by the plant.

When workers tested water samples from the port, they found the highest level of radioactivity since monitoring began 2 years ago.

Company officials say the crack in the hose was caused by stress from excessive bending. Concerns about durability had led them to replace similar equipment in other parts of the plant.

TEPCO will now accelerate replacement work. Officials are also compiling a manual to ensure proper checks are carried out when the hoses are in use.

June 3, 2015

## TEPCO lies again on wastewater handling

### NRA not informed of tainted water transfer

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the damaged Fukushima Daiichi nuclear plant is facing censure for transferring wastewater that was possibly more radioactive than it originally stated. The company failed to notify Japan's nuclear regulator of the change.

In May, officials found that water sampled at 4 sites at the plant's port briefly exceeded levels of radioactivity seen previously in the 2 years since monitoring began.

It's believed the contaminated water came from a cracked and leaking hose inside the plant. The water from the hose flowed into a channel that led to the port.

Initially, Tokyo Electric Power Company said the hose contained wastewater that was a byproduct of treating contaminated rainwater.

But on Wednesday it was revealed at a meeting of the Nuclear Regulation Authority that **the utility had begun adding other highly radioactive wastewater to the water since mid-May.**

**TEPCO says that as a result the wastewater in the hose was likely more radioactive than it initially declared.**

**Some of the water in the hose was groundwater mixed with extremely highly contaminated water that had pooled in the plant's basement.**

The hose cracked from being bent beyond the operational limit set by the maker. The utility had also failed to replace the hose despite questions about its durability.

NRA Chairman Shunichi Tanaka condemned the utility for its utter failure to control the wastewater. He ordered the company to continue monitoring and reporting on its handling of wastewater.

June 4, 2015

## Utilities and NRA at odds over faults

### Nuclear watchdog, plant operators wide apart on risks of faults

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201506040129>

Electric utilities and the nation's nuclear watchdog are at odds over the "science" used to calculate the risks of underground faults at nuclear power plants.

The Nuclear Regulation Authority sticks to the principle that has been applied since before the 2011 Fukushima nuclear disaster: Faults should be considered "active" unless they are scientifically confirmed to be inactive.

Utilities are banned from operating or constructing reactor buildings and other important facilities directly above active faults.

But the companies, which have applied for NRA approval to restart reactors across the country, say the NRA's methods are "unscientific" and have provided no solid evidence to back its claims about active faults. The utilities said the authority should listen to the opinions of other experts.

Indeed, the limited amount of reliable data in surveying faults beneath nuclear power facilities has prolonged the periods for the NRA's safety screenings of the idle reactors.

But a senior NRA official said the utilities tend to deny the existence of active faults and underestimate the effects of such structures.

"They are still trying to only gather data favorable to them and present to authorities the minimum possible impact," the official said.

In May, an expert panel of the NRA said the possibility of the Shika nuclear power plant in Ishikawa Prefecture standing directly above active faults was real.

The judgment effectively bans Hokuriku Electric Power Co. from restarting the No. 1 reactor at the plant. If the company cannot overturn the NRA's decision, it will have to decommission the reactor.

Under stricter safety standards introduced in July 2013, faults that have possibly shifted during the past 120,000 to 130,000 years are defined as active, the same as in the older criteria.

The new regulations also require utilities to estimate the largest possible shaking that could hit their facilities based on data concerning active faults and other geological features, and reflect the results in their earthquake-resistance measures.

But there is no clear proof that the geological faults beneath the Shika plant are active. The four panel members said it is most "reasonable" to consider the faults as active.

The committee is expected to soon compile its draft report.

One focus of the debate surrounded a sketch of the geological structure under the nuclear plant made at the time of its construction.

The NRA noted that the cross-section of the underground soil shows a wavy stratum on bedrock--a structure typical of an active fault.

The panel attempted to examine whether newer strata were affected by the fault to make a more accurate decision. But the newer layers were scraped away for the construction of the plant. And a photo taken before they were removed was too blurry to be of much help.

The committee examined the geologic formation around the removed layers but could not find any strata clearly showing when the fault moved.

Hokuriku Electric is arguing that the drawing provides zero evidence of the existence of an active fault.

For Tohoku Electric Power Co.'s Higashidori nuclear power plant in Aomori Prefecture, a report by an expert panel of the NRA said it is impossible to make a clear judgment on whether some faults running under the plant are active.

The NRA also said in its draft report released in May that faults beneath the Mihama plant in Fukui Prefecture, operated by Kansai Electric Power Co., are highly likely inactive. But the NRA said it will continue studying the relation between the faults under the facility and nearby active faults, as well as other factors.

The authority worked out a draft examination report in May concerning the safety screening of Shikoku Electric Power Co.'s Ikata power plant in Ehime Prefecture.

The Median tectonic line, a huge active fault, runs near the facility. A 480-kilometer section of the line would likely affect the nuclear plant during seismic activity, experts say. But there is no established method to estimate the effects of such a huge active fault.

Before compiling the draft report, the NRA and Shikoku Electric spent more than a year discussing the likely impact on the nuclear plant in a possible earthquake based on two scenarios: smaller faults move separately or they shift as a large, single structure.

Kazuki Koketsu, a seismology professor at the University of Tokyo's Earthquake Research Institute who used to be involved in safety screenings of nuclear facilities, said that making a definitive decision on the activeness of faults is a tricky business.

"There are many factors that make it difficult to accurately estimate fault activities, so a prediction could later prove wrong," Koketsu said. "The related parties should recognize that meeting the minimum standards does not ensure safety."

June 5, 2015

## Fallout still Japan's major problem

### Report: Nuclear fallout top environmental problem

[http://www3.nhk.or.jp/nhkworld/english/news/20150606\\_04.html](http://www3.nhk.or.jp/nhkworld/english/news/20150606_04.html)

A Japanese government report says the release of massive amounts of radioactive materials is still the country's top environmental problem 4 years after the nuclear accident in Fukushima Prefecture.

This year's white paper on the environment says high levels of radiation are still detected in some areas. It says affected areas face a number of problems, such as depopulation and ungrounded rumors.

The report calls for the introduction of renewable energy in such areas. It proposes using part of earnings from green energy generation to help residents to return to their communities.

June 12, 2015

## IAEA reports on Fukushima disaster

## IAEA: Japan lacked necessary nuclear safeguards

[http://www3.nhk.or.jp/nhkworld/english/news/20150612\\_08.html](http://www3.nhk.or.jp/nhkworld/english/news/20150612_08.html)

A report compiled by the International Atomic Energy Agency says Japan lacked necessary safeguards to prevent the 2011 Fukushima nuclear accident.

NHK obtained a roughly 240-page summarized version of the report on the disaster. The report put together last month analyzes the cause and impact of the nuclear accident at the Fukushima Daiichi power plant in northeastern Japan.

Preparation of the report involved around 180 scientists from more than 40 countries.

The report concludes that safeguards for accidents were insufficient in Japan due to a widespread belief that nuclear plants were safe.

The report argues that Tokyo Electric Power Company, the Fukushima plant's operator, failed to take necessary steps.

The report claims the failure came despite predictions that tsunami measuring up to 15 meters high would reach the plant if a magnitude-8.3 earthquake strikes.

The report points out that measures to prevent the flooding of emergency diesel generators were inadequate due to insufficient safety assessments based on IAEA standards.

The report also mentions a lack of worker training for emergencies. It adds that the accident was not promptly addressed owing to unclear responsibilities assigned to each relevant entity.

The report proposes a periodic review of safety requirements for nuclear plants. It also recommends assuming scenarios in which multiple natural disasters occur simultaneously.

The IAEA plans to solicit opinions from its member nations and present the final version of the report to its general conference in September.

June 15, 2015

## New evacuation plan for Ikata plant

### Ehime revises Ikata nuclear plant evacuation plan

<http://www.japantimes.co.jp/news/2015/06/15/national/ehime-revises-ikata-nuclear-plant-evacuation-plan/#.VX65a0bwmos>



by Eric Johnston

Staff Writer

OSAKA – Ehime Prefecture announced Monday revised plans for cooperating with six other prefectures in the event of an accident at its Ikata nuclear plant.

The prefecture will share information and cooperate on nuclear disaster drill planning with Tokushima, Kagawa, Kochi and Hiroshima prefectures, which will also accept evacuees in the event of an emergency. Previous plans called for the nearly 130,000 people in seven towns lying within 30 km of the Ikata plant to be evacuated to locations elsewhere within the prefecture as well as to Oita and Yamaguchi prefectures.

**The revised plan calls for Oita to decide which towns and villages would take evacuees from Ehime, based on its own abilities at the time of a disaster, and for Yamaguchi to specify which facilities it would use as evacuation centers.**

Priority will be given to land-based evacuations. But in the event that roads leading from Ehime to other parts of Shikoku can't be used, residents will be sent to Oita by sea and air.

Last month, Shikoku Electric Power Co.'s Ikata No. 3 reactor took a major step toward a restart when the Nuclear Regulation Authority approved a basic safety report. However, the reactor is not expected to go live until at least this winter because the operator needs to obtain other forms of clearance, including local consent.

Concerned about the central government's push to restart nuclear plants as quickly as possible without sufficient understanding between local governments and nuclear authorities on how they would carry out evacuations, some prefectures, towns and villages have banded together to press Tokyo to work more closely with local authorities.

The law requires local governments that sit within 30 km of a nuclear plant to draw up evacuation and response measures.

However, **many people live in towns and villages that lie outside the prefecture where the plant is located, creating concerns about timely communications between local and prefectural authorities, the utilities and the central government.**

## Food ban discussions

### Japan, S.Korea to discuss food import ban

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Government officials from Japan and South Korea are to meet in Geneva later this month to discuss Seoul's ban on fishery imports from northeastern Japan.

South Korea has prohibited all imports of fishery products from 8 Japanese prefectures, including Fukushima, since September 2013. The ban came after a massive amount of contaminated wastewater leaked at the crippled Fukushima Daiichi nuclear power plant.

The 2 sides agreed on Monday that the talks based on a World Trade Organization agreement will be held on June 24th.

Both sides appear ready to continue discussions the following day should it become necessary.

But whether the import ban will be lifted swiftly remains to be seen.

South Korea maintains it should be lifted in stages. Japan argues that the ban has no scientific basis and should be removed across the board.

June 17, 2015

## Bags of radioactive soil found damaged at 78 sites

### Bags of contaminated soil damaged at storage sites

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

A survey by the Environment Ministry has found that bags containing soil and debris from decontamination efforts in Fukushima Prefecture are damaged **at dozens of initial storage sites**.

The ministry last year examined 580 sites that hold **soil, grass and other materials tainted with radioactive substances** from the 2011 Fukushima Daiichi nuclear plant accident. The survey didn't cover evacuation zones.

Ministry officials say bags and water-proof sheets were found to be damaged at 78 sites. At 113 sites, part of the ground where bags had been placed had crumbled due to rain or other causes.

The officials say there were no leaks of contaminated soil to areas outside the holding sites. But **the survey underlines the challenge of ensuring safety while keeping waste at such sites for extended periods**.

Officials plan to transfer waste now at such initial storage sites to an intermediate storage facility currently under construction in an area straddling 2 towns within the prefecture.

But construction has made little progress because in many cases negotiations with landowners have stalled.

Ministry officials say they will regularly examine the initial storage sites and cooperate with local governments on steps to stem the leak of contaminated materials.

## Jesco's network infected by virus



## **Fukushima radioactive waste storage operator's intranet infected by virus**

<http://www.japantimes.co.jp/news/2015/06/17/national/fukushima-radioactive-waste-storage-operators-intranet-infected-by-virus/#.VYJmjbwmos>

Kyodo

The internal computer network of the state-run Japan Environmental Storage & Safety Corp., which manages temporary storage sites for decontaminated waste from the Fukushima nuclear disaster, has been infected by a computer virus, the Environment Ministry said Wednesday.

The operator also known as JESCO, an Environment Ministry affiliate, is investigating whether any information has been leaked, ministry officials said.

JESCO will run interim facilities to be set up on land in Fukushima Prefecture to store radioactive soil and other waste. Facility buildings have yet to be built amid slow progress in negotiations with landowners. JESCO's computers do not store information on the landowners, which is kept at the Environment Ministry, the officials said.

JESCO shut down the network's external communications Tuesday night after a firm monitoring the network detected unintended data transmission, they said.

The Environment Ministry temporarily halted transportation of waste scheduled for earlier Wednesday, but the operation resumed later, the officials said.

The Japan Pension Service and the Tokyo chamber of commerce recently announced their respective computer networks had been hacked, causing data leaks of confidential information.

June 20, 2015

## **Highly radioactive water comes out of pipe**

### **TEPCO investigating water leak at Fukushima plant**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Officials in charge of the Fukushima Daiichi nuclear power plant say around 20 liters of highly radioactive water leaked from equipment used to treat tainted rainwater. But they say the incident poses no danger to the outside environment.

Tokyo Electric Power Company officials say the leak came to light when an alarm went off around 9 AM on Saturday. Workers found water was coming out of a joint in a pipe.

TEPCO says all of the water fell into a receptacle below the equipment.

The utility says **the water contained about 24,000 becquerels per liter of beta-ray emitting substances, a very high amount.**

TEPCO officials say a valve that should have been open was closed, and they believe this raised pressure in the pipes and caused the leak.

The utility is investigating to see if there was any error on the part of workers.

June 21, 2015

## Takahama: Traces from Tensho tsunami?

### Tsunami traces from hundreds of years ago found near 'safe' Takahama nuclear plant

<http://www.japantimes.co.jp/news/2015/06/21/national/tsunami-traces-from-hundreds-of-years-ago-found-near-safe-takahama-nuclear-plant/#.VYbWp0bwmot>

Kyodo

A group of researchers has found tsunami traces believed to date back to between the 14th to 16th centuries near the Takahama nuclear power plant in Fukui Prefecture.

The plant's operator, Kansai Electric Power Co., said the finding does not affect its tsunami risk evaluation of the plant or its countermeasures, but the Nuclear Regulation Authority said it plans to ask the utility to look into the research.

Idled reactors 3 and 4 at the Takahama plant obtained safety clearance from the regulator in February, clearing a key hurdle toward resuming operations.

"We will examine the information without preconceptions, and will note whether it may relate to a threat to safety," an official from the regulator said of the finding.

Hirofumi Yamamoto, a professor of geology at Fukui University, and other researchers in the group found a layer of sand containing seashells in shallow ground at a location more than 500 meters from the shore of the bay. Carbon-dating analysis puts the formation of the layer at between the 14th and 16th centuries.

An ancient document says the Tensho earthquake that struck central Japan in 1586 caused major tsunami damage in the Wakasa Bay area, where the idled plant stands.

Yamamoto said it is possible the traces are from the Tensho tsunami, although there is not enough evidence to prove it.

All of Japan's commercial reactors were taken offline after the Fukushima nuclear crisis in 2011. The Takahama reactors are among several that recently received regulatory approval for restarting, after taking enhanced safety measures against earthquake and tsunami hazards and other severe accidents.

## "Radiation prevention measures are lagging behind"

### Protecting nuclear disaster evacuees from radiation still a concern

<http://mainichi.jp/english/english/newsselect/news/20150621p2a00m0na010000c.html>

As prefectures and municipalities that host or border nuclear plants upgrade their regional disaster prevention plans based on the nuclear disaster response guidelines for citizen evacuation protocols

announced by the Nuclear Regulation Authority (NRA) in April, **the problem of how to measure and prevent radiation exposure among evacuees continues to loom large.**

"Reactor No. 1 (at the Fukushima No. 1 Nuclear Power Plant) had exploded, and the inside of the offsite center (which was established as the disaster response base of operations within Fukushima Prefecture) also had high radiation levels. The figures for the screenings we were conducting into whether or not residents had been exposed to radiation were raised immediately afterward."

So recalls Tsuyoshi Ebine, 62, chief councilor in charge of nuclear power measures with the Nagasaki Prefectural Government. He was working for the secretariat of the Cabinet Office's Nuclear Safety Commission at the time the nuclear accident occurred, and headed shortly thereafter to the town of Okuma in Fukushima Prefecture to begin engaging in disaster response measures at the offsite center amidst the unfolding chaos.

According to the Fukushima Prefectural Government and other bodies, standards that were in place prior to the nuclear accident held that decontamination procedures should be performed on anyone for whom radiation levels measured near the skin stood above 13,000 counts per minute (cpm). In the case of a one year-old child who had inhaled radioactive substances, this would be equivalent to the thyroid gland being exposed to 100 millisieverts of radiation. (The permissible level of radiation exposure for the average adult is one millisievert per year.)

Following the hydrogen explosion at the No. 1 reactor at the Fukushima plant, however, which took place on March 12, 2011 -- dispersing enormous amounts of radioactive materials -- screening centers for local evacuees were thrown into a state of total confusion. Escaping to safety became the top priority, and **acceptable levels of radiation exposure were raised tenfold to some 100,000 cpm.** Readings exceeded this level for a total of 102 residents -- **a figure, moreover, that represented only those cases that were recorded.**

**According to the NRA's proposed measures for dealing with nuclear power disasters, the radiation exposure level at which decontamination is to take place is set at above 40,000 cpm for screenings conducted within one month following a nuclear accident.**

"For residents, the objective is evacuation -- and speed is top priority," comments Shinichi Araki, who heads the department of nuclear emergency response and radioactive material protection at the NRA's secretariat office. "Here, we are applying the lessons learned from the experience of evacuations following the nuclear accident in Fukushima."

A manual was additionally compiled outlining guidelines for conducting examinations of residents leaving specific areas following exposure to radiation. Hair and shoes are identified in the manual as areas where such exposure generally occurs, and it is explained that if a water source is available, hair should be washed -- and clothing should additionally be changed -- in order to help bring radiation levels down. If subsequent testing reveals a figure below 40,000 cpm, the guidelines continue, the individual can then proceed to evacuate.

In cases whereby residents evacuate knowing that they have already been exposed to radiation, however, alleviating their concerns is difficult.

"I hope that trainings can be conducted in order to avoid the type of chaos that we saw following the Fukushima nuclear accident," comments Araki. "The next step we must take is to allay the fears that exist among residents who have faced radiation exposure."

Nagasaki Prefecture, where radiation exposure has been experienced from the atomic bombing, has been rapidly implementing measures for dealing with potential nuclear power accidents -- with four of its cities lying within a 30-kilometer radius of the Kyushu Electric Power Company's Genkai Nuclear Power Plant.

The prefecture revised its regional disaster prevention plan in June 2012, prior to the national government announcing its future disaster policy guidelines. Provisions were made within the prefectural supplementary budget for radiation-blocking stable iodine tablets, and revisions were made to its emergency radiation exposure medical manual the following year in 2013, including efforts such as increasing the number of medical facilities specializing in early-stage radiation exposure from two to at least three.

Still, however, Ebine comments, **"Radiation prevention measures are lagging behind." The number of medical team specialists remains insufficient, and plans are not in place for evacuations at social welfare facilities or other establishments of a similar nature.**

"If there were to be an accident at the Genkai Nuclear Power Plant that resulted in residents being exposed to more than 40,000 cpm of radiation, it would not be enough to do as the government advises -- which is to simply undertake decontamination until the figure falls below the target level," Ebine adds. **"It is preferable to continue decontaminating until the lowest possible radiation exposure levels are reached -- but no (government) standards are in place in terms of the purpose and methods in this regard."**

The medical manual for radiation exposure that was put together by Nagasaki Prefecture includes information regarding concrete methods for decontamination, such as using moist towelettes to wipe away radioactive substances.

"Nagasaki Prefecture has experience with the eruption of the Fugen-dake peak of the Unzen volcano, and we also sent our employees to Fukushima Prefecture following the nuclear accident there," notes Shinichi Yoshida, director of the prefecture's crisis management department. "In addition, we have a framework in place based upon research conducted at Nagasaki University with respect to our history with the atomic bombing."

**"Following the Fukushima nuclear disaster, decontamination had to be undertaken with no available water source -- and nobody there knew what was going on,"** Yoshida added. "We must be ready for any possible contingency -- and we have no choice but to make efforts to educate as many residents as possible about the realities of radiation."

June 28, 2015

## Broken bolts on shipped containers of nuclear fuel

### Nuclear Fuel Transport container lid bolts found broken

<http://mainichi.jp/english/english/newsselect/news/20150628p2g00m0dm006000c.html>

TOKYO (Kyodo) -- Nuclear Fuel Transport Co. said Saturday it found five bolts used to fix the lids on metal containers for transporting low-level radioactive waste by sea were found broken, and it has been ordered to halt operations until safety is confirmed.

The firm, which is the only company in Japan engaged in transporting such radioactive waste, said none of the bolts were broken during shipping, and there had been no impact on the environment.

**The problem was first discovered in February, but the company failed to report it to the transport ministry for more than four months after judging it to be a "peculiar case,"** according to the Land, Transport, Infrastructure and Tourism Ministry.

The first case involved one broken bolt among the four used to secure the lid of a container. It was found during a check of empty containers at the company's storage facility in the village of Rokkasho, Aomori Prefecture, northeastern Japan, it said.

Last Monday, it found a broken bolt while preparing to transport waste at Kansai Electric Power Co.'s Mihama nuclear power plant in Fukui Prefecture on the Sea of Japan, Nuclear Fuel Transport said.

When another bolt was found broken Thursday at the Rokkasho facility, the company conducted further checks and found two more broken bolts there, it said.

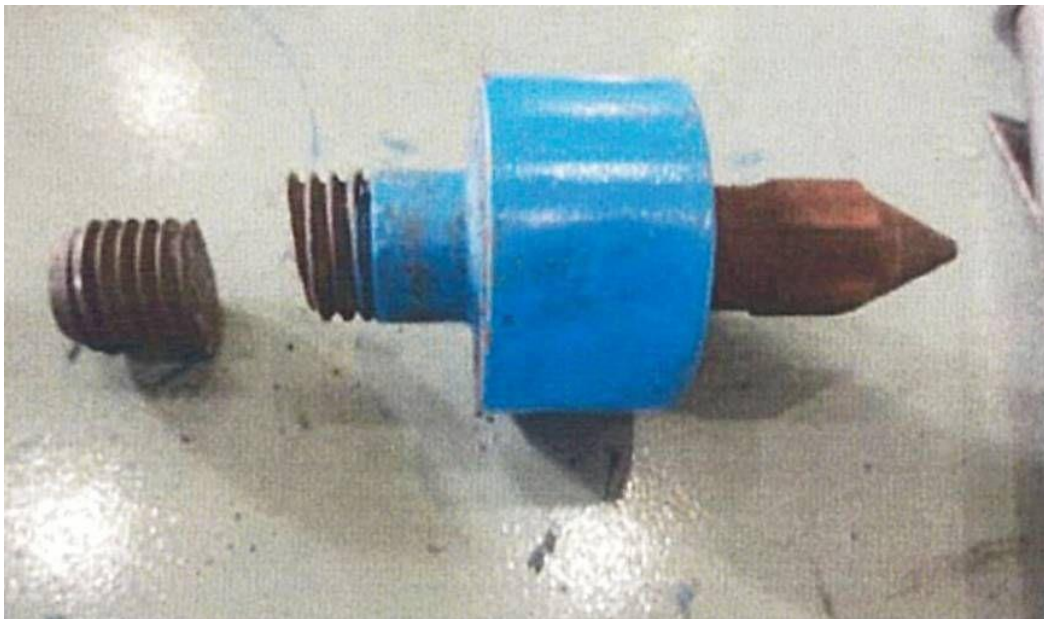
Currently, all of Japan's commercial nuclear reactors are shut down and must pass more stringent safety checks adopted in the wake of the 2011 Fukushima nuclear plant disaster in order to be allowed to resume operating.

For years, Japan has shipped spent nuclear fuel from commercial reactors, which prior to the 2011 disaster generated nearly a third of the country's electric power, to France and Britain for reprocessing.

### Container lid bolts for low-level nuclear waste might be failing

Kyodo, Staff Report

<http://www.japantimes.co.jp/news/2015/06/28/national/container-lid-bolts-low-level-nuclear-waste-might-failing/#.VZAV-0bwmi>



One of the bolts used to secure the lid of a container used to transport low-level radioactive waste is shown sheared at the threads. | NUCLEAR FUEL TRANSPORT CO.

The bolts used to secure covers on metal containers for transporting low-level radioactive waste by sea might be failing, Nuclear Fuel Transport Co. disclosed over the weekend.

The containers carry drums filled with radiation-tainted clothes and equipment discarded by nuclear power plant workers. The items are mixed with cement and sealed inside the drums before making the voyage to a storage facility in the village of Rokkasho, Aomori Prefecture.

The Tokyo-based company — the only one in Japan transporting that kind of waste — said that none of the five bolts found so far broke during shipping and that there had been no environmental impact. The Land, Transport, Infrastructure and Tourism Ministry has ordered the firm to halt all transport operations until safety measures can be confirmed.

The problem was first discovered in February, but Nuclear Fuel Transport failed to report it to the ministry for more than four months after judging it to be a “peculiar case,” the ministry said Saturday. The first case involved the discovery of one broken bolt among four used to secure the lid of a single container. It was found during a check of empty containers at the company’s storage facility in Rokkasho, it said.

Last Monday, it found another broken bolt while preparing to transport waste from Kansai Electric Power Co.’s Mihama nuclear power plant in Fukui Prefecture, the company said.

When another broken bolt was found Thursday at the Rokkasho facility, the company conducted further checks and found two more there, it said.

**There are 3,300 such containers, made between 2011 and 2014, around the country. It will take a while to check them all and for transport operations to resume,** domestic media reports said.

All of Japan’s commercial nuclear reactors are idle and must pass new stringent safety checks adopted in the wake of the triple core meltdown at the Fukushima No. 1 nuclear plant in 2011 before going back online.

For years, Japan shipped spent nuclear fuel to France and Britain for reprocessing because its commercial reactors generated nearly a third of its electricity needs before the Fukushima disaster.

June 30, 2015

## **IAEA inspection begins at nuclear plant in Japan**

[http://www3.nhk.or.jp/nhkworld/english/news/20150630\\_32.html](http://www3.nhk.or.jp/nhkworld/english/news/20150630_32.html)

The UN nuclear agency has begun a safety review of a nuclear power plant in northern Japan.

The review at the plant in Kashiwazaki-Kariwa in Niigata Prefecture began on Tuesday. Some of the 12 inspectors are officials of the International Atomic Energy Agency, and others are outside experts.

The 12 were separated into 5 groups to inspect the plant, which is operated by Tokyo Electric Power Company.

This is the first IAEA safety review at a Japanese nuclear plant since the Fukushima accident in 2011.

The team is led by Peter Tarren of the IAEA’s Operational Safety Section.

Tarren led one of the groups that inspected a new emergency generator installed on a 35-meter hill as a measure against tsunami. It was built after the March 11th 2011 earthquake and tsunami.

Other groups examined safety measures that include a device called a filtered vent installed on reactor containment vessels and a 15-meter-high breakwater.



During their 2-week review, the inspectors will assess the plant's safety measures and its ability to handle emergencies according to international standards. They plan to make recommendations for improvements if necessary, and **will submit their final report to the government in about 3 months.**

July 1, 2015

## IAEA at Kashiwazaki-Kariwa

### IAEA reviews safety of TEPCO's Kashiwazaki-Kariwa nuclear plant

<http://mainichi.jp/english/english/newsselect/news/20150701p2g00m0dm082000c.html>

NIIGATA, Japan (Kyodo) -- A team of nuclear experts from the International Atomic Energy Agency on Tuesday began reviewing the safety of Tokyo Electric Power Co.'s Kashiwazaki-Kariwa nuclear plant on the Sea of Japan coast in Niigata Prefecture, as called for voluntarily by the utility.

During the review through July 13, **the so-called Operational Safety Review Team of the international nuclear watchdog will evaluate and give advice on TEPCO's accident prevention measures and its emergency responses at the world's largest nuclear station.**

On Tuesday, the experts visited the plant and conducted an on-site probe based on international safety standards. The 12-member team is expected to compile a report in around three months, according to TEPCO.

TEPCO, the operator of the radiation-leaking Fukushima Daiichi nuclear station destroyed by the 2011 earthquake and tsunami, seeks to reactivate the Kashiwazaki-Kariwa plant as soon as possible to improve its business, which has suffered as a result of the massive costs it has incurred for compensation and decontamination after the Fukushima accident.

The company's earnings are also dwindling due to higher imported fuel costs for fossil power generation in the absence of nuclear power. Currently, all of Japan's nuclear reactors are offline pending the Japanese regulator's assessment based on a set of new safety requirements adopted after the Fukushima accident.

July 2, 2015

## Change quake prediction or not?

### Nuclear watchdog threatens to abort screening of Mihama plant

<http://mainichi.jp/english/english/newsselect/news/20150702p2a00m0na010000c.html>

The Nuclear Regulation Authority (NRA) has threatened to terminate safety screenings for reactivating the Mihama nuclear power plant's No. 3 reactor if its operator, Kansai Electric Power Co. (KEPCO), fails to finalize a maximum seismic projection for the plant's premises by the end of August, it has been learned.

The nuclear watchdog announced the decision on July 1 over the plant's No. 3 reactor in Fukui Prefecture, whose operational life will reach the 40-year limit at the end of November next year. The move comes after KEPCO showed reluctance to raise the maximum earthquake ground motion for the plant site. KEPCO is seeking to extend the operational life of the No. 3 reactor and filed for safety screenings in March. In order to bring about the extension, however, the utility will need to have inspections on the reactor completed by the end of November 2016, including anti-dilapidation measures.

At a regular meeting on July 1, the NRA estimated that it will take around 15 months from finalizing basic ground motion -- which serves as seismic design standards for reactors -- until screenings on other matters are completed at the plant, meaning that **the utility must finalize the basic earthquake ground motion by the end of August.**

Basic earthquake ground motion greatly varies depending on the predicted depths of an epicenter. KEPCO estimates that a quake whose epicenter's upper edge is four kilometers deep could hit the Mihama plant, while setting the figure at three kilometers deep for the nearby Takahama and Oi nuclear stations, respectively. The NRA has called on KEPCO to review the figure for the Mihama plant to make it on par with those for the other two plants.

**If KEPCO reviews and finalizes basic ground motion for the Mihama facility, it will require additional seismic reinforcement work, possibly raising the costs for safety measures. If the utility sticks to the four-kilometer-deep epicenter scenario, however, it will not be able to finalize basic ground motion by the deadline, possibly leading to the decommissioning of the reactor.**

During a July 1 press briefing, NRA Chairman Shunichi Tanaka said, "(If KEPCO fails to finalize basic ground motion by the end of August) we must consider measures including suspension of screenings. The operator (KEPCO) needs to be aware of that."

A senior KEPCO official told the Mainichi Shimbun, "We will consider whether to change our quake predictions before the next meeting for safety screenings is convened."

The upper limit of a reactor's operational life is set at 40 years, but it can be extended by up to 20 years only once.

July 7, 2015

## **Fukushima people take offense over "psychological issue"...**

### **Fukushima town residents protest official's comment about radiation safety**

<http://mainichi.jp/english/english/newsselect/news/20150707p2a00m0na019000c.html>

Nuclear evacuees from the Fukushima Prefecture town of Naraha have protested over a government official's comment that he thinks the safety of the town's drinking water is "a psychological issue." The whole town was designated as a no-entry zone after the Fukushima No.1 Nuclear Power Plant disaster, but is set to have its evacuation order lifted on Sept. 5, as announced by Vice-Minister of Economy, Trade and Industry Yosuke Takagi on July 6 when he visited the town. After the announcement, he held a press conference where, in response to a reporter's question he pointed out that radioactive cesium amounts in Naraha tap water are below the detectable level, and said, "People differ in how they think about radiation. I think whether you think (the water source is) safe or not is a psychological issue."



There is deep-rooted concern among town residents after sampling in July last year by the Ministry of the Environment found up to 18,700 becquerels of radioactive cesium per kilogram of soil at the bottom of the reservoir at the Kido Dam. That reservoir is the source of tap water for the town.

After Takagi's comment, a Naraha resident in his 60s who has already finished reconstructing his house in preparation for returning to the town said, "That comment makes me lose my desire to go back. **Does he intend to say it's people's own fault (that they feel unsafe)?**"

Another resident in her 50s said, "If he (vice-economy minister Takagi) could understand the feeling of wanting to return to one's hometown, he would not have said such a thing."

Naraha will be the third no-go zone to have its evacuation order rescinded, after the withdrawal of one for the Miyakoji district of the city of Tamura in April last year, followed by the eastern part of the village of Kawamura in October. It will be the first of the seven municipalities in the prefecture where all residents had been ordered to evacuate to have the order lifted.

At first, the government was aiming to have Naraha's order lifted in early August, but after criticism that there were not enough measures in place to help residents live there, the government delayed the lifting of the evacuation order by around a month to prepare additional measures such as increasing the number of free buses.

**"We are reminded once again that the government can't be trusted,"** said Naraha resident Noboru Endo, 43, who is living in the western Tokyo suburb of Musashino as an evacuee with his 9-year-old son Shota. He feels that the national government is not listening to the voices of those calling for the safety and ease of mind of Naraha residents.

Endo's wife Katsuko, 40, stayed behind in Iwaki, Fukushima Prefecture for her job, but Endo, who worked as a cook in Naraha, decided to evacuate with Shota, a kindergartener at the time of the disaster, for the sake of his son's health.

These days, Shota is enjoying school in Musashino. He has made many friends there and says he doesn't want to leave. With over four years having passed since the nuclear disaster, life as evacuees is changing into the norm for this family.

Every day, however, Endo wants more to return to his hometown and live there with his family. There was a briefing in late June held in Tokyo by the national government for Naraha residents ahead of the scheduled lifting of the evacuation order. Endo brought Shota with him to let him know about the current situation in Naraha and so he wouldn't forget about going back to their hometown.

However, Endo is **dissatisfied with the national government not showing any concrete measures for what it will do about the high levels of radioactive cesium at the bottom of the reservoir.**

"Even if the government tells us our tap water is safe, how can we relax? If my generation, who have children, do not return, my hometown will not recover. That's why I want to return, and I want the government to do everything it can to prepare a safe living environment there," Endo says.

July 8, 2015

## **News Navigator: Are safety measures in place for nuclear plants?**

<http://mainichi.jp/english/english/perspectives/news/20150708p2a00m0na014000c.html>

The Mainichi answers common questions readers may have about the recent development at the Sendai nuclear power plant in Kagoshima Prefecture, where Kyushu Electric Power Co. began loading nuclear fuel into the No. 1 reactor ahead of its planned restart in mid-August.

Question: Are safety measures in place at the Sendai plant?

Answer: New regulatory standards for nuclear reactors that take into account lessons learned from the Fukushima No. 1 nuclear power plant disaster came into effect in July 2013. Under the new criteria, operators of nuclear plants are required to be prepared for potential earthquakes and tsunami and will need to meet the standards in order to operate reactors. Thus far, only four reactors have passed the new criteria -- the No. 1 and No. 2 reactors at the Sendai plant and the No. 3 and No. 4 reactors at Kansai Electric Power Co.'s Takahama nuclear plant in Fukui Prefecture.

Question: Is it difficult to pass the upgraded screenings?

A: Utilities must first finalize projections for possible earthquakes and tsunami that could affect the nuclear plants they operate. Once the projections are fixed, they serve as the basis for seismic design of nuclear facilities. The greater the seismic projections are, the more reinforcement work will be required, resulting in heftier costs. The Nuclear Regulation Authority (NRA) and power companies are at odds over the issue, prolonging safety screenings. The status of safety screenings also greatly varies depending on the types of nuclear reactors.

Q: What do you mean by the types of reactors?

A: Nuclear reactors are largely classified into two types -- boiling water reactors such as those at the Fukushima No. 1 nuclear plant, and pressurized water reactors such as those at the Sendai plant. Boiling water reactors require more large-scale security measures to prevent a recurrence of a disaster like the Fukushima crisis, which has led to delays in their screenings.

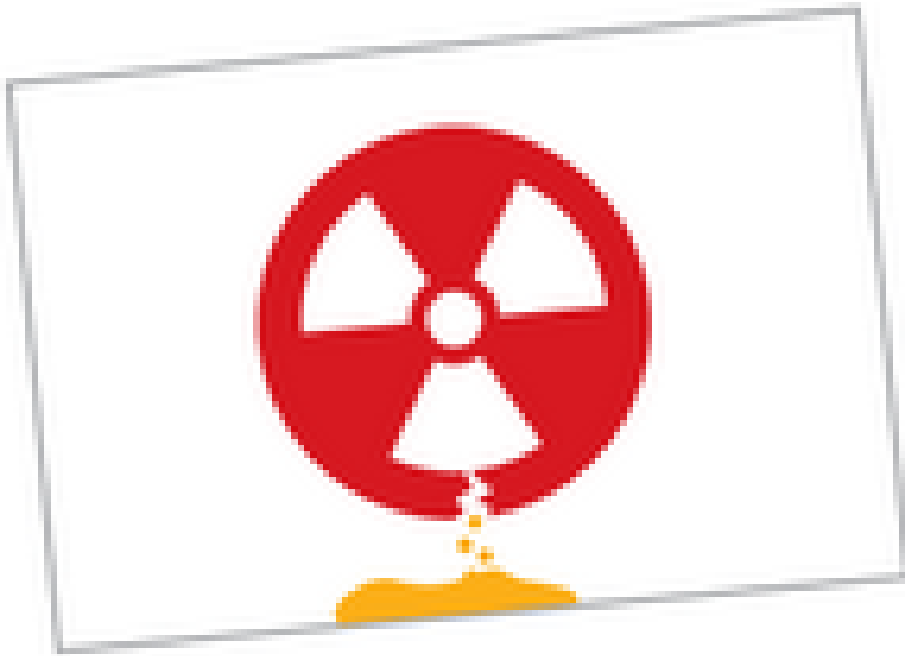
Q: Are the reactors that have cleared the new criteria safe?

A: Not necessarily. Although the NRA boasts that the new regulatory standards are of "the world's highest level," the risk of nuclear crisis can never be reduced to zero. The government and power companies need to keep in mind that when it comes to nuclear power stations, there is no end to the safety measures that can be taken. (Answers by Yui Shuzo, Science & Environment News Department)

**Please sign the petition**

**Sign petition demanding TEPCO stop dumping radioactivity into the Pacific Ocean!**

<http://www.beyondnuclear.org/japan/>



Our friends at Green Action Japan have asked us to urge our supporters to consider signing a Change.Org petition demanding that the Japanese government and Tokyo Electric Power Company cease and desist from discharging hazardous radioactivity from the destroyed Fukushima Daiichi nuclear power plant into the Pacific Ocean. For updates on the ongoing Fukushima nuclear catastrophe, and to learn more about the Japanese environmental movement's struggle to block atomic reactor restarts, be sure to visit Beyond Nuclear's Japan website section!

July 10, 2015

## Improved safety is costly

### Estimates to ensure nuclear plant safety soar past 2 trillion yen at 11 utilities

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201507100068>

Japan's 11 utilities plan to spend at least 2.4 trillion yen (\$19.69 billion) to improve the safety of their nuclear plants, 1.5 times higher than an estimate made 18 months ago, an Asahi Shimbun survey showed.

Some of the companies surveyed did not include costs for anti-terrorism measures in their estimates, so the total for safety upgrades will increase.

All 48 nuclear reactors across the nation have remained offline after the Fukushima nuclear crisis triggered by the March 2011 Great East Japan Earthquake and tsunami. The power companies are seeking to resume operations of their reactors after satisfying stricter safety standards imposed by the Nuclear Regulation Authority after the Fukushima accident.

The Asahi Shimbun asked 10 power firms that have nuclear facilities, as well as Electric Power Development Co., which is building a reactor, how much they planned to spend as of June 2015 to upgrade their equipment to clear the new NRA standards.

In January 2013, the 10 operators said they would spend 1 trillion yen on safety measures, while the figure rose to 1.6 trillion yen by January 2014.

In the latest survey, Electric Power Development, which applied for safety screening of its Oma nuclear power plant in Aomori Prefecture in December, said it plans to spend 130 billion yen to introduce safety measures on the site, which puts the nuclear facility upgrading costs for the 11 utilities at 2.4 trillion yen. Operators seeking restarts of reactors have introduced more devices and facilities than originally planned in proceeding with their improvement work because the NRA has required power companies undergoing its screening processes to do so to ensure safety.

Chugoku Electric Power Co., whose Shimane No. 2 reactor in Matsue is being examined, has set up walls to block radiation for a building that will serve as a headquarters to handle emergencies after the NRA demanded that the company act properly to prevent workers' exposure to high levels of radiation.

Although Chugoku Electric initially estimated its upgrading costs at 100 billion yen, its total expenses now exceed 200 billion yen.

Precautions to prevent fire damage at the Onagawa No. 2 reactor in Miyagi Prefecture, such as burying fuel tanks for emergency power generators underground, have raised the safety improvement costs for Tohoku Electric Power Co. from 154 billion yen to more than 300 billion yen.

Five of the 11 firms did not include expenses needed to introduce special facilities to respond to terrorist attacks. The NRA has mandated that nuclear operators set up such measures by July 2018.

Kansai Electric Power Co. estimated that introducing anti-terrorism infrastructure for the Takahama No. 3 and No. 4 reactors in Fukui Prefecture would cost 70 billion yen. Total expenses for the 11 companies to set up such facilities are expected to reach hundreds of billions of yen.

(This article was written by Masanobu Higashiyama and Toshio Kawada.)

## Please sign the petition (2)

Stop Radioactive Contamination of the Pacific Ocean from the Fukushima nuclear power plant site!

### Phase-Out Nuclear Energy Fukushima Network

**We are citizens who want to stop releasing any more radioactively contaminated water into the ocean from the Fukushima Daiichi nuclear power plant accident site.**

**We ask your cooperation for this petition so that Tokyo Electric, the Japanese government, and the Nuclear Regulation Authority will responsibly implement measures to deal with the Fukushima accident and these radioactive discharges into the Pacific Ocean.**

**The ocean is the source for all life. Help us stop radioactive contamination of the Pacific Ocean!**

It has now been more than four years since the start of the Fukushima Daiichi nuclear power plant accident on March 11th 2011.

The crisis at the Fukushima Daiichi site continues with no end in sight. However, the Japanese government is focusing much of its efforts on the restart of nuclear plants in Japan. Given the scale of the disaster at the Fukushima nuclear plant, it should instead prioritize all its efforts to reduce the risks to the environment and public health from the Fukushima plant.

Two years ago Prime Minister Shinzo Abe declared that the situation at the Fukushima nuclear site was “under control” when he was trying to secure Japan as the host for the 2020 Olympics. That was not true then and it is not true today. The Japanese government and Tepco must make all efforts to reduce the environmental threats from the Fukushima Daiichi nuclear power plant accident.

From March 11, 2011, there has been a continuous release of massive quantities of radioactive contamination not only into the air but also into the ocean. Tepco, the Japanese government, and the Nuclear Regulation Authority have continuously failed to undertake effective countermeasures to deal with liquid radioactive discharges. Moreover, they are now pushing forward plans to deliberately release these contaminated “processed” discharges into the environment, including the Pacific Ocean.

Tepco and the Japanese government have also neglected monitoring releases of contaminated water into the ocean, and, it was disclosed earlier this year that Tepco had withheld disclosing the fact that radioactive releases into the ocean had been taking place over the past years

It is unacceptable to the people of Japan that radioactive contamination is continuing in our oceans. Prime Minister Shinzo Abe must meet his Tokyo Olympic commitments and get the Fukushima accident site under control.

#### **Petition**

**We petition Tepco to put a stop to radioactive water emissions to the outside of the bay from the contaminated trenches at the site, and stop the controlled releases of contaminated water into the ocean including from the groundwater pump-up by subdrain, groundwater drain, and tanks containing contaminated water (including water that has been “processed”).**

**We petition the Nuclear Regulatory Authority to instruct Tepco to implement the above.**

**We petition Tepco and the Japanese government to go back to the drawing boards and undertake a fundamental reassessment of measures to address the radioactive water contamination at the Fukushima Daiichi site including the issues of the “ice wall” and water containing tritium. It must select a plan that can be implemented and is safe.**

**We petition the Japanese government to promptly disclose all information not just in Japanese but in multiple languages related to radioactive water contamination due to the Fukushima Daiichi nuclear power plant accident.**

**We petition Japan’s Nuclear Regulation Authority to declare a moratorium on its review of electric utility applications to restart nuclear power reactors, and, give top priority to undertaking measures to address the Fukushima Daiichi nuclear power plant accident.**

**More information:****Radioactive discharges into the ocean have been continuous since the Fukushima accident:**

In February 2015, it was revealed that heavily contaminated water had been entering the ocean from the trenches at the Fukushima site. Tepco had been monitoring these releases since April the year before and knew what was going on, but did not make it public. The Nuclear Regulation Authority had neglected to take action. Contaminated water from Unit 2's large object carry-in facility roof-top is suspected as the source of the contamination. Investigating the problem, however, is made difficult due to the very high levels of radiation around the reactor buildings, and thus the source of the contamination has not been identified. Radiation from the trenches has been entering the ocean since the start of the accident. It is a matter of urgency to prevent further releases.

**Radioactively contaminated water increases daily:**

Currently, Tepco pours approximately 320 tons of water daily into units 1, 2 and 3 reactor cores in order to cool the damaged nuclear fuel. The water, which become heavily contaminated, leaks out the bottom of the damaged reactor buildings where it then mixes with the approximately 300 tons of ground water that daily enters the reactor buildings from the cracked walls, etc. Tepco extracts just the cesium and salts from these heavily contaminated waters. About 320 tons is then returned to the cores each day to cool the damaged nuclear fuel. The remaining 300 tons is pumped into tanks set up above ground at the plant site.

**The underground by-pass, sub-drain, and underground drain----discharging this pumped up water into the ocean:**

Since May of 2014, Tepco's method of dealing with the continuous increase in contaminated water has been to pump the ground water from the 12 wells (underground by-pass) the company had created on the mountain side of the site (as opposed to the sea side), and releasing this water into the ocean. As of February 2015, this water totaled 83,740 tons (pumped up a total of 52 times), and contained a total of 15.2 billion becquerels of tritium. Tepco is also pushing to mobilize those locally engaged in fisheries to take part in the plans for releasing ground water discharge from the wells (43 sub-drains) in the vicinity of the reactor buildings and the wells on the ocean side of the site (the ground water drains). All this underground water is tritium-contaminated. Tepco, however, states that there is no problem with this release since it has set 1,500 becquerels per liter as the goal of the operational limit, and this is lower than the 60,000 becquerels per liter limit set by the national government. However, since there is absolutely no limit to the total amount of radiation that can be released, in actuality it amounts to no limitation on the quantity of radioactive materials that could be discharged into the ocean.

**"Treated" water is also contaminated! 1000 trillion becquerels of tritium are in the tanks:**

Tepco is using ALPS (the Multi-nuclide Removal System called the Advanced Liquid Processing System) as the countermeasure for getting the radioactivity out of the water which has been contaminated with very high levels of radiation. However, this equipment cannot remove the tritium of which there is several million becquerels per liter. The water that has gone through this equipment is called "processed water" by Tepco. However, this water should be considered contaminated water. The total amount of tritium contained in the tanks on site amounts to 1,000 trillion becquerels. This is 600 years worth of tritium that had been released to date at the Fukushima site. When considering the already massive quantities of other radionuclides that have been released inside and outside the bay at the Fukushima site besides tritium, no additional radiation should be released from the Fukushima site.

**The Nuclear Regulation Authority (NRA) has abdicated its regulatory responsibilities---the NRA has not gained the understanding of the Fukushima people:**

On January 2015, the Nuclear Regulation Authority decided its policy of discharging the "processed water", the liquid that had been processed through the ALPS, etc., into the ocean. The fact a regulatory

body would issue a policy which would defend the failures of Tepco's contaminated-water countermeasures is equivalent to the regulatory relinquishing its regulatory duties. The National Federation of Fisheries Co-operative Associations publicly issued an executive statement that this decision by the Nuclear Regulation Authority was "exceedingly regrettable" and stated it "strongly petitions that contaminated discharges into the ocean which could not obtain the understanding of those engaged in fisheries and the national citizenry should absolutely not be undertaken."

**Stop the discharge and deliberate release into the ocean of radioactively contaminated water:**

The Japanese government should, instead of working to restart nuclear power in Japan, prioritize all its efforts on getting the Fukushima nuclear power plant accident under control. Tepco and the Japanese government should immediately create a plan to stop the radioactive discharges into the ocean and implement that plan in order to reduce the risks to the environment and public health from the Fukushima plant.

**Stop Radioactive Discharges into the Ocean Campaign**

Organized by: Phase-Out Nuclear Energy Fukushima Network, Hairo Action Fukushima, Citizens' Nuclear Information Center, The Nuclear Regulation Authority Citizen Watchdog Group, Osaka Citizens Against the Mihama, Ohi and Takahama Nuclear Power Plants (Mihama-no-Kai), Green Action (Japan)

Blog (in Japanese): <http://stoposensui15.blogspot.com> (The Japanese petition can be downloaded from this site.) You can also sign the petition in Japanese from this site: <http://chn.ge/1Fpg9VK> and in German from this site: <https://goo.gl/ekz9zk>

Upcoming petition deadline: July 20, 2015

(The petition will continue after that date.)

The Fukushima fisheries union may be pressured into accepting some radioactive discharges into the Pacific Ocean from the damaged Fukushima Daiichi nuclear power plant. This may happen the end of July. It's important for people around the world to tell Tepco and the Japanese government now that continuing radioactive discharges from the Fukushima plant are not acceptable. This will help support the unions to hold firm.

July 9, 2015

## **TEPCO sends water cannon to Kashiwasaki-Kariwa**



Members of the Fukushima No. 1 firefighting squad aim water toward reactor buildings during a drill in March. | KYODO / POOL

## **TEPCO sending water cannon to Kashiwazaki-Kariwa nuclear plant in case of disaster**

<http://www.japantimes.co.jp/news/2015/07/10/national/tepcosendingwatercannonkashiwazakikariwanuclearplantcaseofdisaster/#.VaOi7fnwmic>

Jiji

Tokyo Electric Power Co. said Thursday it will deploy large-capacity water cannon systems at its Kashiwazaki-Kariwa nuclear power station in central Japan with the aim of preventing the diffusion of radioactive materials in case of a disaster.

Five sets of the system comprising a pumper and a water cannon that can flush 1,200 tons of water per hour will be sent to the plant in Niigata Prefecture later this month. The system will be deployed to contain radioactive materials inside the plant in the event of a nuclear accident.

The system can also be used to extinguish a fire caused by an airplane crash.

At the company's Fukushima No. 1 nuclear power plant, the disaster there blanketed much of the prefecture with radioactive fallout on March 15, 2011, four days after the plant was crippled by a powerful earthquake and tsunami.

In the event of such a disaster at the Kashiwazaki-Kariwa plant, the largest nuclear power station in the world, Tepco would spray a large amount of water to limit radioactive contamination to the areas around the reactor buildings.

The power utility plans to install an underwater curtain, known as silt fence, at drains to prevent an inflow into the ocean of tainted water pooled around reactor buildings. But it will be impossible to completely block such an inflow, according to Tepco.



Tadayuki Yokomura, manager of the Kashiwazaki-Kariwa plant, said expert instruction would be needed to enable Tepco workers to use the water cannons effectively amid the chaos ensuing from high radiation levels in the air at the plant.

The new systems will replace existing aerial platform fire trucks and concrete-pumping trucks. The Japanese Nuclear Regulation Authority is conducting a safety screening of the plant with a view to its possible restart. Tepco is slated to report to the NRA the change of its water-spraying systems.

July 13, 2015

## IAEA makes safety review of Kashiwazaki-Kariwa

### IAEA provides safety review to TEPCO plant

[http://www3.nhk.or.jp/nhkworld/english/news/20150713\\_24.html](http://www3.nhk.or.jp/nhkworld/english/news/20150713_24.html)

A team from the international nuclear watchdog says safeguards against tsunami and other measures at a nuclear power plant in central Japan have been improved, but the emergency manuals aren't sufficient.

The experts from the International Atomic Energy Agency on Monday completed a 14-day safety review of the Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture on the Japan Sea coast.

The plant's 7 reactors are currently offline, but its operator, Tokyo Electric Power Company, is hoping to restart 2 of them. It's now being screened by the country's nuclear regulator.

The IAEA team delivered its initial review to TEPCO.

TEPCO says **the team lauded 8 of the operator's safety measures**. These include a breakwater and other measures against floods, as well as power generators installed on high ground. These steps combat massive earthquakes and tsunami. Generators failed at the Fukushima Daiichi plant 4 years ago as they were placed underground.

**But the operator says the IAEA experts pointed out 6 shortcomings**. They say the station's emergency plans should be fully integrated and documented in a way that is clear and easy to use.

**The team also pointed to 9 areas that needed to be improved. These include making known more detailed design information about the facilities.**

The team leader, Peter Tarren, said TEPCO officials are apparently united in improving the plant's safety.

He said the IAEA will continue to support them to address the shortcomings.

The inspection was the first IAEA safety review of a Japanese nuclear plant since the Fukushima accident in 2011.

## IAEA Urges Kashiwazaki Kariwa To Make Better Use Of Operating Information

<http://www.nucnet.org/all-the-news/2015/07/13/iaea-urges-kashiwazaki-kariwa-to-make-better-use-of-operating-information>

Systems that gather operating experience should be integrated, and the information collected through them should be used more proactively to enable the Kashiwazaki Kariwa nuclear station to exchange lessons with the rest of the nuclear industry, the International Atomic Energy Agency has said in an assessment of operational safety at the facility in western Japan.

The agency's Operational Safety Review Team (Osart), which completed its assessment today, also said accident management guidance should cover all plant conditions, including potential events involving the spent fuel pools.

Emergency plans at the station, which has seven boiling water reactors, should be fully integrated and documented in a way that is "clear and easy to use", the team said.

**The team noted a series of good practices and made recommendations to reinforce some safety measures during the mission**, which was held at the invitation of the Japanese government.

The 14-day review, which began on 29 June, focused on safety measures that have to be in place regardless of whether the plant is operating. All seven reactors at Kashiwazaki Kariwa are offline for inspections and safety upgrades.

The team identified a number of good practices at the station that will be shared with the nuclear industry globally, including:

- Following the March 2011 accident at Fukushima-Daiichi, the Kashiwazaki Kariwa station has implemented comprehensive and robust defence measures against severe accidents, including added tsunami and flood protection as well as enhanced site and mobile backup electrical power supplies, pumps and heat exchangers;
- The plant carries out frequent drills in difficult conditions to ensure that all staff are well-prepared to deal with emergencies;
- The plant has established thorough control of all combustible materials to minimise the fire risk.

The IAEA said the team had handed a draft of its recommendations, suggestions and good practices to the management of the station, which is operated by Tokyo Electric Power Company, which also operates Fukushima-Daiichi.

The draft and any factual comments made by the station management will be reviewed at IAEA headquarters and a final report will be delivered within three months to the station and Japan's Ministry of Economy, Trade and Industry.

According to the IAEA, an Osart mission is designed as a "review of programmes and activities essential to operational safety". It is not a regulatory inspection, nor is it a design review or a substitute for an exhaustive assessment of the plant's overall safety status.

General information about Osart missions is online: <http://bit.ly/1CA3zDz>

## **Ikata plant OK after earthquake**

### **Temblor rattles Oita area; Ikata nuclear plant said OK**

<http://www.japantimes.co.jp/news/2015/07/13/national/m5-7-temblor-rattles-oita-area-tsunami-risk-ruled/#.VaN7Jfnwmif>

Kyodo

An earthquake registering a preliminary magnitude of 5.7 struck Kyushu early Monday, the Meteorological Agency said. No tsunami were reported.

The 2 :52 a.m. temblor's epicenter was in southern Oita, according to the agency. The focus was around 60 km underground.

The Ikata nuclear power plant in Ehime Prefecture in Shikoku, across a strait from Oita, reported no anomalies from the quake, according to Shikoku Electric Power Co. and Ehime prefectural officials.

Firefighters in Beppu, Oita Prefecture, said a woman in her 70s fell from her bed in her home and sustained minor injuries to her right arm.

The quake's intensity on the Japanese seismic scale of 7 was upper-5 in southern Oita Prefecture, the Meteorological Agency said. It was lower-5 in western Shikoku and Kumamoto Prefecture and 4 in Ikata.

### **Full decontamination work at soccer village**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's environment ministry has started comprehensive decontamination work at a soccer training center named J-Village near the crippled Fukushima Daiichi nuclear power plant. Workers started cleaning up the grounds on Monday.

The facility opened as the country's first national soccer training center in 1997. It had drawn more than one million visitors, including national team members, before the nuclear accident in March 2011.

Since the accident, the center, which is located **about 20 kilometers from the damaged plant**, has been used as an operation base for decommissioning nuclear reactors.

Ministry officials ordered full decontamination work at J-Village, as they plan to relocate their operation base by the end of March, 2017.

The ministry plans to continue the work until March of next year.

The Fukushima prefectural government intends to reopen the facility as a soccer training center in April 2019. It hopes to welcome athletes competing in the 2020 Tokyo Olympics and Paralympics.

July 14, 2015

## Olympics training centre 20 km from the plant



Workers mow grass as part of decontamination work, with the J-Village central building in the background, in Naraha, Fukushima Prefecture, on July 13, 2015. (Mainichi)

## Decontamination of 'J-Village' soccer facility begins ahead of 2020 Olympics

<http://mainichi.jp/english/english/newsselect/news/20150714p2a00m0na006000c.html>

FUKUSHIMA -- Decontamination of the "J-Village" soccer facility near the disaster-stricken Fukushima No. 1 Nuclear Power Plant began on July 13, with plans to accommodate players ahead of the 2020 Tokyo Olympics.

The Ministry of the Environment is handling decontamination of the facility, which was tainted with radioactive materials during the Fukushima nuclear disaster. It is slated to re-open in April 2019, providing accommodation and training facilities for Japan's men's and women's Olympic soccer teams. J-Village, which straddles the towns of Naraha and Hirono, was built in 1997 by Tokyo Electric Power Company (TEPCO) and donated to the Fukushima Prefectural Government. It is managed by "Nihon Football Village," an organization that is funded by groups including the prefectural government and TEPCO.

In the wake of the Fukushima nuclear disaster, TEPCO leased the facility and has been using it as the headquarters for its work at the Fukushima plant and as the site of its main office for recovery operations in Fukushima Prefecture. TEPCO has indicated it intends to return the facility to the prefecture in 2018. J-Village spans an area of about 50 hectares. A total of 6.9 hectares that hold structures including the central building are to be decontaminated by March 2016. Ten of the 12 fields are currently used for purposes including housing some 1,000 TEPCO employees. By March 2017 the facilities on the fields and the main office for recovery operations are to be moved to places including the town of Tomioka. TEPCO will then decontaminate the fields, and some of them will open for use in the summer of 2018.

## IAEA: TEPCO must update its emergency manual

### Tepco should update its nuclear emergency manual: IAEA inspectors

<http://www.japantimes.co.jp/news/2015/07/14/national/tepcu-update-nuclear-emergency-manual-iaea-inspectors/#.VaTR1vnwmid>

Jiji, Kyodo

NIIGATA – International nuclear inspectors have told Tokyo Electric Power Co. to update its emergency manual to reflect new safety measures imposed after the crisis at the company's Fukushima No. 1 plant began.

The order came after a team from the International Atomic Energy Agency completed two weeks of inspections of the company's Kashiwazaki-Kariwa nuclear plant.

The review was conducted at the request of Tepco, which hopes to reactivate the complex as soon as possible and salve the balance-sheet pain of replacing lost nuclear capacity with fossil fuel. All of Japan's reactors remain offline in the wake of the triple meltdown at Tepco's Fukushima No. 1 plant.

**The Vienna-based body will compile a final report within three months.**

**By inviting IAEA experts to Kashiwazaki-Kariwa, Tepco was seen as trying to secure international support for restarts.** However, the IAEA review does not replace the need to clear safety screening by the national regulator itself.

According to Takafumi Ane-gawa, managing director of Tepco, the IAEA team also said it would be preferable to reduce dependence on plant makers and allow the utility to manage all information such as changes in nuclear plant designs, in order to respond quickly to any accidents.

“The team made clear what we thought was insufficient,” Anegawa said.

“The investigation was beneficial,” Anegawa added, saying the company will act on the IAEA’s recommendations.

The IAEA advised that “accident management guidance should cover all plant conditions,” including potential accidents involving the facility’s spent nuclear fuel pools.

The agency proposed that **the plant’s emergency plans be “fully integrated and documented in a way that is clear and easy to use.”**

The nuclear experts also “identified a number of good practices” at the Kashiwazaki-Kariwa facility, including enhanced measures against tsunami and flooding and frequent drills in severe conditions to make sure all personnel are prepared for emergencies.

Tepco, which was effectively nationalized in the wake of the Fukushima meltdowns, faces massive costs for compensation and decontamination work. Its business has also suffered due to higher imported fuel costs in the absence of nuclear power.

July 16, 2015

## Radioactivity leak

### Radioactive water from Fukushima plant escapes

[http://www3.nhk.or.jp/nhkworld/english/news/20150717\\_01.html](http://www3.nhk.or.jp/nhkworld/english/news/20150717_01.html)

The operator of the crippled Fukushima Daiichi nuclear plant has found that radioactive water has overflowed from a drainage channel, spilling into the sea. This is due to heavy rain.

Workers at the complex discovered the leak at around 8:40 AM on Thursday.

The operator, Tokyo Electric Power Company, said rainwater samples taken from the channel about 2 hours later contained **830 becquerels per liter of radioactive cesium. That's above the government standard for water allowed to be released into the sea.**

**The water also had 1,100 becquerels of beta-ray emitting radioactive substances.**

An approaching typhoon has been bringing intermittent heavy rain around the plant. The utility suspects that the rain has washed away mud and soil that also contains radioactive materials.

It also presumes the amount of rainwater has exceeded the pump's capacity.

**The leak was continuing as of 5 PM. But the firm says it cannot stop the spill anytime soon** and has been monitoring the density of the radioactive substances.



Radioactive rainwater spilled into the sea from the same channel in February. The company built a barrier at channel's downstream to pump up water before it leaks into the sea.

## Reservations about Ikata restart

### Ehime governor and Ikata mayor cautious over restart of Ikata's No. 3 reactor

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201507160075](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201507160075)

By MASANOBU HIGASHIYAMA/ Staff Writer

The governor of Ehime Prefecture and the mayor of Ikata remain cautious of the Nuclear Regulation Authority's decision on July 15 to approve newly installed safety measures at the No. 3 reactor at the nuclear plant here.

"We're only at the stage where a technical decision that says the plant meets the new standards was made," Ehime Governor Tokihiro Nakamura told reporters after the decision was announced. "We cannot yet debate the wisdom of restarting the plant when the central government hasn't even requested the resumption of operations."

For his part, Ikata Mayor Kazuhiko Yamashita issued a statement that said: "We understand the decision confirms the safety of the No. 3 reactor. **We will make a judgment based on the opinions of the town assembly.**"

Neither of the leaders made specific statements regarding the local population's acceptance on reactivating the Ikata nuclear plant.

The stricter safety measures approved by the nuclear watchdog agency were implemented nationwide as a result of the 2011 nuclear disaster in Fukushima Prefecture.

The NRA has already determined the No. 1 and 2 reactors at the Sendai nuclear power plant in Satsuma-Sendai, Kagoshima Prefecture, and the No. 3 and 4 reactors at the Takahama nuclear power plant in Takahama, Fukui Prefecture, are safe to restart.

Shikoku Electric Power Co., the operator of the Ikata nuclear power plant, originally submitted a request to restart the facility in July 2013.

**A key safety concern at the plant is the Median Tectonic Line, one of the nation's most active faults, that passes near the facility.** The new safety measures take into account the possibility that a more powerful earthquake could hit compared with previous calculations.

"We needed time, as we debated a range of fundamental issues, such as the assumption about earthquakes," said NRA chairman Shinichi Tanaka.

The nuclear watchdog will now review detailed construction plans for the plant and safety procedures that are to be carried out, including those to be implemented during emergencies.

The utility also plans to install quake-resistant pipes and make other adjustments to the plant by this fall.

**It will likely take several months for the NRA to conduct its screening once the construction work is finished, which means the power plant would be ready to restart this winter, at the earliest.**

Meanwhile, Ikata Genpatsu o Tomeru Kai (Association for putting a stop to the Ikata nuclear power plant) in Matsuyama, expressed strong concern in a news conference held the same day over the NRA's latest decision. The citizens group said it plans to file an objection based on the Administrative Appeal Law.

"Meeting the new standards does not guarantee the plant will be exempt from large-scale accidents," said an official with the group.

July 17, 2015

## Reactor could be scrapped

An expert panel's draft report on a fault under a nuclear reactor in central Japan could lead to decommissioning of the facility.

The panel on Friday disclosed the report at a meeting of the Nuclear Regulation Authority on Friday.

The S-1 fault is under the No.1 reactor at the Shika nuclear plant in Ishikawa Prefecture, operated by Hokuriku Electric Power Company.

The report says there's no clear evidence that the fault is active. But it says strata above its northwestern part may have moved after a geological period called the Late Pleistocene, between 120,000 and 130,000 years ago.

New regulations in Japan ban construction of reactor buildings and other key nuclear plant facilities above faults that may have moved after the period.

The reactor could be scrapped if the panel and the authority determine that the fault could become active.

### **Panel: Fault under nuclear reactor may have moved**

[http://www3.nhk.or.jp/nhkworld/english/news/20150717\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20150717_05.html)

A panel of experts will present a draft of a report on a fault running under a nuclear reactor in central Japan on Friday. Its findings could lead to the possible decommissioning of the reactor.

The panel plans to disclose the draft at a meeting of the Nuclear Regulation Authority, or NRA, on Friday.

The report deals with a fault under the No.1 reactor at the Shika nuclear power plant in Ishikawa Prefecture, operated by Hokuriku Electric Power Company.

It says there is no clear evidence that the fault called S-1 is active. But it also says the strata above the northwestern part of the fault may have moved after a geological period called the Late Pleistocene. That's



between 120,000 and 130,000 years ago.

The experts cite a sketch of the strata drawn before the reactor's construction as well as simulations involving nearby faults.

The draft says strata believed to have accumulated after the Late Pleistocene period may have slid because of movement in the fault.

Japan's new regulations ban constructing reactor buildings and other key nuclear plant facilities above a fault that may have moved after the Late Pleistocene period.

The reactor could be scrapped if the expert panel and the NRA determine that the fault could be potentially active.

## Hokuriky Electric doesn't agree with experts' report

### Hokuriku Electric doubts experts' assessment

[http://www3.nhk.or.jp/nhkworld/english/news/20150717\\_36.html](http://www3.nhk.or.jp/nhkworld/english/news/20150717_36.html)

The president of Hokuriku Electric Power Company has expressed doubt about an expert panel's draft report that could lead to decommissioning of one of the firm's nuclear reactors in central Japan.

Yutaka Kanai said on Friday that he believes his company conducted detailed surveys and proved that a fault under the No.1 reactor of the Shika plant is not active.

But he said it's disappointing that experts of the Nuclear Regulation Authority have not agreed.

**Kanai said he thinks the experts did not comprehensively consider the firm's survey results, and made their conclusion based on hypothetical calculations and assumptions.**

He said his company will consider presenting more data and give a thorough explanation to the NRA.

Executive Vice President Akizumi Nishino said the firm does not agree with the report and is not considering decommissioning the reactor.

The report says there's no clear evidence that the fault is active. But it says strata above its northwestern part may have moved during or after a period between 120,000 and 130,000 years ago.

July 18, 2015

## Shika plant and fault lines

### NRA still antsy about fault lines under Shika nuclear plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201507180040>

By MASANOBU HIGASHIYAMA/ Staff Writer

An expert panel with the nation's nuclear watchdog remains unswerving in its assessment that fault lines running under the Shika nuclear power plant in Ishikawa Prefecture may well be active.

The position, stated in a draft report compiled July 17 that reflects an earlier finding, throws the prospect of restarting the facility's reactors into doubt.

The plant's operator, Hokuriku Electric Power Co., will have to decommission the No. 1 reactor at the plant if it is unable to overturn the finding by the expert panel of the Nuclear Regulation Authority.

The utility is set to dispute the veracity of the panel's analysis by citing "factual error" in the assessment.

Under new safety regulations for nuclear power plants introduced after the 2011 Fukushima nuclear disaster, no key facility or plant equipment--such as a reactor building or piping for cooling water--may be built on an active geological fault.

The report followed a tentative assessment the panel made in May. The panel comprises four outside specialists of geological faults and an NRA commissioner, Akira Ishiwatari.

The panel members will seek the advice of other experts before issuing an official report on the assessment of the fault at the Shika plant.

The fault in question, S-1, runs beneath the No. 1 reactor building.

The panel concluded it was impossible to rule out the possibility that the fault is active, citing evidence in the ground strata at the time of plant's construction.

Panel members also pointed out that other faults, S-2 and S-6, both of which run under the piping for cooling water used by the No. 1 and No. 2 reactors, may also be active.

However, they concluded that the impact of slippages of those faults on the equipment could be limited as the faults lie deep below the surface.

The NRA will also screen the No. 2 reactor, the other reactor at the Shika plant, to assess whether the facility can clear the new safety hurdles if Hokuriku Electric takes additional measures to reinforce the site.

**A geological fault right beneath a key nuclear power facility could destroy the site simply because of slippage. A catastrophe would not necessarily be caused by the shaking of an earthquake.**

Under the new regulations, an active fault is defined as one that has likely shifted during the past 120,000 to 130,000 years.

The Shika nuclear power plant is one of the nation's five commercial nuclear power plants that experts have looked into to assess if they have active faults.

The panel's conclusion marked the second time that an active fault has been suspected under a reactor building. **The same problem affects the Tsuruga nuclear power plant** operated by Japan Atomic Power Co.

## **Shika nuke plant reactor likely to be decommissioned due to possible active fault**

<http://mainichi.jp/english/english/newsselect/news/20150718p2a00m0na001000c.html>

The No. 1 reactor at the Shika Nuclear Power Plant in Ishikawa Prefecture is likely to be decommissioned after a panel of experts concludes that a fault just below the unit may be active.

The panel, set up within the Nuclear Regulation Authority (NRA), is expected to compile a report on the No. 1 reactor after consulting with other experts before submitting it to the NRA.

At a news conference in Tokyo on July 17, Yutaka Kanai, president of Hokuriku Electric Power Co. that operates the nuclear plant, said, "We're confident that the fault isn't active."

In a draft of the report, the panel of experts states that the possibility cannot be ruled out that part of the 780-meter-long "S-1" fault, situated just below the No. 1 reactor building, moved 120,000 to 130,000 years ago or later. The conclusion is based on geological diagrams of the area's past strata as well as photos.

Hokuriku Electric insisted that the fault is not active based on volcanic ash in the stratum and other factors. However, the panel dismissed the utility's claim, saying it cannot be proven with the hard evidence available.

The panel has drawn a similar conclusion on a fault just beneath a key facility of the power station's No. 2 reactor. If large-scale reinforcement work needs to be done on the reactor, Hokuriku Electric's plan to reactivate the No. 2 unit will likely be severely delayed.

July 20, 2015

## **New radiation data publication system (for the next emergency)**

### **Tests begin on radiation data publication system**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear regulators have begun testing a new radiation data-publicizing system for residents near a power plant.

The Nuclear Regulation Authority says it has begun to test-run the system it has developed in an area surrounding the Sendai nuclear power plant in Kagoshima Prefecture, western Japan.

Kyushu Electric Power Company aims to bring the plant back online next month.

**The new system enables the central government and municipalities to provide their radiation data online for other organizations as well as for local residents during emergencies.**

The system will allow users to access a special site on the Authority's website to obtain such data in the event of a nuclear accident.

**In the case of the Sendai plant, the website provides updated figures from 73 observation points within a 30-kilometer radius from the plant, as well as from cars equipped with radiation-monitoring equipment.**

Figures are colored in red or yellow when they exceed government standards.

New nuclear emergency guidelines call for the evacuation of residents within a 5- to 30-kilometer radius from a power plant if radiation levels exceed the government limit.

The government reviewed the guidelines following the 2011 Fukushima Daiichi accident.

The regulators say **they will fully launch the system in August after one month of testing. They say they will also set up web sites for other nuclear power plants.**

July 22, 2015

## Just an "open-air prison of confinement"

### Fukushima scrub-down aims to make villages safe, although woods may remain no-go zones

<http://www.japantimes.co.jp/news/2015/07/22/national/science-health/fukushima-scrub-aims-make-villages-safe-although-woods-may-remain-no-go-zones/#.VbCKEvnwmif>



Contaminated earth is piled up in bags at a collection site in Iitate, Fukushima Prefecture, on Friday. | AFP-JIJI

by Natsuko Fukue  
AFP-JIJI

IITATE, FUKUSHIMA PREF. – Sweating inside their plastic protection suits, thousands of men toil in Japan's muggy early summer in a vast effort to scrub radiation from the villages around Fukushima. The mission is to decontaminate hundreds of square kilometers that were polluted when reactors went into meltdown after huge tsunami struck the Fukushima No. 1 nuclear plant in March 2011.

No stone is left unturned: Diggers scrape away the top layer of earth in fields, school courtyards and around the buildings of villages, while houses, buildings, roads and parking lots are scrubbed clean.

**At least 20,000 people are involved in the cleanup**, according to the Environment Ministry. The workers wear the special gloves, masks and boots required for workers in the nuclear industry.

**There are currently around 2.5 million black bags** filled with contaminated soil, plants and leaves piled up at the sites or in one of the nearly 800 temporary outdoor storage facilities set up across the disaster zone.

The effort comes as the central government prepares to declare sections of the evacuation zone habitable again.

That will mean evacuees can return to the homes they abandoned more than four years ago. It will also mean, say campaigners, that some people will have no choice but to go back because it will trigger the end of some compensation payments.

Government-run decontamination efforts are underway in 11 cities where Tokyo says that at present, anyone living there would be exposed to radiation levels of more than 20 millisieverts (mSv) a year.

The globally accepted norm for radiation absorption is 1 mSv per year, although the International Atomic Energy Agency and others say anything up to 20 mSv per year poses no immediate danger to human health.

The town of Naraha, which lies just 20 km from the plant, is expected to be declared safe in September.

The government intends to lift many evacuation orders by March 2017, if decontamination progresses as it hopes.

Still, the area immediately surrounding the plant remains uninhabitable, and storage sites meant to last 30 years are being built in the villages closest to the complex.

**For now, only residential areas are being cleaned in the short-term, and the worst-hit parts of the countryside are being omitted, as recommended by the IAEA.**

But that strategy has troubled environmentalists, who fear **that could lead to re-contamination as woodlands will act as radiation reservoirs, with pollutants washed out by rain.**

In a report on decontamination in Iitate, a heavily forested area northwest of the plant, the environmental group Greenpeace says these selective efforts will effectively confine returnees to a relatively small area of their old hometowns.

"The Japanese government plans, if implemented, will create an open-air prison of confinement to 'cleaned' houses and roads ... and the vast untouched radioactive forests continue to pose a significant risk of recontamination of these 'decontaminated' areas to even higher levels," declares the report, published Tuesday.

Some 39 other municipalities that were not evacuated after the meltdowns, and which have radiation levels deemed safe for humans, are also being decontaminated by local authorities.

July 24, 2015

## M4.7 quake shakes Ehime Pref

### M4.7 quake jolts Japan's southwestern Ehime Prefecture

<http://mainichi.jp/english/english/newsselect/news/20150724p2g00m0dm111000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 4.7 shook Ehime Prefecture in southwestern Japan on Friday, the Japan Meteorological Agency said.

The quake occurred at 5:53 p.m. and originated in southern parts of Ehime at a depth of around 40 kilometers. It registered 4 on the Japanese seismic intensity scale of 7 in Seiyo city in the prefecture. No tsunami warning was issued.

**Shikoku Electric Power Co. said it has not detected any problems at its three-reactor Ikata nuclear power plant in Ehime Prefecture.**

July 27, 2015

## Emergency drill at Sendai plant

### Crucial emergency test begins at Sendai nuclear plant ahead of upcoming restart

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201507270069>

An emergency drill to contain a severe accident like the Fukushima nuclear disaster started at the Sendai nuclear power plant on July 27, a final hurdle the operator must clear before a planned restart next month. The Nuclear Regulation Authority, the nation's nuclear watchdog, inspected the site to see if plant workers followed Kyushu Electric Power Co.'s revamped procedures for responding to a crisis. The steps were approved by the NRA in May.

The No. 1 reactor of the plant in Satsumasendai, Kagoshima Prefecture, is expected to be the nation's first to go back online under the new regulations set by the NRA for nuclear power plants after the 2011 Fukushima accident.

Kyushu Electric plans to restart the reactor as early as Aug. 10.

On the first day of the four-day drill, the exercise began at 10 a.m. under a scenario that the plant lost the ability to cool its No. 1 reactor due to the loss of power, just like the 2011 accident at the Fukushima No. 1 nuclear power plant, operated by Tokyo Electric Power Co.

The scenario also envisages that the nuclear fuel rods begin melting 19 minutes after the water level in the reactor began dropping.

During the drill, Kyushu Electric employees are expected to confirm steps to prevent a rupture of the reactor's containment vessel to avert the release of a huge amount of radioactive materials into the atmosphere.

At the central control room, utility employees worked to secure power from large-scale, mobile power generators via remote control.



The backup devices were installed on the plant's premises in line with the new regulations. The employees also simulated the operation of equipment that lowers the concentration of hydrogen in the containment vessel to reduce the possibility of a hydrogen explosion. As part of efforts to bolster its ability to deal with a serious accident, Kyushu Electric increased the number of night staff on duty at the plant to 52 from 12 prior to the Fukushima disaster. (This article was written by Junichiro Nagasaki and Maiko Kobayashi.)

## **Emergency drill held at Sendai reactor ahead of expected restart**

[http://www.japantimes.co.jp/news/2015/07/27/national/emergency-drill-held-at-sendai-reactor-ahead-of-expected-restart/#.VbYff\\_nwmic](http://www.japantimes.co.jp/news/2015/07/27/national/emergency-drill-held-at-sendai-reactor-ahead-of-expected-restart/#.VbYff_nwmic)

JII

SATSUMASENDAI, KAGOSHIMA PREF. – Kyushu Electric Power Co. began a four-day emergency drill Monday at its Sendai nuclear plant in Kagoshima Prefecture, as the utility gears up to restart the No. 1 reactor as early as mid-August.

Kyushu Electric Power Co. began a four-day emergency drill Monday at its Sendai nuclear plant in Kagoshima Prefecture, as the utility gears up to restart the No. 1 reactor as early as mid-August. The drill is part of the Nuclear Regulation Authority's safety checks. It assumes scenarios such as water leaking from pipes of the reactor, and a water injection pump ceasing to function properly. Fifty-two people, including Kyushu Electric employees, will take part in the drill each day. Monday's exercise was inspected by 15 officials from the NRA.

The drill will not involve people living within 30 km of the power plant. Nuclear disaster response guidelines, which were revised after the disaster at Tokyo Electric Power Co.'s Fukushima No. 1 plant in 2011, require advance measures be taken for areas within 30 km of a nuclear facility to ensure smooth evacuation in an emergency.

On Monday, the drill was carried out in the main control room for the No. 1 reactor to check the remote control switch for an emergency power system and to examine a system aimed at preventing a hydrogen explosion.

In the 2011 Fukushima No. 1 disaster, hydrogen explosions rocked the buildings housing reactors 1, 3 and 4, while reactors 1, 2 and 3 suffered core meltdowns.

From Tuesday through Thursday, Sendai plant workers will practice measures such as cooling the reactor and lowering the temperature and air pressure inside the containment vessel.

Kyushu Electric finished loading a total of 157 fuel assemblies, or bundles of fuel rods, into the No. 1 reactor earlier this month and has since been checking pipes, fuel control rods and other equipment for possible damage.

All nuclear reactors in Japan remain offline in the wake of the catastrophe at Fukushima No. 1.

## **Nuclear plant in final test before going online**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of a nuclear power plant in southern Japan has begun a 4-day emergency drill based on a meltdown scenario in a bid to clear a final regulatory hurdle and resume operations.

The Sendai plant will be the first in Japan to go back online if it clears the test. The operator, Kyushu Electric Power Company, hopes to restart the reactor as early as August 10th and begin generating electricity 3 days later.

The utility has equipped the plant with additional power generators and other equipment based on requirements introduced after the Fukushima Daiichi crisis in 2011. But it is also required to carry out a drill for a severe accident to show it can handle major emergencies at the plant in Kagoshima Prefecture.

The exercise, which started Monday, is based on a scenario where the plant's No.1 reactor has lost cooling water due to a rupture in pipes and a failure in the emergency pump system. The malfunction causes nuclear fuel to begin melting in less than 20 minutes.

Workers in a control room responded to red warning lights by checking water levels and other indicators for the reactor. They established there had been a total loss of power. 10 minutes into the drill, another 20 workers came to the control room to help.

Commissioner Toyoshi Fuketa and 5 inspectors from the Nuclear Regulation Authority are observing the drill to check workers follow correct procedure within set times.

The drill will follow several more steps through Thursday before culminating in a containment of the crisis. 52 people, mainly workers at the Sendai plant, will be involved. They will prevent a massive release of radioactive materials by applying emergency generators and pumps.

## New 8.7 meters seawall in Nahara

### Construction of seawall begins in Naraha

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Construction of a new seawall has begun in a town near the Fukushima Daiichi nuclear plant, as authorities prepare to lift an evacuation order covering the area in September.

The seawall in Naraha Town was seriously damaged by the March 2011 tsunami. Construction of a new one had been delayed as radiation from the nuclear accident restricted entry to the town for about a year and a half.

Local government officials took part in a groundbreaking ceremony in the town on Monday ahead of the construction. Three trucks unloaded soil at the site after the ceremony.

The new seawall will be about 1.8 kilometers long. It will be built more inland than the previous one.



Its height will be 8.7 meters above sea level. That's 2.5 meters higher than the previous one.

The construction will cost about 67 million dollars, and will be completed by March 2018.

The town of Naraha has a population of about 7,400. The evacuation order, covering almost the entire town, is scheduled to be lifted on September 5th.

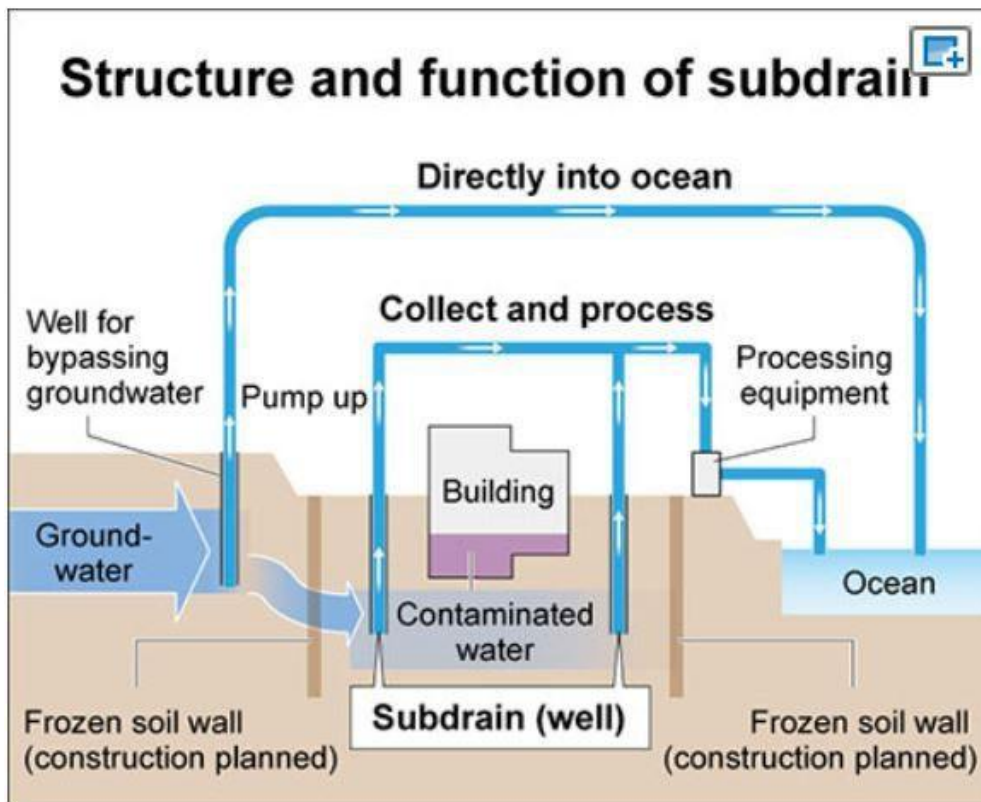
Town Mayor Yukiei Matsumoto says some residents still suffer from memories of the tsunami, but he expects the construction to give them relief about returning home.

July 28, 2015

## Fishermen approve TEPCO subdrain plan

### Fukushima fishermen OK TEPCO plan to release decontaminated water into sea

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201507280063>



The Asahi Shimbun

SOMA, Fukushima Prefecture--Fishermen in northern Fukushima Prefecture gave Tokyo Electric Power Co. the green light on July 27 to release radioactive groundwater from the crippled Fukushima No. 1 nuclear power plant into the ocean after it undergoes decontamination treatment.

The Soma-Futaba fisheries cooperative association approved TEPCO's "subdrain plan" at a board member meeting after earlier approval by the Iwaki fisheries union, which brings together fishermen operating on the southern Fukushima coast, to back the plant operator's plan.

After the decisions by the two fisheries unions, the Fukushima Prefectural Federation of Fisheries Cooperative Associations is expected to formally approve the subdrain plan in mid-August at the earliest. To deal with the accumulation of contaminated groundwater at the plant, TEPCO and the central government implemented from May last year a "groundwater bypass" that intercepts clean groundwater before it flows into contaminated reactor buildings and reroutes it safely around the facility into the ocean.

Under the subdrain plan, the utility will pump 500 tons of water from 41 subdrain wells around the premises of the plant's four crippled reactors each day. It expects that the amount of groundwater flowing into the reactor buildings will be drastically reduced, and the amount of contaminated water generated at the plant will be halved from the current levels.

The water will be released into the sea after it undergoes decontamination treatment to reduce cesium levels to below 1 becquerel and beta ray-emitting radioactive materials to less than 3 becquerels.

Because the decontamination equipment cannot remove tritium, water contaminated with the radioactive isotope that emits 1,500 becquerels or more of radiation will not be released into the sea.

TEPCO has sought the fisheries cooperatives' approval of the subdrain plan.

But TEPCO's delay in disclosing the flow of radioactive water into the ocean whenever it rained--which came to light in February--hampered negotiations with the fisheries unions, which felt the incident undermined their confidence in the utility.

At the meeting of the board members of the Soma-Futaba fisheries union, TEPCO officials explained that the subdrain plan was essential in reducing the flow of contaminated water into the ocean, according to Hiroyuki Sato, the union president.

The members who had remained strongly opposed eventually recognized the need for the subdrain plan and agreed to approve it, Sato said.

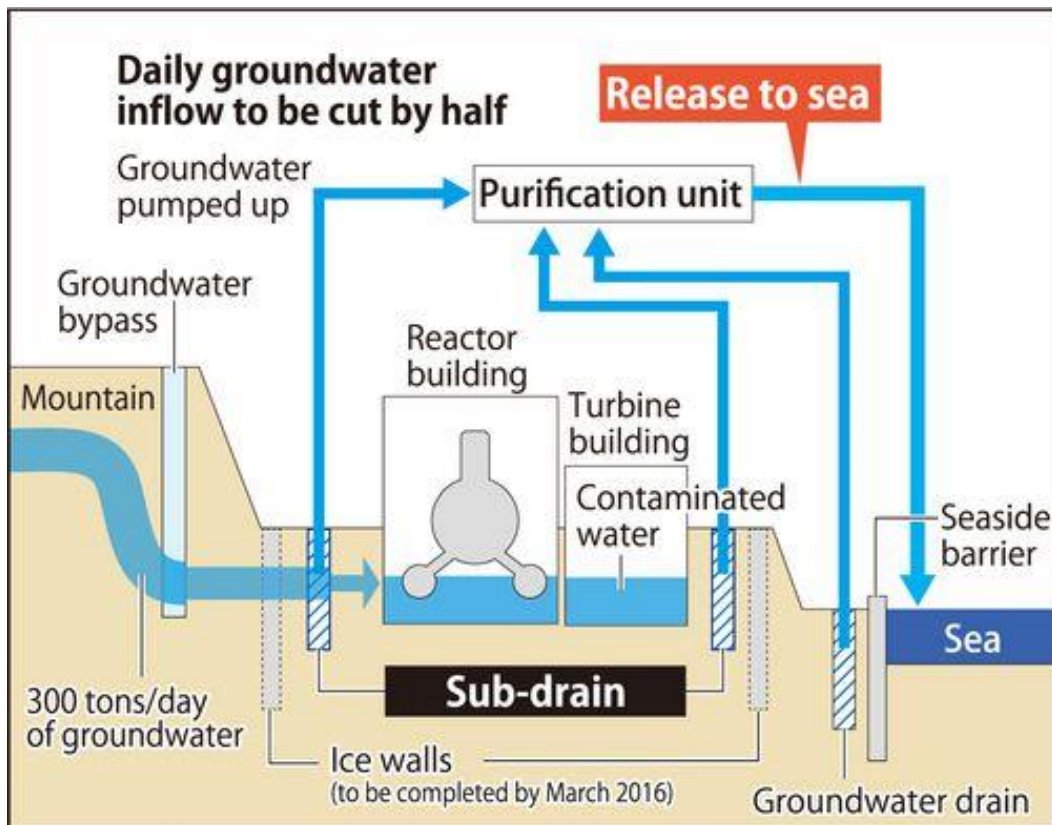
Based on requests from the two local fisheries cooperatives, the prefectural federation of fisheries unions will demand that TEPCO and the central government conduct periodic checks on waters emitted from the subdrain program.

The prefectural union will also request that a third-party watchdog monitor the process to prevent contaminated water from flowing into the ocean.

It will also request that TEPCO and the government to continue to provide compensation to local fishermen, while taking effective measures when the subdrain project causes harmful rumors about their products.

## **Fukushima fisheries co-ops approve TEPCO's contaminated water 'subdrain plan'**

<http://mainichi.jp/english/english/newsselect/news/20150728p2a00m0na016000c.html>



TEPCO's sub-drain plan (Mainichi)

FUKUSHIMA -- Local fisheries cooperatives have approved of Tokyo Electric Power Co. (TEPCO)'s "subdrain plan" at the crippled Fukushima No. 1 Nuclear Power Plant whereby radioactively contaminated groundwater goes through a purification unit and is released to the sea as they have no better options to speed up the recovery of the local fishing industry.

"We are compelled to agree (with TEPCO's plan) for the recovery of the fishing business in Fukushima Prefecture," Hiroyuki Sato, 59, head of Soma-Futaba fisheries cooperative association told reporters after a board meeting on July 27 in Soma, Fukushima Prefecture. He looked relieved to have achieved consensus among association board members to approve the subdrain plan. Sato, along with the cooperative's other senior officials, have grown distrustful of TEPCO and the government after a series of incidents of contaminated water leaking into the sea. However, they judged that delaying making a decision on the matter would not provide them with another option.

TEPCO and the government have explained the subdrain system to Fukushima fisheries cooperatives as one of the best solutions for controlling the contaminated water leak.

There are three fisheries cooperative associations in Fukushima Prefecture -- Soma-Futaba and Iwaki that mainly operate coastal fishing and Onahama trawl fishery engaged in distant ocean fishing. Senior officials from TEPCO and the Ministry of Economy, Trade and Industry have been visiting these cooperatives since this past spring to apologize for a series of contaminated water mishaps.

If the subdrain system is utilized, it will not only reduce the amount of groundwater flowing into nuclear reactor buildings, but is also expected to stop contaminated water leaking into the harbor with seaside barriers surrounding No. 1 to No. 4 reactor buildings. TEPCO asked for understanding of the subdrain system from the cooperatives, explaining that unless the seaside barriers are closed at an early stage, over 300 metric tons of contaminated water will flow into the sea every day.

A sense of crisis among the fisheries cooperatives has driven them to approve the subdrain plan. The number of Soma-Futaba and Iwaki cooperative members fell after the March 2011 disaster. Soma-Futaba cooperative saw its membership drop from 1,119 to 947 and Iwaki from 433 to 362 in four years. Furthermore, the fish haul from test fishing carried out about twice a week off the coast outside the 20-kilometer no-go zone around the nuclear plant totals less than 10 percent of the pre-disaster level for both cooperatives. Soma-Futaba head Sato began telling people close to him around May this year that he couldn't face his son who had succeeded his fishing business after the disaster. The Iwaki fisheries cooperative, which announced approval of the subdrain plan earlier than Soma-Futaba, shares a sense of crisis for the Fukushima fishing industry. Cooperative chief Masakazu Yabuki, 79, says the early start of full operations is crucial to keep Iwaki's fishing industry alive. He added that the decision to accept the subdrain plan shows how desperate local fishermen are, saying, "We just have to trust the government and TEPCO."

Those belonging to the Ukedo and Tomikuma branches of the Soma-Futaba cooperative resisted the TEPCO plan until the very end. These fishermen worked in coastal areas such as Namie, Futaba and Tomioka, located within the 20-kilometer zone, but they scattered to remote locations after the disaster. Test fishing operations are not being carried out in these areas, and local fishermen have no prospects of restarting their businesses.

Soma-Futaba's Sato announced on July 27 that he began negotiating with Fukushima Prefectural Federation of Fisheries Cooperative Associations Chairman Tetsu Nozaki to expand the areas where test fishing can be operated. Sato said he persuaded the two branches by telling them that the seaside barriers need to be shut as early as possible for the expansion of test fishing.

Meanwhile, some fishermen are concerned about opposite effects of TEPCO's subdrain plan regarding damage by harmful rumors. Takehiko Niizuma, a 54-year-old trawler fisherman and a member of the Iwaki fisheries cooperative, remained suspicious, saying, "The plan could give the government and TEPCO excuses that even highly contaminated water (stored in tanks) can be released into the sea if it's processed or treated through the subdrain system."

July 31, 2015

## Disaster drills at Sendai plant

### Large-scale disaster drills held at Kyushu nuclear plant ahead of planned reactivation

<http://mainichi.jp/english/english/newsselect/news/20150731p2a00m0na005000c.html>

KAGOSHIMA -- Kyushu Electric Power Co. carried out large-scale disaster drills at its Sendai Nuclear Power Plant's No. 1 reactor on July 30, as it moves toward a planned restart of the reactor in August. The Nuclear Regulation Authority (NRA)'s secretariat had planned to make the utility repeat the drills if there were any large problems with them, but says it received no reports of any glitches. The secretariat had 15 inspectors watching over the drills. July 30 also saw the completion of all of the NRA's pre-use inspections of the reactor, which started in March this year.

The drills began on July 27, and were conducted under a scenario that the reactor had lost all its power supplies and was going to suffer a meltdown. Fifty-two people participated in the drills, over around 26 hours spread across the four days. On the last day, workers practiced the procedure for sending cooling

water into the air conditioning system of the reactor's containment vessel to decrease pressure in the vessel.

Sendai Nuclear Power Plant passed the NRA's safety inspection in September 2014, and by November that year it had gained local agreement to restart the reactor.

Starting Aug. 4, Kyushu Electric will spend around five days raising the pressure and temperature of the reactor as it performs final checks in preparation for a restart. Kyushu Electric plans to restart the reactor on Aug. 10, and begin producing and sending electricity from it on Aug. 13. It intends to resume commercial operations with the reactor in mid-September.

The reactor would become the first operational nuclear reactor in Japan since the No. 3 and No. 4 reactors at the Oi Nuclear Power Plant in Fukui Prefecture were active from July 2012 to September 2013. The Sendai Nuclear Power Plant reactor is set to become the first nuclear reactor restarting under new, strengthened safety procedures incorporating lessons from the Fukushima No. 1 Nuclear Power Plant disaster.

## Advisory group on volcanoes to be established near plants

### Volcano advisory group for nuclear plants planned

[http://www3.nhk.or.jp/nhkworld/english/news/20150731\\_35.html](http://www3.nhk.or.jp/nhkworld/english/news/20150731_35.html)

Japan's Nuclear Regulation Authority plans to establish an advisory group on volcanos near nuclear plants.

The regulator has called on power companies to take measures in case of signs of a huge eruption at such a volcano.

Participants at a meeting on Friday agreed that the NRA will set up the group as early as September. It would offer advice on coming up with criteria for such signs and judging whether observational data involve them.

The group is **to include volcano experts and officials from related government agencies.**

The Sendai nuclear power plant in Kagoshima Prefecture, southwestern Japan, is expected to go back online in August. It could be the first plant to do so under regulations established after the Fukushima Daiichi accident.

The agency says the possibility of a huge eruption near the plant during its operating life is sufficiently small. But it asked the operator of the plant to stop its reactors and move its nuclear fuel if data show signs of a huge eruption.

Volcano experts, however, say **such signs may not be detectable.**

August 2, 2015

## Monitoring devices at Rokkasho plant not working

### Monitors fail at nuclear fuel reprocessing plant

[http://www3.nhk.or.jp/nhkworld/english/news/20150803\\_11.html](http://www3.nhk.or.jp/nhkworld/english/news/20150803_11.html)

A nuclear fuel reprocessing firm in northern Japan says **some of its monitoring devices of high level radioactive materials have stopped working**. It says the failure poses no threat to the environment.

Japan Nuclear Fuel Limited reported the troubles at a plant compound in Rokkasho Village, Aomori Prefecture, on Sunday evening.

It said 4 monitoring devices failed at about the same time at the plant's facility. **The facility extracts uranium and plutonium from melted spent nuclear fuel while separating highly radioactive wastes.**

The failed devices include a leak monitor for highly radioactive liquid-waste as well as a pressure monitor for an exhaust gas processing system.

The Aomori Prefectural government and the firm say workers are currently unable to monitor any potential leak inside the facility. But the firm also stresses that other devices in the plant indicate no radioactive leaks outside the facility.

The company says when the failure occurred lightning strikes were observed near the plant. It says it is studying whether there is a connection.

The plant has not been running at full capacity, as it has been **undergoing government screening ahead of the planned formal launch in March.**

August 3, 2015

## Evacuation plans in 30-km perimeter: Less than half completed

### Survey: 52% of medical, care facilities near nuclear plants lack evacuation plans

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201508030038>

More than half of medical and nursing-care facilities within 30 kilometers of nuclear power plants across Japan have not compiled mandatory evacuation plans in the event of an accident, an Asahi Shimbun survey showed.

The completion ratio for evacuation measures was far lower than the national average around the Sendai nuclear power plant in Satsuma-Sendai, Kagoshima Prefecture, which is expected to resume operations on Aug. 10 at the earliest.

Just two of 85 medical institutes and 15 of 159 nursing and other care facilities within a 30-km radius of the Sendai plant have developed evacuation plans, according to the survey.

The central government in 2012 extended the range of its disaster preparation zone from 8 to 10 km of nuclear facilities to 30 km. It mandated medical institutes, nursing homes and care facilities within the 30-km radius to specify evacuation destinations for patients, which routes to take and what means of transportation to use if a nuclear disaster strikes.

Only 223, or 34 percent, of the 650 medical institutions located in the zone throughout Japan said they have devised such evacuation plans for patients, according to the survey.

Fifty-one percent of all 2,489 nursing-care facilities within 30 km of nuclear plants said they have made emergency evacuation plans.

In total, around 47 percent of the facilities have compiled evacuation plans, according to the survey.

Currently, all reactors in Japan are offline. But Kyushu Electric Power Co. is pushing for its Sendai plant to be the first restarted under stricter safety guidelines introduced following the March 2011 Fukushima nuclear disaster.

The wider disaster preparation zone came about in light of the confusion that hampered and prolonged the evacuation of residents and patients from around the stricken Fukushima No. 1 nuclear power plant. However, the Kagoshima prefectural government in March this year narrowed the area in which medical and care facilities are obliged to create evacuation plans to 10 km, arguing, "It is unrealistic for all facilities within 30 km to develop emergency plans."

All facilities inside the 10-km radius of the Sendai plant have created evacuation plans.

In the event of a nuclear accident, the Kagoshima prefectural government will coordinate evacuation procedures for each facility outside the 10-km zone based on wind direction and other factors, prefectural government officials said. The prefecture has gained the central government's approval for the strategy, according to the officials.

The Takahama nuclear plant in Fukui Prefecture and the Ikata nuclear plant in Ehime Prefecture are also expected to be allowed to resume operations in the near future. All medical and care facilities in the prefectures within 30 km of the plants said they have created emergency evacuation plans for the patients, according to the survey.

In contrast, no facility in Shizuoka Prefecture has developed evacuation plans because the prefectural government does not have its own emergency strategy and remains unable to issue instructions to hospitals and other facilities.

The central government also obliges the 135 cities, towns and villages within 30 km of nuclear power plants to compile lists of people who cannot evacuate by themselves. Ninety-nine--or 73 percent--said they have made such lists.

Consent from the people listed is required for their information to be disclosed to police and firefighting organizations. Problems concerning personal information are likely behind the delay in compiling the lists.



August 4, 2015

## Damage in No.3 pool may delay fuel removal

### Fuel rod casings found damaged by debris

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Workers at the crippled Fukushima Daiichi nuclear plant have been preparing to remove hundreds of fuel rod assemblies from a pool of the facility's No. 3 reactor building.

The workers have found damaged fuel rod containers after removing a device that had fallen on them during the 2011 disaster. They're now checking whether the damage will affect their plan to remove fuel from the pool.

A 20-ton device for moving fuel rods in and out of the pool on the building's top floor was removed on Sunday, more than 4 years after the nuclear accident. High radioactivity prevented workers from carrying out the removal smoothly.

The plant's operator, Tokyo Electric Power Company, checked the condition of 566 fuel rod assemblies in the pool.

Workers found that the metal casings of 4 assemblies had been distorted and have twisted handles. This is evident in images released by the operator. It says the fuel rods appear undamaged, as radiation levels in the pool have shown no irregularities.

The utility is checking for other damage and studying how to remove the distorted casings from the pool.

Removing fuel rod assemblies from spent fuel pools is an important part of decommissioning work at the plant. More than 1,500 assemblies are still in pools at 3 of the facility's reactor buildings.

August 5, 2015

## Sendai: Not all legal procedures completed

### NRA approves long-term operating plan for Sendai nuclear plant

<http://www.japantimes.co.jp/news/2015/08/05/national/nra-approves-long-term-operating-plan-sendai-nuclear-plant/#.VcH2OPnwmos>

Kyodo

The Nuclear Regulation Authority on Wednesday approved Kyushu Electric Power Co.'s management plans, which are required to operate its reactor at the Sendai plant for more than 30 years.



The approval came days before the unit's planned restart under stricter safety requirements imposed following the 2011 Fukushima nuclear disaster.

**The nuclear watchdog endorsed the steps even though Kyushu Electric has not completed all of the procedures, including evaluation of the quake-resistance of some aging instruments. That sparked criticism that the regulator rushed the approval before the reactor's resumption, which is expected as early as next Monday.**

Japanese power companies that want to operate their nuclear plants for more than three decades are required to draw up long-term measures to ensure the safety of aging plant equipment. **The regulator decided to allow Kyushu Electric to put off completing the remaining steps for one year.**

The regulator said the long-term measures can be approved after the 31-year-old No. 1 unit at the plant goes back online. But anti-nuclear activists have intensified criticism of the planned resumption given that **not all of the procedures required by law have been completed.**

Last September, Kyushu Electric's Sendai plant became the first nuclear facility in Japan to meet new safety standards created in the wake of the Fukushima nuclear crisis, a process necessary before a reactor can go back online.

**Safety reviews for the resumption of nuclear plants are conducted separately from those required for long-term operations.**

## More problems at Monju plant

### New maintenance breaches found at Monju plant

[http://www3.nhk.or.jp/nhkworld/english/news/20150805\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20150805_28.html)

Japanese government inspectors have disclosed a violation of maintenance rules at the Monju fast-breeder reactor in Fukui Prefecture.

A report cites 800 cases of repair request documents being improperly stored.

The Monju plant, on the Sea of Japan coast, has an extensive history of safety problems. Monju was shut down after a sodium leak in 1995. It was restarted on a test basis in 2010, but was soon taken offline again due to a series of problems.

The Nuclear Regulation Authority has effectively banned test runs at Monju since May 2013. It asked the plant's operator, the Japan Atomic Energy Agency, to draw up a plan for improved maintenance. The operator submitted the plan last December.

Government officials reported the latest breaches to the authority on Wednesday. Their findings are from a follow-up inspection in June.

The operator says the improper storage of the documents posed no safety risk, because the repairs were carried out based on a computerized list that's not a part of the maintenance procedure.

Yet the authority has determined the practice to be a safety violation, noting similarities with previous

problems at the plant.

Inspectors also learned that some records that are required to be kept for 10 years were missing.

The authority says it plans to step up its monitoring, describing the situation at Monju as serious.

August 8, 2015

## Level 2 problem at Sendai No.1

### Cooling system pump at Sendai nuclear plant stopped due to faulty vibration meter

<http://mainichi.jp/english/english/newsselect/news/20150808p2a00m0na007000c.html>

SATSUMASENDAI, Kagoshima -- One of three cooling system water pumps at the Sendai Nuclear Power Plant's No. 1 reactor, now being prepared for reactivation, was halted after staff noticed an unusual vibration meter reading, Kyushu Electric Power Co. announced on Aug. 7.

According to Kyushu Electric, **the pump is inside the No. 1 reactor's containment vessel, and the meter measures the vibration of the pump shaft.** At 10:22 a.m. on Aug. 7, a worker in the central control room confirmed that the vibration meter was displaying a lower than usual value. At 6:30 p.m. workers stopped the pump, inspected it and found that the pump's vibration meter was defective. They replaced a part of the vibration meter.

The pump was started at full operation on Aug. 4, to raise the temperature and pressure of cooling water for the reactor. The utility says the incident will not affect its schedule for restarting the No. 1 reactor on Aug. 11.

**Since July, Kyushu Electric is classifying problems that occur at the No. 1 reactor on a five-level scale from 0 to 4, and it has decided it will announce problems of level 2 or higher, which could impact the restart schedule. The pump trouble was the first such announcement, and was a level 2 problem.**

## Serious safety concerns subsist

### EDITORIAL: Concerns about evacuations in nuclear emergencies continue unabated

<http://ajw.asahi.com/article/views/editorial/AJ201508080033>

The 2011 nuclear disaster resulted in a horrifying scenario in which nuclear fuel inside reactors melted down, triggering a massive release of radioactive materials into the environment outside the Fukushima No. 1 nuclear power plant.

The International Atomic Energy Agency (IAEA) has proposed a system of five layers of safety measures for nuclear power plants. The nuclear watchdog urges each country operating nuclear power plants to adopt this approach, known as "defense-in-depth," to ensure the facilities operate safely.

The final barrier in this system is prevention of radiation exposure to people living in areas around nuclear power plants.

Specifically, **this fifth and final stage of defense-in-depth should be implemented in the form of plans developed by the central and local governments to mitigate the consequences of nuclear accidents and evacuate local residents.**

When the Fukushima disaster occurred, however, no effective plan existed for the mass evacuation of local residents in Japan. This is because the possibility of a severe nuclear accident had been ruled out.

As a result, the accident triggered utter chaos in local communities around the Fukushima plant.

Now, more than four years since the disaster unfolded, Kyushu Electric Power Co.'s Sendai nuclear power plant in Kagoshima Prefecture is expected to restart its No. 1 reactor as early as Aug. 11.

**But the mitigation and evacuation plans currently in place are far from reassuring to local residents. The responsibility to establish the "final barrier" and ensure the safety of residents rests with the local government. There should be no headlong rush toward restarting the reactor when serious safety concerns persist.**

#### SERIOUSNESS OF EVACUATION PLANS QUESTIONED

After the Fukushima accident, the central government made it mandatory for all local governments within 30 kilometers of a nuclear power plant to develop disaster mitigation and evacuation plans.

All the nine municipalities within 30 km of the Sendai plant have drawn up such plans. The total population of the areas covered is about 210,000.

Takuro Eto, 58, who operates a daytime care service for the elderly in Ichikikushikino, a city located about 17 km from the Sendai plant, is deeply skeptical about the evacuation plan crafted by the municipal government.

"Are they really serious about protecting the lives of people?" he said.

Many of the 10 or so elderly people who regularly come to Eto's facility are suffering from dementia. If a serious nuclear accident occurs, they are required to return to their homes before being evacuated, according to the city's evacuation plan. One of these patients lives alone in a house located within 10 km of the plant.

"Are we supposed to have this patient return home, which is located closer to the plant?" Eto said indignantly. "How can we ask our staffers to escort the patient home (in such an emergency)?"

How to evacuate people who cannot move on their own, such as the residents of nursing homes and hospital inpatients, also poses a challenge.

The Kagoshima prefectural government has secured evacuation destinations for the 17 nursing homes and hospitals within 10 km of the Sendai plant. As for the 227 facilities located between 10 and 30 km from the plant, however, the local government has decided to do computer searches after an accident happens to find facilities that can accommodate those evacuees.

An employee at a home for elderly people requiring special care located within a 30-km radius of the nuclear plant voices anxiety about the plan.

"We have only one staff member on night duty," the employee said. "How can the staffer deal with evacuating the residents to an unfamiliar place in an emergency?"

Despite such concerns, the prefectural government has no plan to carry out an evacuation drill involving local residents to test the effectiveness of the evacuation plan before the reactor is brought back online.

"Kyushu Electric Power currently has no time (for such a drill) as it is busy with inspections prior to the reactor restart," Kagoshima Governor Yuichi Ito said.

An Asahi Shimbun survey revealed that 66 percent of medical institutions and 49 percent of social welfare facilities within 30 km of nuclear power plants across Japan have not compiled mandatory evacuation

plans specifying evacuation destinations, routes and transportation means to be used in the event of an accident.

#### DIALOGUE WITH LOCAL RESIDENTS ESSENTIAL

The fifth level of the IAEA's defense-in-depth safety approach--the final barrier--should be designed to work effectively to protect public health even in cases in which all the other four layers of defense have failed.

In Japan, this stage of defense is the local government's responsibility. Evacuation plans are not covered by the Nuclear Regulation Authority's safety assessments. Such plans are to be simply approved by the nuclear disaster prevention council, headed by the prime minister.

It should be assumed that the responsibility for protecting local residents from nuclear accidents lies with the local government, which is abreast of special regional circumstances.

According to experts, in the disaster at the Fukushima No.1 plant, even the nuclear fuel pool of the No. 4 reactor, which was offline at that time, was at risk of a severe accident.

**One vital lesson from the catastrophe is that the mere existence of a nuclear reactor poses serious safety risks.**

**Evacuation plans are indispensable, whether the reactors are restarted or not.**

To be sure, it is almost impossible to create a perfect evacuation plan. But it is possible to clarify what can be done, ascertain problems to be solved and explain them to local residents.

To do so, the local governments of areas where nuclear plants are located need to conduct drills to test the effectiveness of their mitigation and evacuation plans and hold the necessary dialogue with local residents.

It is said that a two-stage evacuation approach is effective during nuclear emergencies. Under this approach, residents within 5 km of the plant should be evacuated first. People living between 5 and 30 km from the plant should first take refuge indoors to wait for their own evacuation.

It is obvious that this approach does not work without the understanding and cooperation of the local residents.

**If local governments are responsible for the safety of their residents, they should also be involved in the process of deciding on whether to restart reactors.**

**Currently, however, under agreements with electric utilities, only the prefectures and municipalities that host nuclear power plants have the right to agree to reactor restarts. But this right should also be given at least to all the local governments in the 30-km zone that are obliged to map out evacuation plans.**

Nuclear reactors should be considered to be too dangerous if the local governments of areas that can be affected by accidents involving the reactors refuse to support their operations. These reactors should be decommissioned as soon as possible.

#### CONTINUED FAILURE TO ACT

The Diet's investigative committee that looked into the Fukushima accident has pointed out that little serious effort has been made in Japan to establish even the fourth level of the IAEA's defense-in-depth strategy for nuclear safety, or control of severe plant conditions, the stage before the final barrier.

In 2006, the Nuclear Safety Commission tried to make a sweeping review based on the IAEA standards of the priority areas designated under the government's nuclear disaster prevention policy. But the plan was dropped in the face of opposition from the Nuclear and Industrial Safety Agency, which feared such a review would provoke anxiety among local residents, according to the findings of the investigation.

The radiation exposure that afflicted many residents around the Fukushima plant could have been avoided. Many patients in hospitals who were not evacuated quickly enough died due to deteriorating health conditions. More than 1,900 people in Fukushima Prefecture have died due to causes related to the nuclear accident.

Have all the relevant lessons from the calamity been gleaned and absorbed to prevent any further casualties of administrative nonfeasance?

This is the question local governments should ask first in examining and evaluating their abilities to protect residents from nuclear accidents.

August 11, 2015

## Govt. should think of protecting lives not money

### Fukushima governor seeks safety first

[http://www3.nhk.or.jp/nhkworld/english/news/20150811\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20150811_20.html)

The governor of Fukushima Prefecture says Japan's nuclear energy policy should place utmost priority on ensuring people's safety and giving them a sense of security.

Masao Uchibori issued a statement in response to the restart on Tuesday of a nuclear plant in southwestern Japan, the first time in nearly 2 years for a nuclear facility in the country to come online. He said the government's policy should reflect the lessons learned from the accident at the Daiichi plant in Fukushima.

He said his prefecture will continue pressing the government and Tokyo Electric Power Company to scrap all nuclear plants in Fukushima. TEPCO is the Daiichi plant's operator.

Uchibori said the prefecture will also do its utmost to realize its basic principle for reconstruction -- fostering a society that does not depend on nuclear power.

Former residents of Namie Town, which was designated a no-entry zone after the nuclear accident, expressed mixed emotions at the news of the restart of the Sendai plant.

An 83-year-old man was against the move, saying the suffering endured by the evacuees in Fukushima can never be understood by others.

A 44-year-old woman said the restart probably can't be avoided. Even so, it gives her complicated feelings. She said she believes the normal order of business is to restart nuclear reactors only after confirming that all safety measures are in place -- such as securing a final disposal site for spent nuclear fuel and designating evacuation routes in case of emergencies.

The woman said she wants the government to think more about protecting lives than profits, by looking at issues from the people's perspective.

## And still no solution in view for nuclear waste

### Nuclear restart highlights government dilemma over lack of waste disposal sites

<http://www.japantimes.co.jp/news/2015/08/11/national/nuclear-restart-highlights-government-dilemma-lack-waste-disposal-sites/#.Vcnshfnwmou>

by Kayo Mimizuka

Kyodo

With an unpopular return to nuclear power generation, Japan can no longer ignore the elephant in the room: where is the country's highly radioactive nuclear waste going?

The reboot Tuesday of a reactor at Kyushu Electric Power Co.'s Sendai plant in Kagoshima Prefecture comes as the government struggles to find a final disposal site for high-level nuclear waste.

Currently, around 17,000 tons is sitting in temporary storage pools across the country, and the restart means the generation of even more.

Spent fuel pools at some nuclear plants will reach their capacity in as soon as three years.

A spokeswoman at Kyushu Electric said the Sendai plant's storage pools "still have enough room," suggesting the utility is not planning to immediately take further measures. But they are expected to become full in roughly 11 years, according to official data.

International concerns are also growing over the increase in Japan's possession of plutonium due to its potential for falling into the wrong hands and being used to make nuclear weapons. As of the end of 2014, Japan had 47.8 tons of plutonium, up 0.7 tons from a year earlier.

Under Japan's nuclear fuel recycle policy, plutonium extracted by reprocessing conventional uranium fuel is consumed by reactors in the form of plutonium-uranium mixed oxide fuel, known as MOX. But its feasibility remains uncertain, given public concerns after the Fukushima disaster.

Currently, the government plans to store nuclear waste at a final repository more than 300 meters underground. It would sit there for up to 100,000 years until radiation levels fall low enough and there is no harm to the environment.

In 2002, the government-backed Nuclear Waste Management Organization of Japan began soliciting local governments to host a disposal site, touting economic benefits such as subsidies and jobs.

The process faced a setback in 2007, though, when the town of Toyo, Kochi Prefecture, withdrew after applying for screening as a candidate site. The mayor left office after losing the election he had called to let people judge his plan to host a disposal facility. His successor called it off.

Having waited in vain for volunteers to emerge, the government changed its basic policy. In May, the Cabinet of Prime Minister Shinzo Abe introduced a scheme allowing the government to choose candidate sites based on scientific grounds, including resistance to earthquakes.

The move also indicates the pro-nuclear government wants to show it is more actively engaged in addressing the issue, as public criticism has increased over the rush to restart reactors idled following the Fukushima disaster without a solution to the waste problem.

Industry observers say, however, the issue is unlikely to be resolved smoothly, especially amid heightened safety concerns among the public.

“In a situation where trust between the public and the nuclear industry has collapsed, it will be extremely difficult to gain support from people” for the government’s plan to nominate suitable sites, the Science Council of Japan, a representative body of scientists, said in its policy proposals released in April. Finland is constructing the world’s first permanent disposal site for high-level radioactive waste in Olkiluoto with plans to operating it around 2020.

Many other countries with nuclear plants are still searching for potential locations. In the United States, a plan to build a disposal site in Nevada’s Yucca Mountain was canceled in 2009 due to local opposition. Hideyuki Ban, co-director of the Citizens’ Nuclear Information Center, said finding a location to build a disposal site in Japan is even more difficult than in other countries due to the public’s sensitivity to nuclear power given the Fukushima crisis.

“For now, there is no national consensus at all on what to do with nuclear power generation down the road,” Ban said. “As the majority of people oppose nuclear power, surely there will be a backlash” against the government’s plan.

Since May, the government has been briefing municipalities on how it selects candidate sites. Such meetings have been held in all 47 prefectures except Fukushima, but officials from some communities refused to take part out of fear their attendance might be considered a sign of their intention to accept a disposal site.

Questions have also arisen over the transparency of the process.

The central government held all of those briefings behind closed doors — without informing local residents of when and where they were held. That prompted some towns to boycott the meetings.

The government tried to justify the move by saying it was necessary to promote honest discussions.

“We were concerned that municipalities might not attend the meetings if we made it open to everyone, fearing that they might be mistaken for being interested in (hosting a final disposal site),” said Takuya Watanabe, deputy director at the industry ministry’s radioactive waste management policy division. “We will consider making them open next time.”

Ban, however, said it was “an extremely lame handling” by the government, adding that “transparency and fairness are the essential conditions if the government wants to achieve some sort of consensus.”

The government has said resolving the issue of where to locate a disposal facility is “the current generation’s responsibility.”

Nevertheless, it has so far failed to indicate any specific time frame, leaving the outlook for the project unclear.

## No such thing as absolutely safe nuclear plants

### Safety concerns linger as Japan returns to nuclear power

<http://mainichi.jp/english/english/perspectives/news/20150811p2a00m0na016000c.html>

With the reactivation of the No. 1 reactor at the Sendai Nuclear Power Plant in Kagoshima Prefecture on Aug. 11, the Japanese government is now getting back on track to nuclear power dependence. While the No. 1 reactor has become the first to be restarted based on the new regulatory criteria drawn up in the wake of the Fukushima No. 1 nuclear plant disaster, it doesn't mean the facility carries no risk of a nuclear accident.

The new safety standards, which reflect lessons from the Fukushima nuclear disaster, contributed to reinforcing infrastructure at nuclear complexes against potential earthquakes and tsunamis. However, evacuation plans for potential nuclear accidents have yet to be substantially improved. Although areas covered by nuclear emergency plans were expanded to 30 kilometers in radius after the Fukushima crisis, largely raising the number of residents to be evacuated, **no disaster drills have yet to be conducted in areas surrounding the Sendai plant based on the new evacuation schemes.** Nationwide, 4.8 million people are estimated to be subject to the updated nuclear emergency plans, meaning that 4 percent of Japan's entire population is living in the "vicinity" of nuclear plants. Nevertheless, **resident evacuation plans are not included among the prerequisites for restarting nuclear reactors.** The Nuclear Regulation Authority (NRA) boasts the new criteria as one of the world's strictest, but as NRA Chairman Shunichi Tanaka has said before, the new regulatory standards and nuclear disaster preparedness should be "a pair of wheels on a car of safety."

We have learned too well from the Fukushima catastrophe that a country could be destroyed by a nuclear plant disaster. At the same time, we are now also aware that there are no "absolutely safe" nuclear power stations. Several hundreds of thousands of people still remain evacuated from their hometowns due to the Fukushima tragedy, four years and a half after the meltdowns. In order not to repeat the same mistakes, the central and local governments as well as utilities must never neglect refining measures for nuclear plant safety and resident evacuation.

August 12, 2015

## Expensive safety measures

### Power plant operators to invest ¥3 trillion on safety measures

[http://www.japantimes.co.jp/news/2015/08/12/business/power-plant-operators-to-invest-%C2%A53-trillion-on-safety-measures/#.VctRc\\_nwmos](http://www.japantimes.co.jp/news/2015/08/12/business/power-plant-operators-to-invest-%C2%A53-trillion-on-safety-measures/#.VctRc_nwmos)

JJI

Eleven nuclear power plant operators plan to invest a total of ¥3 trillion on a variety of safety measures, informed sources said Tuesday.

The safety measures include installing breakwaters and ensuring emergency power sources are available. In addition, the companies are required to implement anti-terrorism measures by July 2018.

Costs for safety measures are likely to increase further, but such investment will be inevitable for companies eager to win regulatory approval for reactor restarts.

Between them, the 11 companies have applied for regulatory approval for 25 restarts. So far, five of the units have obtained approval, including the No. 1 reactor at Kyushu Electric Power Co.'s Sendai nuclear plant in Kagoshima Prefecture, which went back online on Tuesday.

Tohoku Electric Power Co.'s costs for safety measures will increase to over ¥300 billion from the originally estimated ¥182 billion due to additional construction work, including burying emergency fuel tanks to protect them from high wind.



Kansai Electric Power Co.'s spending will balloon to ¥490 billion from less than ¥300 billion because of anti-terrorism work.

Current plans in place at Chubu Electric Power Co. and Kyushu Electric do not include costs for anti-terrorism work, estimated at some tens of billions of yen.

The companies expect to reduce costs by firing up nuclear reactors as it would reduce the need to buy fuel for thermal power plants.

Kyushu Electric expects a monthly improvement of ¥7.5 billion in its balance sheet per reactor with the restart of the Sendai nuclear plant. The company aims to restart the plant's No. 2 reactor in mid-October.

Tokyo Electric Power Co. projects that the restart of its Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture will improve its balance sheet by over ¥8 billion per month.

If the reactors are not restarted, the companies will be forced to cut costs further.

**A long-term suspension of nuclear reactors will force power firms that have never carried out large-scale rate hikes after the March 2011 earthquake and tsunami to consider rate increases,** said Yukihiro Takabayashi, managing executive officer of Hokuriku Electric Power Co.

## Govt won't use SPEEDI

### **SPEEDI system omitted from gov't plan for nuclear evacuation policy**

<http://mainichi.jp/english/english/newsselect/news/20150812p2a00m0na022000c.html>

The government has decided not to use the SPEEDI network system as a basis for making decisions regarding evacuations, drawing objections from municipal governments and residents.

The decision, which was made in July, is reflected in the government's Basic Disaster Management Plan, which informs the central and local governments' disaster measures.

The government came under fire following the outbreak of the March 2011 Fukushima nuclear crisis when it delayed the public release of information generated by the System for Prediction of Environment Emergency Dose Information (SPEEDI) -- which predicts the volume and the extent to which radioactive materials are spread in the event of a nuclear disaster based on data such as the volume of radioactive materials released, weather conditions and terrain -- and needlessly exposing residents to radiation as a result.

In new nuclear disaster prevention guidelines established in 2012, the Nuclear Regulation Authority (NRA) stipulated that residents within five kilometers of a stricken nuclear power plant be evacuated immediately in the event of a nuclear incident, while residents between five and 30 kilometers from a nuclear plant take shelter indoors and evacuate once actual measurements of air radiation doses reach 500 microsieverts per hour. The guidelines stated that SPEEDI would be used as a reference, and the government's Basic Disaster Management Plan also stated that SPEEDI's prediction results would be publicly released.

However, the use of SPEEDI was deleted from the nuclear disaster prevention guidelines this past April, and the system was eliminated from the Basic Disaster Management Plan in July as well.

**"Because the actual flow of radioactive materials can differ from predictions, SPEEDI results are uncertain,"** a senior official at the NRA explained as the reason for SPEEDI's omission as a tool for deciding evacuation policy. **"Using actual radiation measurements as criteria for evacuation does not allow**

**us to completely prevent residents from being exposed to radiation, but it's a standard method that's accepted worldwide."**

At a Central Disaster Management Council meeting in July, Niigata Gov. Hirohiko Izumida argued that residents would not support evacuation criteria that presuppose that residents will be exposed to a certain level of radiation. At briefing sessions regarding evacuation plans held for residents of the Kagoshima Prefecture city of Satsumasendai, where the No. 1 reactor of the Sendai Nuclear Power Plant was reactivated on Aug. 11, the municipal government had conveyed its intent to use SPEEDI information.

## How safe is it to start again?

### News Navigator: Is Sendai Nuclear Power Plant safe under new standards?

<http://mainichi.jp/english/english/perspectives/news/20150812p2a00m0na013000c.html>

The Sendai Nuclear Power Plant in Kagoshima Prefecture has been restarted, running under a new set of safety standards enacted after the Fukushima nuclear disaster. The Mainichi answers common questions readers may have about these safety standards.

Question: What are these new standards?

Answer: The new standards are safety measures for running nuclear power plants, renewed after the Fukushima No. 1 Nuclear Power Plant disaster. In that disaster, tsunami devastated the facility causing the plant to lose all its power sources. The plant could no longer cool its nuclear fuel and it experienced a meltdown, spewing radioactive substances into the environment. Using the Fukushima disaster as a lesson, the new standards require power companies to prepare countermeasures against earthquakes and tsunami. The Sendai Nuclear Power Plant was judged by the Nuclear Regulation Authority as meeting those new standards.

Q: What is different at the plant under the new standards?

A: Buildings were reinforced so that they will not collapse even in the event of a major earthquake, and it was confirmed that there are no active faults directly underneath the plant. A tall wall to stop tsunami was constructed, along with doors that can be used to prevent flooding. Backup power and water coolant delivery mechanisms were also prepared in the event that the plant loses power. An area for workers to assemble and respond to emergencies was also created.

Q: Is the plant fully protected then?

A: Not necessarily. Even though the plant passed the new measures, they are only standards. Just like with a car, where the ultimate responsibility for safety lies with the driver even if the car is deemed as roadworthy, the ultimate responsibility for nuclear power plants' safety lies with the power companies that operate them. Furthermore, just like the brakes on a car can become faulty with age, the longer the machinery at a nuclear plant is used, the more likely something will go wrong. It is the responsibility of a driver to not skip safety checks on their car, just as it is the responsibility of power companies to keep up safety inspections on their plants.

The Fukushima disaster showed us that the effects of a nuclear disaster have the potential to ruin a nation. No matter what safety measures are put in place, there are limits to what humans can anticipate. There is always the risk of the unexpected. Both the national government and power companies should not forget that there is no end when it comes to safety precautions. (Answers by Yuka Saito, Science & Environment News Department)

## Ignoring volcanoes and evacuation measures

### **Sendai No. 1 reactor back online without sufficient volcano and evacuation measures**

<http://mainichi.jp/english/english/perspectives/news/20150812p2a00m0na012000c.html>

The No. 1 reactor at the Sendai Nuclear Power Plant in Kagoshima Prefecture operated by Kyushu Electric Power Co. was reactivated on Aug. 11, in a hasty decision made without consideration for massive volcanic eruptions or evacuation drills for local residents.

The reactor, the first to be reactivated under new regulatory standards introduced in the wake of the Fukushima No. 1 nuclear plant crisis, was offline for approximately four years and three months. Its reactivation marked the end of a two-year stretch of no nuclear power generation in Japan, since the last nuclear reactors to be operated -- the No. 3 and No. 4 reactors at Kansai Electric Power Co.'s Oi Nuclear Power Plant in Fukui Prefecture -- went offline in September 2013.

At 10:30 a.m. on Aug. 11, Kyushu Electric pulled out the Sendai No. 1 reactor's control rods to start up the reactor, which reached criticality at 11 p.m. After confirming that the reactor's operation can safely be brought to a halt, on Aug. 14, it will begin generating and transmitting power. Output will be brought up to full capacity in stages, and commercial operations will begin in early September following Nuclear Regulation Authority (NRA) inspections.

The reactor had been stopped for regular inspections since May 2011, and concerns remain about possible problems resulting from deteriorating pipes and instruments. The NRA has called on Kyushu Electric to take all possible safety measures, the latter of which has said it will immediately notify the public of any problems with its facility.

At a press conference on Aug. 11, Chief Cabinet Secretary Yoshihide Suga said, "We will go forward with reactivation of other reactors once they meet the new criteria." Meanwhile, Economy, Trade and Industry Minister Yoichi Miyazawa said, "In the event of an accident, the central government will deal with it with responsibility."

Although the Sendai reactor met new regulatory criteria, problems remain. There are five caldera, shown to have caused massive eruptions in the past, in the neighboring areas. This is the largest number of any nuclear reactor in the country. Kyushu Electric argued during its safety assessment by the NRA that the possibility of a massive eruption while the reactor is in operation was sufficiently low, and indicated that it would stop the reactor and transport nuclear fuel out if any signs of an eruption were detected. Where the nuclear fuel would be transported, however, has not been decided.

Although the NRA determined that Kyushu Electric's measures were valid, many volcanologists have pointed out the difficulty of detecting signs of volcanic eruptions, since almost no observational records of massive eruptions exist. In response, the NRA decided to establish an expert panel that would advise the NRA on volcano-related measures, but the panel is not expected to meet -- at the earliest -- until this fall, when commercial operation of the Sendai No. 1 reactor is set to begin.

The reactor restart lacks consistency with Japan's nuclear fuel cycle as well. There are some 17,000 tons of spent nuclear fuel in storage pools at nuclear power plants nationwide, nearing full capacity of such storage facilities. The government plans to operate a nuclear reprocessing facility in Aomori Prefecture to deal with the issue of spent nuclear fuel, but the prospects of that happening are unclear. Storage pools at

Genkai Nuclear Power Plant in Saga Prefecture, another facility that Kyushu Electric is intent on rebooting, are expected to fill up within around three years after its reactors are reactivated. A final disposal site for high-level radioactive waste that is generated when spent nuclear fuel is reprocessed has yet to be established.

Evacuation plans for residents in the event of an accident is not subject to NRA evaluation, and is left up to local municipal governments. In September 2014, the government approved an evacuation plan in the case of a Sendai plant incident drawn up by the Kagoshima Prefectural Government, but evacuation drills based on this plan have not yet been carried out.

August 14, 2015

## Earthquake in North Japan

### **M-5.0 earthquake hits northeastern Japan, no tsunami reported**

<http://mainichi.jp/english/english/newsselect/news/20150814p2g00m0dm017000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 5.0 struck a wide area in northeastern and eastern Japan on Friday, including Fukushima Prefecture, but no tsunami was reported.

The 5:13 a.m. quake was centered off the eastern coast of the prefecture at a depth of around 40 kilometers, the Japan Meteorological Agency said.

It registered 4 on the Japanese seismic intensity scale of 7 in Fukushima's Iwaki and 3 in many other areas in the prefecture as well as Ibaraki and Tochigi prefectures, it said.

## NRA inspectors at Sendai plant

### **NRA: Will stage inspections as required**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's Nuclear Regulation Authority plans to comprehensively inspect the Sendai nuclear plant's No.1 reactor before the launch of its commercial operation.

A senior official of the NRA Secretariat told reporters that inspectors were at the plant on Friday to monitor the start of power generation and transmission.

He said the planned inspection will target all functions of the reactor's equipment. He said the NRA will steadily carry out all inspections and other operations, as required by law

August 15, 2015

## Alert for Mt Sakurajima raised to 4

### Utility: volcano won't affect nuclear plant

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Kyushu Electric Power Company says a possible eruption on Mount Sakurajima in western Japan will not affect the operation of its nuclear plant in the prefecture.

The utility began transmitting electricity generated at the No. 1 reactor of its Sendai nuclear power plant in Kagoshima Prefecture on Friday.

The plant is located about 50 kilometers from Mount Sakurajima. It was restarted on Tuesday -- the first nuclear power station to go back online in nearly 2 years in Japan.

The company made the comment after the alert level on the mountain was raised to 4 on Saturday, urging people to prepare for evacuation.

Utility officials say they are not taking any particular precautions because they think a possible eruption would not affect the plant. But they say they will collect relevant data carefully.

They suggested they are proceeding with work to increase output as planned.

The Nuclear Regulation Authority also says any possible eruption will not affect the plant.

### Alert for Mt. Sakurajima up to highest-ever level of 4

<http://mainichi.jp/english/english/newsselect/news/20150815p2g00m0dm035000c.html>

KAGOSHIMA (Kyodo) -- The weather agency on Saturday raised its alert level for the Sakurajima volcano in Kagoshima Prefecture **to 4 on a 5-point scale, the highest ever for the mountain, with the possibility growing of a major eruption there.**

The level 4 alert calls for evacuation preparations. Earthquakes originating from the island volcano near Kagoshima City in Kagoshima Prefecture have been frequently recorded since around 7 a.m. Saturday, the Japan Meteorological Agency said.

The city issued an evacuation advisory for parts of the Mt. Sakurajima area, affecting 77 residents.

There have been some 690 eruptions from the Showa vent of the 1,117-meter volcano since the start of this year, with the plume reaching an altitude of some 4,300 meters on May 21.

The volcano had a major eruption in August 2013, spewing volcanic ash 5,000 meters into the sky.

Kyushu Electric Power Co.'s Sendai nuclear power plant, which became the first to be rebooted Tuesday under Japan's tightened safety rules, is located some 50 kilometers from the volcano. No abnormality has been reported at the plant.

## **Anxiety among residents as eruption alert level heightened for Mt. Sakurajima**

<http://mainichi.jp/english/english/newsselect/news/20150815p2a00m0na019000c.html>

KAGOSHIMA -- The Japan Meteorological Agency raised its eruption alert level for the Sakurajima volcano on the southwestern main island of Kyushu to 4 on a 5-point scale on Aug. 15, sparking concerns among local residents.

Reiko Kawamori, 85, who lives by herself on the volcanic island, said anxiously, "I learned it was raised to that level for evacuation preparations through the community wireless system. I feel uneasy because it is the first time for me to make evacuation preparations although I have lived on Sakurajima for about 70 years. I have packed my valuables so that I can get out of here immediately if something happens."

Kumiko Nakamura, 85, who lives in the Arimuracho district of Kagoshima, said that she had come to know through television that the alert was raised to the level for evacuation preparations. "There is no change in the situation outside, but I am surprised." Because she is physically-disabled and living alone, she said, "Fire department officials are supposed to come and pick me up when I need to evacuate. So, I cannot help but stand ready at home."

A welfare center for the elderly in the city's Higashisakurajima-cho district, plans to accept evacuees from two districts within a radius of 3 kilometers of the volcanic vent. An official of the facility said hastily, "The city government has not contacted us yet, but I was just talking with the head of the center over the phone and we decided to watch the situation for now. If we were to actually accept evacuees, we would gather staff and open 2nd-floor tatami-rooms to them."

Staff at the Hotel Rainbow Sakurajima, a publicly-owned lodging facility, hastily said, "We are asking our customers who are taking a hot spring bath to pack their belongings and prepare to evacuate."

Koyoshi Iwamoto, 72, who runs a hotel in the Furusato-cho district of Kagoshima, was busy calling customers to cancel their reservations. He said nervously, "Our customers' safety comes first. We have made preparations to evacuate any time, but I wonder what will happen."

## **Kagoshima residents told to prepare to evacuate as volcano warning for Sakurajima raised**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201508150025](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201508150025)

Residents of parts of Kagoshima city were warned to prepare to evacuate Aug. 15 as the Japan Meteorological Agency said a major eruption of volcanic Mount Sakurajima could be imminent. The agency raised its warning to Level 4, the first time it has done so for Sakurajima since the volcano warning system was introduced in 2007.

The warning level affects residents in the Arimuracho and Furusatocho districts of Kagoshima city. The districts are located within 3 kilometers of two volcanic vents, and face the possibility of being inundated by volcanic cinders or covered by pyroclastic flows.

Agency officials said 30 volcanic tremors were recorded between 7 a.m. and 9 a.m. on Aug. 15, centered in the vicinity directly under the Minamidake vent.

Other signs of sudden crustal movement were also observed on the morning of Aug. 15.

In July 2012 and August 2013, Sakurajima erupted and spewed large amounts of volcanic ash. Agency officials said there were indications a much larger eruption was in the offing.

**Sakurajima is located 50 or so kilometers from the Sendai nuclear power plant**, which began resuming operations on Aug. 11 after clearing stricter safety hurdles in the aftermath of the 2011 Fukushima nuclear disaster.

August 16, 2015

## Evacuation of part of Kagoshima

### Residents evacuate as major eruption possible for Mt. Sakurajima

<http://mainichi.jp/english/english/newsselect/news/20150816p2g00m0dm001000c.html>

KAGOSHIMA (Kyodo) -- Residents near the Sakurajima volcano in Kagoshima evacuated to safer places Saturday after the government raised its alert level to 4 on a 5-point scale, indicating a major eruption could be imminent.

Level 4 is the highest ever for Sakurajima, located just 4 kilometers away from the center of the major southern port city of Kagoshima, since the current volcanic alert system was launched in 2007.

Kyushu Electric Power Co.'s Sendai nuclear power plant, which Tuesday became the first to be rebooted under tighter safety rules adopted in the wake of the 2011 Fukushima nuclear plant disaster, is located just 50 km from the volcano. No abnormality has been reported at the plant.

The alert was raised to 4, meaning people living in the area should prepare to evacuate, from 3, which restricts entry to the mountain area. In response, the Kagoshima city government issued an evacuation advisory for areas near the mountain, affecting 77 residents, all of whom left the areas by evening.

Many earthquakes originating from the volcano have been recorded since 7 a.m. Saturday and an increase in crustal movement was also observed, the Japan Meteorological Agency said, adding those are signs indicating magma has risen to near the volcanic vent.

The agency warned of the possibility of an eruption emitting large amounts of ash and pyroclastic flows within 3 km from Sakurajima's Showa vent and the Minamidake summit.

"It would be no surprise if it were to erupt at any moment," an agency official said.

The meteorological agency believes an eruption of similar magnitude to one in 1986 may occur. Six people were injured by the 1986 eruption which emitted large amounts of volcanic ash that fell on residential areas up to 3 km away.

But the agency has not observed signs indicating a surge of magma equivalent to an eruption in 1914, in which 58 people died or went missing. Sakurajima was an island until the 1914 eruption, which emitted so much material as to join the volcano to Kyushu.

There have been some 690 eruptions from the Showa vent of the 1,117-meter volcano since the start of this year, with the plume reaching an altitude of some 4,300 meters on May 21.

The volcano last had a major eruption in August 2013, spewing volcanic ash 5,000 meters into the sky.

Evacuees moved to evacuation centers set up by the city government or other places including relatives' homes.

Residents carrying luggage were seen arrived at the centers after the evacuation advisory was issued.

"I'm concerned if an eruption may damage my home," said Yoshiko Ikeda, 87.

"I have lived in Sakurajima for more than 50 years but have not imagined we would have to evacuate," Emiko Miyashita, 80, said.

The city government displayed the alert in Japanese and English on digital boards at the ferry landing as foreigners in the area may not have received the information.

Kyushu Electric Power Co.'s Sendai nuclear power plant is located just 50 km from the volcano. On Tuesday, it became the first nuclear plant to reboot under tighter safety rules adopted in the wake of the 2011 disaster at Tepco's Fukushima No. 1 nuclear plant.

No abnormality has been reported at the Sendai plant.

The alert was raised to 4, meaning people living in the area should prepare to evacuate, from 3, which restricts entry to the mountain area. In response, the Kagoshima city government issued an evacuation advisory for areas near the mountain, affecting 77 residents, all of whom left the areas by evening.

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"It would be no surprise if it were to erupt at any moment," an agency official said.

According to the agency, there is a large magma chamber at a level 10 to 15 km below the sea surface northeast of Sakurajima, and magma in the chamber is thought to be pushing into a small magma chamber 4 to 6 km directly below in the mountain.

The agency says that increased pressure in the small chamber likely led to an upward pressure of magma under Sakurajima, raising the frequency of volcanic earthquakes and causing swelling in the mountain.

The agency believes an eruption of a similar magnitude to one in 1986 may occur. Six people were injured by the 1986 eruption that emitted large amounts of volcanic ash, which fell on residential areas up to 3 km away.

But the agency has not observed signs indicating a surge of magma equivalent to an eruption in 1914, in which 58 people died or went missing. Sakurajima was an island until the 1914 eruption, which emitted so much material as to join the volcano to Kyushu.

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The volcano's last major eruption occurred in August 2013, spewing volcanic ash 5,000 meters into the sky.

## **Concerns grow over possible eruption of Sakurajima as residents evacuate**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201508160026](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201508160026)

Local officials kept a close watch for a second straight day on volcanic Mount Sakurajima as signs continued to grow on Aug. 16 of a possible major eruption impacting residential areas.



A day earlier, the Japan Meteorological Agency raised the warning for the 1,117-meter-high Sakurajima to Level 4, meaning residents within 3 kilometers of vents on the mountain should be prepared to evacuate. The Kagoshima municipal government issued an evacuation advisory at 4:50 p.m. on Aug. 15.

All 77 residents in 51 households living in the Arimuracho, Furusatocho and Kurokamicho districts of Kagoshima city had evacuated by 6 p.m. Aug. 15.

According to agency officials, a total of 1,028 volcanic tremors were recorded on Aug. 15, centered in the vicinity directly under the Minamidake vent. As many as 100 tremors an hour were recorded on the morning of Aug. 15.

However, the number of tremors recorded between midnight Aug. 15 and 10 a.m. on Aug. 16 was 49. The hourly number of tremors recorded had also fallen to under 10.

There were no tremors that could be felt since 3 p.m. on Aug. 15.

The decrease in the number of tremors may mean crustal movement caused by pressure from rising underground magma may have weakened. However, other observations continue to show the mountain expanding, leading agency officials to estimate that a large volume of magma continues to accumulate close to the vents.

When the agency raised its warning to Level 4 on Aug. 15, it was the first time that had been done for Sakurajima since the volcano warning system was introduced in 2007. Sakurajima erupted in July 2012 and August 2013, spewing large amounts of smoke and volcanic ash.

## Volcanic activity seemingly slowing down

### Sakurajima volcanic activity eases somewhat

<http://www.japantimes.co.jp/news/2015/08/16/national/mount-sakurajima-volcanic-activity-eases-somewhat/#.VdCQGvnwmov>

Jiji, Kyodo

Volcanic activities that intensified Saturday morning at Mount Sakurajima in Kagoshima Prefecture, apparently slowed somewhat late the same day, the Meteorological Agency said Sunday. But the agency remained alert for signs of a major eruption.

The tectonic movements indicating swelling of the mountain also slowed, the agency said. It believes the rise of magma from an underground chamber has subsided for now.

But Takeshi Koizumi, senior coordinator for volcanic disaster mitigation at the agency, said: "We need to remain alert because it is not known when magma will start to rise again and when a major eruption will occur as a result."

At a meeting on Sunday, officials of relevant government agencies agreed on a policy to enhance the monitoring of Sakurajima, to provide accurate information and to offer support to evacuees.

Eriko Yamatani, minister for disaster prevention and reduction, called on the public to act calmly.

In a video conference linking national officials with Kagoshima Prefecture officials, Kagoshima Gov.

Yuichiro Ito warned additional evacuation and protective measures may become necessary if the situation worsens.

Masato Iguchi, a professor at Kyoto University's Disaster Prevention Research Institute who monitors Mount Sakurajima, said volcanic activities need close monitoring for at least the next two weeks. On Saturday, residents near Sakurajima evacuated to safer places after the government raised its alert level to 4 on a 5-point scale, indicating a major eruption could be imminent. Level 4 is the highest ever for Sakurajima — which is located just 4 km away from the center of the major port city of Kagoshima — since the current volcanic alert system was launched in 2007. Evacuees moved to evacuation centers set up by the city government or to other places including relatives' homes. Residents carrying luggage were seen at the centers after the evacuation advisory was issued. "I'm concerned an eruption would damage my home," said Yoshiko Ikeda, 87. "I have lived in Sakurajima for more than 50 years but have not imagined we would have to evacuate," said Emiko Miyashita, 80. The city government displayed the alert in Japanese and English on digital boards at the ferry landing as foreigners in the ar [the end of the article is missing]

August 17, 2015

## **NRA not worried about effects of volcano on Sendai plant**

### **NRA says Sakurajima volcano no threat to newly restarted Sendai reactor**

<http://www.japantimes.co.jp/news/2015/08/17/national/nra-says-sakurajima-volcano-no-threat-newly-restarted-sendai-reactor/#.VdHejJfw mou>

Bloomberg

The Nuclear Regulation Authority said Monday that the Sakurajima volcano in Kagoshima Prefecture doesn't pose a threat to the Sendai nuclear plant 50 km away.

The Meteorological Agency increased the alert level for the volcano to 4 from 3 on Saturday, advising people within 3 km of the crater to prepare to leave. The highest rating on the scale is 5, when evacuation is ordered because of a high risk of eruption.

Kyushu Electric Power Co., which runs the Sendai nuclear facility, said Monday that operations were normal. A reactor at the facility was restarted last week, the first in Japan to be brought back online under new safety rules set up after the 2011 Fukushima nuclear disaster.

"Regarding the effect from volcanic ash (and other debris), the NRA recognizes that it will not impair safe operations of Sendai facility based on the new regulatory requirements," the authority said in an email. "It recognizes that Kyushu Electric company appropriately prepares its measure for volcanic activity."

There are 39 known volcanoes, 14 of which are active, within 160 km of the Sendai plant, according to Kyushu Electric. The company uses seismic sensors and global positioning technology to predict eruptions that may threaten its Sendai reactors.

The company has updated equipment to withstand 15 cm of volcanic ash, and an eruption large enough to have an impact on the facility last happened 30,000 years ago, a spokesman for the utility said.

Sakurajima's last major eruption was over 10,000 years ago, which wouldn't have affected the location where the Sendai facility was built, according to simulations, Kyushu Electric said in a March 2014 presentation.

Japan lies in the “Ring of Fire,” an arc of volcanoes and fault lines surrounding the Pacific Basin, and it sits at the three-way meeting point of the North American, Eurasian and Philippine Sea tectonic plates. Authorities ordered the complete evacuation of Kuchinoerabu Island in Kagoshima Prefecture in May after the Shindake volcano erupted for the second time in 10 months. Last September, more than 50 people, mostly hikers, were killed in an eruption at Mount Ontake between Nagano and Gifu prefectures.

## Kagoshima: Evacuate or not?

### Warning continues for large-scale eruption on Sakurajima

<http://mainichi.jp/english/english/newsselect/news/20150817p2a00m0na007000c.html>

The Japan Meteorological Agency (JMA) has warned that there is still a high possibility that a large-scale eruption will occur on Sakurajima, a volcanic island in the city of Kagoshima where the eruption alert level has been raised.

A total of 71 volcanic earthquakes were observed on Sakurajima on Aug. 16, the day after the volcanic eruption alert level on the island was raised from 3 to 4 requiring residents to prepare to evacuate. On Aug. 17, 11 such temblors were observed by 9 a.m.

On Aug. 15 alone, there were 1,023 volcanic earthquakes, including four noticeable ones that registered at least 1 on the 7-point Japanese intensity scale, surpassing 862 volcanic temblors that occurred throughout last month, according to the JMA. Although the number of volcanic earthquakes has since declined significantly, the frequency is still far higher than several such temblors a day before the alert level was raised.

Moreover, the JMA has pointed out that crustal changes that indicate mountain swell as a result of a magma rise are still continuing, although their activities have declined since Aug. 15.

Kazuya Kokubo, JMA senior analyst for volcanic activity, has warned of a possible eruption on Sakurajima. "Although crustal changes have slowed down, underground pressure hasn't been relieved. An eruption could occur at any time.

Residents who have evacuated from areas where an evacuation advisory has been issued temporarily returned home on Aug. 16 to collect daily necessities and other items. They were allowed to stay home for up to 30 minutes.

The Kagoshima Municipal Government has recommended that 77 people in 51 households in areas three kilometers from craters of the mountain flee their neighborhoods and take shelter. Currently, 31 people from 22 households, including those in areas that are not covered by the advisory, are taking refuge at two evacuation shelters on the island.

August 20, 2015

## Possibility of major eruption growing

### Mount Sakurajima may be ready to blow its top, agency warns

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201508200016](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201508200016)

There is a growing possibility of a major eruption at Mount Sakurajima in Kagoshima, according to the Japan Meteorological Agency.

The agency on Aug. 19 urged residents to continue to take precautions. It raised the warning for the mountain from Level 3 (restricting entry to the mountain) to Level 4 (preparing to evacuate) on Aug. 15. A decrease in the amount of volcanic gas discharged from the 1,117-meter-high mountain means that the volcanic pipe, which is a conduit for magma to pass through, is probably clogged up, the agency said. Kyoto University's Disaster Prevention Research Institute and other organizations said observations of the mountain on Aug. 19 showed that the volcanic gas discharge was around 100 tons per day, which is small. The amount sometimes exceeds 5,000 tons per day.

A large-scale eruption often occurs when the amount of gas discharged decreases to several hundred tons, the meteorological agency said.

A minor eruption occurred at 3:13 a.m. Aug. 19. It was the first eruption since the warning was raised to Level 4. A plume of smoke rose about 500 meters and volcanic tremors, which indicate the movement of magma, were confirmed.

Prior to the eruption, light from high-temperature volcanic gas turned the smoke around the mountain's vents into red. The phenomenon is called "kaei" (volcanic glow), and is not uncommon at Sakurajima.

Larger eruptions than the one on Aug. 19 have taken place 691 times this year.

Volcanic earthquakes centered around the Minamidake vent occurred 1,023 times on Aug. 15. The figure decreased to 71 on Aug. 16. It stood at nine during the first three hours of Aug. 19.

August 21, 2015

## Blocked vent on volcano increases danger

### Blocked vent on Kagoshima volcano increasing likelihood of massive eruption

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201508210033](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201508210033)

By MAIKO KOBAYASHI/ Staff Writer

KAGOSHIMA--A major eruption at Mount Sakurajima here appears more likely after scientists confirmed that volcanic discharge that now covers the mountain's Showa vent has caused pressure to build up inside the mountain.

"The vent has almost been blocked up, and explosive power is increasing as a result of heightened pressure inside the vent," said Masato Iguchi, the scientist who heads the Kyoto University's Sakurajima Volcano Research Center. Iguchi joined the aerial survey undertaken by the Japan Meteorological Agency on Aug. 19 to study the situation.

The Asahi Shimbun conducted an aerial survey on the afternoon of Aug. 15. Reporters spotted eruptive products deposited at the vent. They also witnessed the discharge of volcanic gas.

Iguchi also confirmed on Aug. 19 that the volcanic discharge remained there.

Earlier that day, a minor eruption occurred at the Showa vent at 3:13 a.m. It was the first eruption since the agency raised the warning to Level 4 (prepare to evacuate) from Level 3 (restricted entry to the mountain) on Aug. 15.

Eruptions have occurred 672 times between January and June this year at Mount Sakurajima. The number, however, fell sharply to 14 in July. Experts believe that the debris consists of discharge spewed during the intensive eruptive activity between May and June.

Meanwhile, researchers at the Geospatial Information Authority of Japan observed that the land has expanded in both an east and west direction by up to 16 centimeters on the east side of the Minamidake vent from Aug. 10 onward. The movement is apparently the result of the rise of magma below the Showa vent, the researchers said.

The scientific team analyzed data taken from the Daichi-2 advanced land-observation satellite.

August 22, 2015

## Evacuation advisory lifted

### **Sakurajima evacuation alert lifted as eruption risk diminishes; residents remain cautious**

<http://www.japantimes.co.jp/news/2015/08/22/national/sakurajima-evacuation-alert-lifted-eruption-risk-diminishes-residents-remain-cautious/#.Vdhi9pfwlLM>

Kyodo, JJI

KAGOSHIMA – The Kagoshima Municipal Government on Saturday lifted an evacuation advisory for areas around Sakurajima volcano in southwestern Japan following a state-backed panel’s judgment that the risk of an eruption appears to be diminishing.

But the Meteorological Agency is urging continued caution, maintaining the warning level on the 1,117-meter volcano in Kagoshima Prefecture at 4 on a 5-point scale and instructing nearby residents to stay ready to evacuate. The warning level was raised from 3 on Aug. 15.

On Saturday, Kagoshima Mayor Hiroyuki Mori released a statement welcoming the lifting of the evacuation advisory. But he also called for continued caution against more eruptions.

The state-backed Coordinating Committee for Prediction of Volcanic Eruptions said Friday it is necessary to continue closely monitoring the volcanic activities of Sakurajima, as another small eruption occurred. The risk of a larger-than-usual eruption seems to be diminishing, the panel said after its meeting in Kagoshima Prefecture. But it also said, “There is a need to closely monitor changes in the activities.”

A small volcanic eruption occurred at around 2 p.m. Friday following one Wednesday, shooting ash some 400 meters into the air.

At a news conference in Kagoshima on Friday, Kyoto University professor Masato Iguchi, a member of the panel in charge of predicting volcanic eruptions, announced the assessment, which was agreed on at its meeting held in the city the same day.

Iguchi said it is highly likely that the swelling of Sakurajima came because magma was about to rise up through a path different from a conventional vent, he explained, adding that the magma now appears to be static.

Still, the risk remains that the magma will start rising again, leading to an eruption, and close monitoring continues to be needed for possible changes in the situation, according to Iguchi.

Sadayuki Kitagawa, director at the Meteorological Agency's Volcanology Division, said: "We'll carefully consider whether to lower the alert back to Level 3 while monitoring volcanic earthquakes and tectonic movements at Sakurajima. We can't say by when we will do so."

Given the lifting of the evacuation advisory, Sakurajima residents who sought shelter in municipalities around the volcano expressed mixed feelings. While many voiced relief about their futures, others said they remain worried about possible major eruptions.

"I'm as happy as ever. That's my homeland, where my ancestors lived," said Toru Sakamoto, 55, who evacuated from his house for about a week. "A big eruption could occur after I come home, but I'm prepared for that."

A week since the volcanic alert was raised, the city of Kagoshima remains vigilant against a possible large-scale eruption, amid mounting concern about negative effects on the local tourism industry.

For safety reasons, the city government suspended a tour bus service in Sakurajima and canceled a fireworks display and a children's soccer tournament.

A local tourism industry official has reported a marked increase in the cancellations of accommodation reservations in the midst of the peak summer travel season.

Located near the terminal for ferries connecting Sakurajima with the city center, the Sakurajima Visitor Center, a museum displaying the history of the volcano's eruptions, saw the number of visitors drop to about 150 per day. Before the alert level was lifted, the facility attracted some 650 visitors on a busy day.

"Sales at the museum's gift shop have more than halved. It'll be hard if the situation remains unchanged," said Daisuke Fukushima, 41, chief of the operating body of the museum.

The city has shut two observatories about 3 km from the crater. As the excursion bus service has been halted, sales at souvenir shops at local tourist spots have decreased.

The fireworks event, which was scheduled to take place on the foreshore opposite Sakurajima, was canceled after attracting 135,000 visitors last year.

"Some 200 to 300 reservations have been canceled though it is the busiest season of the year," Sakurajima Youth Hostel manager Takako Nakano, 66, said. "Tourists may not come back soon even if volcanic activities calm down."

Takao Nomoto, 64, executive at the Kagoshima Convention & Visitors Bureau, had a calmer view.

"It cannot be helped that accommodation bookings are canceled," he said, while also adding that the bureau has received inquiries from people living outside Kagoshima Prefecture and travel agencies as to whether the volcanic activities have had any effect on Kagoshima's city center.

"We will convey accurate information, hoping that tourists will enjoy traveling" in the city, Nomoto said.

## **Evacuation advisory lifted for Sakurajima volcano**

<http://mainichi.jp/english/english/newsselect/news/20150822p2g00m0dm038000c.html>

KAGOSHIMA, Japan (Kyodo) -- The Kagoshima city government on Saturday lifted an evacuation advisory for areas around Sakurajima volcano in southwestern Japan following a state-backed panel's judgment that the risk of an eruption seems to be diminishing.

But the Japan Meteorological Agency is urging continued caution, maintaining the warning level on the 1,117-meter volcano in Kagoshima Prefecture at 4 on a 5-point scale and instructing nearby residents to stay ready to evacuate. The warning level was raised from 3 on Aug. 15.

On Friday, the Coordinating Committee for Prediction of Volcanic Eruptions said the risk of a larger-than-usual eruption seems to be diminishing, but it also said, "There is a need to closely monitor changes in volcanic activities."

The evacuation advisory had been issued for 77 residents in three areas near the mountain.

The number of volcanic earthquakes at the mountain reached 1,023 on Aug. 15, but has since been on a sharp decline, with eight monitored on Friday.

Two small-scale eruptions occurred after the warning level was raised, one on Wednesday and another on Friday.

August 24, 2015

## Cracked pipes in one condenser

### Seawater leak found at Sendai nuclear plant

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the Sendai nuclear power plant in Kagoshima Prefecture, southwestern Japan, says it found seawater used to cool steam has leaked from some pipes.

The trouble occurred at a condenser for the plant's No.1 reactor last Thursday. Officials at Kyushu Electric Power Company found elevated salt levels in the machine.

The condenser uses seawater to turn the steam from the power turbine back into water. The reactor has 3 condensers, and each one is equipped with 26,000 thin pipes to carry seawater.

Utility officials have been checking these pipes. They say they found cracks in 5 pipes in one condenser and that seawater had leaked from them.

The officials stopped the flow of seawater by putting plugs in the 5 pipes. They are now checking the other tubes. The utility firm says they will keep running the reactor.

The trouble occurred 9 days after the operator restarted the reactor on August 11th. It was the first to go back online under new regulations introduced after the Fukushima nuclear accident in 2011.

The utility was due to raise the reactor's power output to 100 percent on Tuesday. But the problems are expected to delay the scheduled work by about one week.

## Typhoon to reach Kyushu on Tuesday

### **Typhoon Goni pounds Okinawa; Ishigaki gets strongest-ever gusts; injuries reported**

<http://www.japantimes.co.jp/news/2015/08/24/national/typhoon-goni-pounds-okinawa-ishigaki-gets-strongest-ever-gusts-injuries-reported/#.VdrEx5fwLLM>

JIIJ

Powerful Typhoon Goni slammed into the islands of Iriomote and Ishigaki in Okinawa Prefecture Sunday night.

The Meteorological Agency warned of strong winds, high waves and heavy rain as the 15th typhoon of the season is expected to approach the main island of Okinawa on Monday.

The typhoon registered a maximum instantaneous wind speed of 71.0 meters per second on Ishigaki, the strongest on record there. Rainfall of 65.0 mm per hour was observed on the island.

At least 100 people took shelter across Okinawa, including 52 residents and tourists on Ishigaki, according to prefectural officials and other sources.

There are reports of some injuries, Ishigaki officials said.

A total of about 21,500 houses on Ishigaki and some other places briefly lost power supply, according to Okinawa Electric Power Co.

At 11 p.m. (2 p.m. GMT), the typhoon was heading north-northeast near Ishigaki at a speed of 15 kph with a central atmospheric pressure of 940 hectopascals.

The storm is projected to go near Kyushu on Tuesday.

## Typhoon heads for Kyushu

### **Typhoon Goni batters Okinawa, heads for Kyushu**

<http://www.japantimes.co.jp/news/2015/08/24/national/typhoon-goni-pounds-okinawa-ishigaki-gets-strongest-ever-gusts-injuries-reported/#.Vdt4IJfwLLN>

Kyodo, JIIJ

Typhoon Goni, which battered Okinawa and was over the East China Sea on Monday, was poised to make a landfall on Kyushu on Tuesday morning, prompting the Meteorological Agency to warn of violent winds and high waves.

The weather agency also alerted residents in Shikoku and western Japan that there could be landslides and floods.

Violent winds are expected in Kyushu from early Tuesday with the maximum wind speed reaching 144 kph. Wind will also blow at maximum 108 kph and 82.8 kph in Kagoshima Prefecture's Amami and Okinawa Prefecture, respectively.

Waves as high as 9 to 12 meters were forecast in seas around Kyushu, Okinawa Prefecture and Amami, while maximum 8 meter and 6 meter waves are expected for Shikoku and Kinki regions.



The typhoon was also expected to bring heavy rainfall of more than 80 millimeters per hour to Shikoku, where up to 400 mm of rain may fall in 24 hours through 6 a.m. Tuesday, it said.

As of 6 p.m., the typhoon was located 140 km west-northwest of Amami and moving northeast at 40 kph with an atmospheric pressure of 940 hectopascals near its center.

Nine people were injured in Okinawa Prefecture by Monday due to the typhoon. Six of the injured people were on Ishigaki Island, where the maximum instantaneous wind speed of 255.6 kilometers per hour was observed on Sunday night.

All Nippon Airways canceled more than 80 flights, mostly those to and from Okinawa's Naha Airport, and Japan Airlines canceled more than 40 flights.

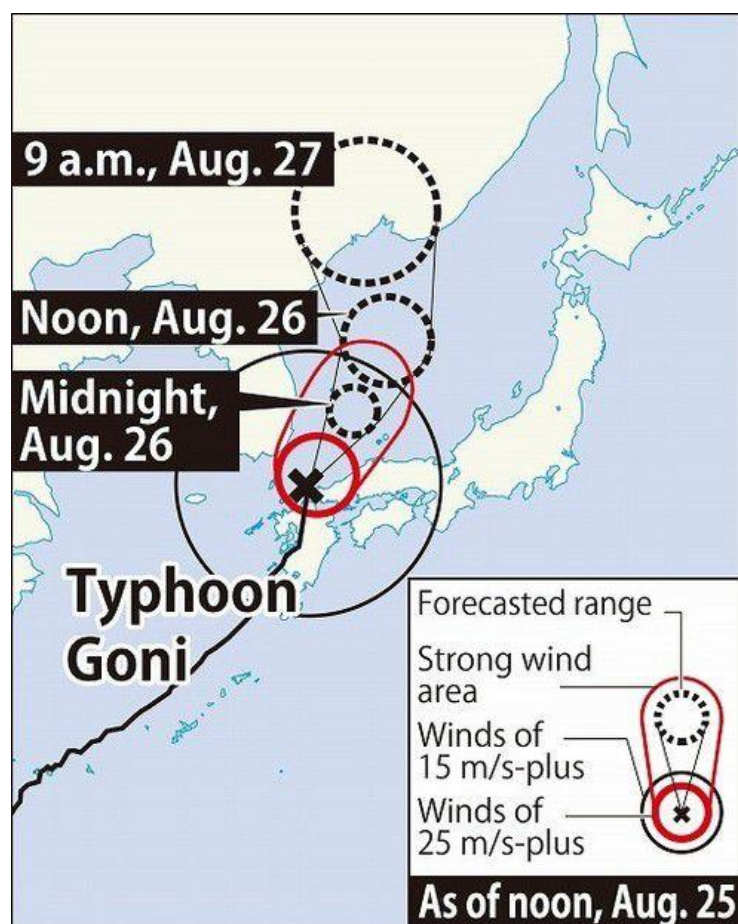
Typhoon Goni dumped heavy rain and triggered landslides in the northern Philippines before approaching Taiwan and Japan, leaving at least 17 people dead and 14 others missing.

Another typhoon, Astani, was moving northeast in the Pacific east of Japan.

August 25, 2015

## Typhoon Goni

**Around 240,000 households advised to evacuate as typhoon hammers Kyushu**



Some 240,000 households received advisories to evacuate as powerful Typhoon Goni slammed Kyushu on Aug. 25.

The typhoon, the 15th of the season, made landfall around Arao, Kumamoto Prefecture, a little past 6 a.m. on Aug. 25. As it passed north through northern Kyushu, almost all of Kyushu and Yamaguchi Prefecture were enveloped in the storm's heavy wind zone. At least 37 people were injured. Combined with the 10 people injured from the typhoon's passage through Okinawa Prefecture on Aug. 24, there have been at least 47 people injured so far by Typhoon Goni.

According to the Japan Meteorological Agency (JMA), while Typhoon Goni has weakened somewhat, it continues to possess great strength. As of 11 a.m. on Aug. 25, it was traveling north at about 40 kilometers per hour some 50 kilometers northwest of Shimonoseki, Yamaguchi Prefecture. Its central air pressure was 965 hectopascals, and its maximum wind speed was 50 meters per second.

Maximum wind speeds of 41.9 meters per second and 37 meters per second were recorded in the cities of Kumamoto and Saga, respectively. Fukuoka's Sawara Ward and Saga's Mitsusemura district recorded around 120 millimeters of rainfall in one hour, and Kitakyushu's Kokuraminami Ward recorded 110 millimeters in one hour. The JMA issued warnings to these areas for record short-term rainfall.

Evacuation orders, meanwhile, were issued for Kurume, Fukuoka Prefecture, Nishi and Sawara wards in the city of Fukuoka, and other locations, covering 177,653 people in 82,768 households.

Recommendations to evacuate were given for all of Shimonoseki, as well as other locations across Fukuoka, Kumamoto and Yamaguchi prefectures, covering 388,338 people in 161,050 households.

By a Mainichi Shimbun count, as of 11 a.m. on Aug. 25, as many as 8,607 people had evacuated. At least 19 homes had been damaged, and blackouts have occurred.

According to six airlines, some 250 flights leaving or going to the Chugoku, Shikoku or Kyushu regions were canceled, affecting around 30,000 potential passengers.

All train services on the Kyushu Shinkansen Line and operations between Hakata and Hiroshima stations on the Sanyo Shinkansen Line were stopped all day on Aug. 25.

The typhoon has brought a string of injuries. In Yatsushiro and Minamata in Kumamoto Prefecture, three people were injured by broken glass. In Yatsushiro, a 42-year-old driver of a moving truck that was blown over had his right elbow injured. In Saiki, Oita Prefecture, another driver of a moving truck was injured and sent to the hospital after it was blown over.

At around 7 a.m. in Yukuhashi, Fukuoka Prefecture, a 52-year-old man repairing his home roof fell and had his legs injured. In Sanyo-onoda, Yamaguchi Prefecture, an 80-year-old woman fell while heading from her home to a nearby citizens' hall to evacuate, breaking her left foot. In Nagasaki's Tenjincho, a man in his 20s suffered injuries to his wrists from broken glass caused by strong winds.

In Kumamoto's Chuo Ward, a tree was uprooted and blocked a prefectural road.

According to the JMA, the typhoon is expected to slowly move away from Japan on Aug. 26.

## Sendai: Problem solved?

### Sendai plant to increase output from Thursday

[http://www3.nhk.or.jp/nhkworld/english/news/20150825\\_40.html](http://www3.nhk.or.jp/nhkworld/english/news/20150825_40.html)

The operator of Japan's only activated nuclear plant says it will begin increasing the power output on Thursday after solving a problem with reactor equipment.

Workers found seawater leaking into cooling water at the No.1 reactor of the Sendai nuclear plant in Kagoshima Prefecture last Thursday. The reactor had gone back online 9 days earlier.

Kyushu Electric Power Company had initially planned to increase the reactor's output to the maximum level, but delayed the work to identify the cause of the trouble.

Company officials said they found that 5 of about 26,000 narrow pipes carrying seawater in a condenser were damaged and 470 liters of seawater had been leaked.

The condenser is one of the 3 units that convert steam from the power turbines into water, using seawater to cool it down.

The utility said it suspects the 5 pipes were damaged by heat and high pressure in the condenser.

Officials say the damaged parts have not been checked since 2006. They say they will review the inspection procedures to carry out more frequent checks. But they stress that the problem does not affect the safety of the reactor.

The utility plans to plug the 5 damaged pipes as well as 64 surrounding ones to prevent seawater from leaking into the cooling water. The system will undergo inspection by the Nuclear Regulation Authority Secretariat. If approved, the operator will begin increasing the output on Thursday and raise it to 100 percent on Monday or later.

The reactor was the first to go back online under the new regulations introduced after the Fukushima nuclear accident in 2011.

## Sendai: Problem solved? (2)

### **Sendai nuclear plant operator set to plug leaks in 5 cooling system pipes**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201508250046](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201508250046)

SATSUMA-SENDAI, Kagoshima Prefecture--The operator of the recently reactivated Sendai nuclear power plant here said it had pinpointed the sites of leaks that forced a postponement of full reactor operations. Kyushu Electric Power Co. said it detected tiny cracks in five narrow pipes that carry seawater used to cool steam. The pipes are part of the steam condenser at the No. 1 reactor, which resumed operation on Aug. 11.

Output will be maintained at 75 percent of capacity, while the utility carries out checks for further holes. Kyushu Electric was expected to release a final report on the glitch on Aug. 25. At the same time, it said fully restored reactor operations will be postponed from the scheduled date of Aug. 25.

The regional utility detected a tiny amount of seawater leaked into one of three condensers in the secondary cooling system of the reactor, which has an output of 890 megawatts, on Aug. 20. The seawater was flowing in the condenser, a device that converts steam used in power generation to water by cooling it, and became mixed with the secondary cooling water that does not contain radioactive materials.

Kyushu Electric suspended operations of one of the two water circulation channels through the condenser at issue and inspected narrow pipes forming the system by passing an electric current through it. Technicians found miniscule holes in five of 13,000 pipes they had inspected as of 10 a.m. on Aug. 24. After inspecting all the pipes, the workers will repair the faulty bits.

Kyushu Electric said the seawater was removed with a desalination device and operations at the No. 1 reactor were not hindered.

The reactor was restarted earlier this month for the first time since it was shut down for a periodic inspection in May 2011. Opponents of the plant have voiced safety concerns.

## Fishermen agree to dump radioactive water into sea



### Agreement reached on decontaminated water disposal

[http://www3.nhk.or.jp/nhkworld/english/news/20150825\\_33.html](http://www3.nhk.or.jp/nhkworld/english/news/20150825_33.html)

Fishers in Japan's northeastern prefecture of Fukushima have formally allowed the release of decontaminated groundwater from around buildings of nuclear reactors into the sea.

The release is aimed at reducing production of heavily contaminated water in the basements of the buildings at the Fukushima Daiichi plant.

Groundwater flowing into the buildings is producing 300 tons of highly radioactive water daily, resulting in a huge number of storage tanks at the plant.

Plant operator Tokyo Electric Power Company, or TEPCO, and the government have been asking the fishers to allow the release to keep the water from flowing into the buildings and becoming heavily tainted.

TEPCO plans to use 41 wells already dug around the buildings to pump up the water and lower the levels of radioactive substances to between one-one-thousandth and one-ten-thousandth of their original amounts before releasing it.

The operator, the government and an independent institution plan to check so that only water below allowed levels is discharged.

On Tuesday, the local federation of fisheries cooperatives approved the plan on condition that the release rules are strictly followed and that compensation is paid for any damage due to harmful rumors.

Federation chairman Tetsu Nozaki said the approval was decided unanimously, but that some members were dissatisfied. He added that the plan is needed for steadily decommissioning the plant, and that he wants TEPCO and the government to keep their word.

The firm's Fukushima headquarters chief Yoshiyuki Ishizaki said the plan is a big step forward in the decommissioning process as well as tackling the problem of contaminated water. He said fishermen told him that the plan could lead to rebuilding of Fukushima's fishing industry, and that he will keep their remarks in mind.

TEPCO plans to start releasing the water soon.

## **Fishermen OK TEPCO's plan to dump Fukushima plant water into sea**

<http://mainichi.jp/english/english/newsselect/news/20150825p2g00m0dm075000c.html>

FUKUSHIMA, Japan (Kyodo) -- Fishermen in Fukushima Prefecture approved on Tuesday a plan by Tokyo Electric Power Co. to pump up contaminated groundwater continuously flowing into the stricken Fukushima Daiichi nuclear station and dump it into the ocean after removing almost all radioactive materials from it.

The plan is one of TEPCO's key measures aimed at curbing the amount of toxic water buildup at the complex. Local fishermen had long opposed the plan amid concern over pollution of the ocean and marine products.



"I don't know if it's acceptable for all fishery operators, but stable work of decommissioning (of the Fukushima plant) is necessary for the revival of Fukushima's fishery industry," Tetsu Nozaki, chairman of the Fukushima Prefectural Federation of Fisheries Co-operative Associations, told reporters after a board meeting.

He also called on TEPCO to make sure it will only discharge water which does not contain radioactive materials exceeding the legally allowable limit.

The amount of toxic water is piling up every day, as untainted groundwater is seeping into the reactor buildings and mixing with radioactive water generated in the process of cooling the reactors that suffered meltdowns in the nuclear crisis triggered by a massive earthquake and tsunami in 2011.

By pumping up water through drainage wells and dumping it into the ocean after treatment, **TEPCO said it will be able to halve some 300 tons of contaminated water being generated each day.**

In exchange for approving the plan, the Fukushima fisherman's association demanded on Aug. 11 that the government and TEPCO continue paying compensation for the fishermen as long as the nuclear plant causes damage to their business, among other requirements.

On Tuesday, the National Federation of Fisheries Cooperative Associations also gave the green light for the release of treated water into the sea.

TEPCO has been struggling to resolve the problem of toxic water buildup at the plant for more than four years after the nuclear crisis, with radiation leakages into the environment still occurring regularly at the complex.

The company is also behind schedule on a project to build a huge underground ice wall, another key measure to prevent radioactive water from further increasing at the site.

## **Fishermen OK Tepco's plan to dump Fukushima plant water into sea**

<http://www.japantimes.co.jp/news/2015/08/25/national/fishermen-ok-tepcos-plan-dump-fukushima-plant-water-sea/#.VdyVq5fwlLM>

Kyodo

FUKUSHIMA – Fishermen in Fukushima Prefecture on Tuesday approved a plan by Tokyo Electric Power Co. to take contaminated groundwater continuously flowing into the stricken Fukushima No. 1 nuclear plant and dump it into the ocean after removing almost all radioactive materials from it.

[...]

August 26, 2015

## **New guidelines for radiation treatment**

### **Nuclear regulator designates 5 treatment centers**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear regulator has designated 5 medical institutions as treatment centers for people exposed to heavy doses of radiation in the event of an accident at a nuclear plant.

The Nuclear Regulation Authority released its revised disaster preparedness guidelines on Wednesday. The new rules reflect lessons learned from the 2011 accident at the Fukushima Daiichi power plant.

Prefectures within 30 kilometers of a nuclear plant are now required to designate one to 3 medical institutions as base hospitals.

In addition, 5 institutions were chosen to take charge of serious radiation exposure cases if the base hospitals are unable to. The 5 institutions are in Chiba, Hiroshima, Nagasaki, Fukushima and Aomori prefectures.

The guidelines also stipulate that if an accident is severe, the 5 institutions and the base hospitals will work together to send medical teams to affected areas.

The government's previous plan called for medical institutions around nuclear plants to provide treatment. **This plan assumed that only a few plant workers would be affected by a nuclear accident.**

Many evacuees potentially exposed to radiation in the Fukushima Daiichi disaster did not receive adequate medical attention through the system.

## Japan revises guideline on medical care in nuclear emergency

<http://mainichi.jp/english/english/newsselect/news/20150826p2g00m0dm065000c.html>

TOKYO (Kyodo) -- Japan's Nuclear Regulation Authority on Wednesday revised a guideline on measures against nuclear emergency **to boost the country's medical preparedness for nuclear disaster**, reflecting lessons learned from the Fukushima meltdowns triggered by a huge earthquake and tsunami in 2011. The regulator aims to build a medical service network to that end across the country over the next three years or so by **obliging local municipalities hosting nuclear plants to designate one or more hospitals as medical institutions that can provide emergency treatment for radiation exposure.**

The disaster at Tokyo Electric Power Co.'s Fukushima Daiichi complex, which resulted in the massive leakage of radioactive materials, exposed the vulnerability of hospitals and medical networks in the event of a nuclear emergency, with many evacuees not given proper treatment.

The regulator designated a total of five university hospitals and research institutions, including Fukushima Medical University and Hiroshima University, as facilities for treatment of a large number of people exposed to high levels of radiation, who could not be treated within the framework of local medical networks.

Under the revised guideline, the regulator also calls for **strengthening advanced education on radiation treatment for medical staffers, while organizing teams -- comprising doctors, nurses and nuclear experts -- which will be dispatched to support local hospitals in the event of a nuclear emergency.**

On Aug. 11, a nuclear reactor located on the southwestern Japanese main island of Kyushu came back online, becoming the first reactor in Japan to be reactivated under the post-Fukushima, upgraded safety regulations.

The government seeks to reactivate the remaining idled reactors that have cleared the regulator's safety screening, but strong safety concerns over the use of nuclear power remain among the public.

August 29, 2015

## Abnormal growth in Fukushima fir trees

### Abnormalities found in trees near Fukushima plant

[http://www3.nhk.or.jp/nhkworld/english/news/20150829\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20150829_05.html)

Japan's Environment Ministry has found abnormalities in fir trees near the crippled Fukushima Daiichi nuclear power plant.

The ministry has been observing about 80 species of wild animals and trees near the plant since 2011, when Japan suffered its worst nuclear accident.

At the request of the ministry, the National Institute of Radiological Sciences analyzed fir trees in areas where radiation levels are relatively high and published the results on Friday.

The results show that Japanese fir populations in the area showed **a significantly increased number of morphological defects**, including deletions of leader shoots of the main branch axis.

**The study shows that 98 percent of fir trees in a 3.5-kilometer area from the damaged plant have defects. The radiation dose in the area is about 34 microsieverts per hour.**

**The results also show that 44 percent of fir trees have defects in an 8.5-kilometer zone with 20 microsieverts of radiation, and 27 percent in a 15-kilometer zone with 7 microsieverts of radiation.**

The institute says the results indicate that radioactive materials emitted after the nuclear accident may have caused such morphological abnormalities.

The results have been also posted on the website of the British science magazine, Scientific Reports.

The institute's Satoshi Yoshida says conifers such as fir trees are more susceptible to radiation.

But he said relations between such defects and radiation are still unclear and that further studies are necessary.

The Environment Ministry says no abnormality has so far been confirmed in other animals and trees.



## **Fukushima fir trees in higher radiation areas showing abnormal growth**

<http://mainichi.jp/english/english/newsselect/news/20150829p2a00m0na017000c.html>



A fir tree missing its top bud. (Photo courtesy of National Institute of Radiological Sciences)

Abnormal growth has been detected in fir trees in three areas of Fukushima Prefecture exposed to high radiation levels in the wake of the Fukushima nuclear disaster, say researchers.

Research published in the academic journal Scientific Reports on Aug. 28 showed that the top buds of many fir trees in heavily contaminated areas were missing.

Researchers examined fir trees in three areas in the Fukushima Prefecture towns of Okuma and Namie, using fir trees in the city of Kitaibaraki, Ibaraki Prefecture, as a control group. The researchers checked between 111 and 202 fir trees in each location.

In the area with the highest radiation level of 33.9 microsieverts per hour, located in Okuma, 97.6 percent of the observed fir trees did not have a top bud -- without which the trees' growth cannot continue. In two areas of Namie where radiation levels reached 19.6 microsieverts per hour and 6.85 microsieverts per hour, the same abnormality was seen in 43.5 percent and 27 percent of the fir trees, respectively. In Kitaibaraki, where radiation stood at 0.13 microsieverts per hour, the abnormality was seen in 5.8 percent of the fir trees.

The researchers say that these abnormalities have increased in prevalence since 2012. The Fukushima disaster occurred in 2011. At the same time, they say that more research is needed into the causal relationship between radiation and the abnormalities, and the underlying mechanisms of how the abnormalities occur.

In wild animal and plant life surveys being conducted by the Ministry of the Environment since fiscal 2011, around 80 species have been observed, but fir trees are the only one to have shown abnormalities, the ministry says.

Conifers are known to be susceptible to the effects of radiation. Abnormalities in Scots Pines were reported after the Chernobyl nuclear disaster in the former Soviet Union in 1986. However, the underlying mechanisms behind the changes are unknown.

Atsushi Kasai, a former senior researcher at the Japan Atomic Energy Research Institute, who is knowledgeable about the Chernobyl disaster, says, "The areas in Chernobyl where tree abnormalities appeared had much higher radiation levels than those in this new research. It is necessary to carefully look into the causes, taking into effect environmental factors such as weather conditions."

## **Morphological defects found in Japanese fir trees around Fukushima nuclear plant**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201508290045>

Radiation spewed out by the crippled Fukushima No. 1 nuclear power plant may be responsible for differences in the growth of native Japanese fir trees in the area.

Researchers primarily from the National Institute of Radiological Sciences said Aug. 28 that many fir trees near the plant, as well as other areas, had undergone "morphological defects."

They intentionally avoided words like abnormality, but used morphological defects and change. Their studies showed that the changes occurred more frequently in areas with higher air rates of radiation.

"But it is still unclear whether the phenomenon has been caused by radial rays," a team member concluded, adding that exposure to higher levels of radiation is "one possible cause."

Conducted in January, the survey covered the town of Okuma in Fukushima Prefecture, located 3.5 kilometers from the plant, where radiation levels of 33.9 microsieverts per hour were detected, and two locations in the town of Namie, also in the prefecture.

While one of the Namie investigation sites is 8.5 km from the plant and measured 19.6 microsieverts per hour, readings of 6.85 microsieverts were detected at the other spot, located 15 km from the facility.

All the sites are within the government-designated difficult-to-return zone, meaning that the residents were evacuated and are prohibited from living there.

The team also examined firs in distant Kita-Ibaraki, Ibaraki Prefecture, which had radiation levels of 0.13 microsieverts per hour, for comparison.

In each of the four sites, the scientists checked 100 to 200 fir trees.

They found that **more than 90 percent of firs in the Okuma site were not growing normally**. Fir tree boles normally extend upward with two or so branches arising from them horizontally each year. But this was not the case.

Similar changes in shape were found in more than 40 percent of firs and around 30 percent of the trees, respectively, in the two Namie locations. Less than 10 percent of fir trees in the Kita-Ibaraki survey site also were different.

According to the NIRS, findings of studies concerning the 1986 Chernobyl nuclear disaster and other research revealed that conifers, such as firs and pine trees, are vulnerable to the effects of radiation. However, the scientists noted that the problems reported in their latest survey may have been caused by animals, tree sickness or cold weather, not by exposure to strong radiation.

The Environment Ministry has been examining the impact of radial rays on local ecosystems since the nuclear crisis unfolded at the Fukushima nuclear plant four years ago. The NIRS study is part of those ministry efforts.

The governmental agency has to date monitored 44 kinds of animals and plants in areas around the damaged facility, but no other significant changes or abnormalities have been reported.

#### **'LABORATORY EXPERIMENTS ESSENTIAL'**

Tomoko Nakanishi, a professor of radiation plant physiology at the University of Tokyo, said the latest findings are invaluable as researchers have difficulty doing surveys in the difficult-to-return zone due to high radiation readings.

"There had been so little data on such areas," she said.

But **Nakanishi also pointed out it will require further research to conclude the morphological changes have been caused by exposure to radial rays**.

"Other factors may have affected fir trees," Nakanishi said. "Researchers need to examine through lab experiments what will happen when firs are exposed to high levels of radiation."

## **Typhoon season soon : TEPCO still not fully prepared against radioactive leaks**

### **Contaminated rainwater at Fukushima plant repeatedly leaked into sea**

<http://mainichi.jp/english/english/newsselect/news/20150829p2a00m0na019000c.html>

FUKUSHIMA -- Rainwater containing radioactive contaminants flowed from a drainage ditch by the reactor buildings at the Fukushima No. 1 Nuclear Power Plant into the sea on five occasions in just over four months, it has been learned.

The ditch is 2 meters deep and 2 meters wide, and stretches for about 800 meters. It was created to ferry rainwater from the plant grounds into the ocean, but in February this year it was learned that highly contaminated rainwater from the top of the No. 2 reactor building had flowed into the ditch and subsequently into the ocean. Tokyo Electric Power Co. (TEPCO), the operator of the plant, set up a 70-centimeter-high dam in the ditch, as well as eight pumps to move water from the ditch to another ditch that runs into a sealed harbor area. The pumps, which together can process rainfall of 14 millimeters per hour, were started on April 17 this year.

On April 21, however, loss of power caused by trouble with power generators resulted in all of the pumps shutting down, and contaminated water leaked into the sea. On July 16, rainfall rose to 21 millimeters per hour at one point. This was more than the pumps could handle, and workers confirmed that water flowed into the ocean. In all, five leaks from the ditch occurred in the period between April 17 and Aug. 27.

The concentrations of radioactive cesium and other radioactive materials in the contaminated rainwater ranged from around 20 to 670 times the safety level set for a "subdrain" plan in which decontaminated groundwater is to be released into the ocean.

The volume of leaked rainwater is unknown, but no changes have been seen in radioactive concentrations in the sea near the plant.

The Fukushima Prefectural Government on Aug. 27 issued a new request to TEPCO to introduce leak prevention measures. The next day, TEPCO raised the ditch dam by 15 centimeters, but Naohiro Masuda, chief decommissioning officer at Fukushima Daiichi Decontamination and Decommissioning Engineering Co., says, "Our main countermeasure will be to replace the ditch with a new one."

This new ditch is designed to carry rainwater into the sealed harbor area. Masuda indicated that until completion of the new ditch -- scheduled within the fiscal year -- additional leaks may be unavoidable. **The plant therefore looks set to enter the typhoon season without full preparations against further leaks.**

In February, after the rainwater leaks were discovered, fishermen protested that TEPCO had not released radiation measurements for the drainage ditch water for around 10 months. Negotiations with fishermen over the subdrain plan were subsequently put on hold. However, the Fukushima Prefectural Federation of Fisheries Co-operative Associations officially agreed to the plan after receiving notification from TEPCO and the national government regarding measures to prevent a recurrence of the leaks.

Regarding the rainwater leaks, federation chairman Tetsu Nozaki commented, "All we can do is to ask TEPCO to improve the situation. The subdrain plan is a separate issue, and there is no change in our acceptance of it."

August 31, 2015

## Nuclear disaster drill In Fukushima

## 2,000 people join nuclear disaster drill in Fukushima

<http://mainichi.jp/english/english/newsselect/news/20150831p2a00m0na002000c.html>

MINAMISOMA, Fukushima -- The Fukushima Prefectural Government organized a nuclear disaster drill here on Aug. 30 ahead of nationwide Disaster Prevention Day on Sept. 1.

Some 2,000 people, including local residents, fire department officials, police officers and Self-Defense Force personnel, joined the general disaster drill in the city where some of its areas remain as evacuation zones following the 2011 nuclear meltdown.

The drill was held on the assumption that the Fukushima No. 1 Nuclear Power Plant, battered in the 2011 earthquake and tsunami, was hit by another massive tsunami triggered by a large earthquake. The exercise supposed that the cooling system of the spent fuel pool at the Fukushima plant had stopped while undergoing decommission work, releasing radioactive material into the atmosphere. Residents evacuated to a designated site and then went through a radiation exposure screening conducted by medical experts dressed in protective gear.

September 1, 2015

## Disaster prevention: "Issues to be discussed in the future"?

### No disaster prevention scheme worked out for 17 nuclear facilities

<http://mainichi.jp/english/english/newsselect/news/20150901p2a00m0na015000c.html>

No work has been done to establish a disaster prevention scheme for 17 nuclear facilities despite the fact the central government laid out its policy nearly three years ago to review the country's nuclear disaster prevention structure in the wake of the Fukushima nuclear meltdowns.

The 17 nuclear facilities consist of nuclear fuel processing and reprocessing and experimental and research facilities across the country that are subject to the Act on Special Measures Concerning Nuclear Emergency Preparedness. No discussion has been held on disaster prevention schemes for such facilities. Some of them are located in urban areas, but local governments hosting such facilities have been urging the central government to review the country's nuclear disaster prevention scheme as local governments are unable to reflect such a scheme in their disaster prevention plans including those for the evacuation of local residents.

The Power and Industrial Systems Research and Development Center, a nuclear research arm of Toshiba Corp., is one of the 17 facilities. Its premises are situated side by side with Nippon Steel & Sumikin Pipe Co.'s steel plant in Kawasaki where a fire broke out on Aug. 24. The nuclear facility is located about 300 meters from the fire site. Toshiba said, "It was not affected by the fire." It went on to say, "The research facility is a basic facility for development of nuclear technology and it is a reactor with a maximum output of 200 watts which is extremely low."

Haneda Airport is about 1 kilometer from the facility on the other side of the Tama River. But Toshiba said, "We assess that the assumed annual radiation dose in the event of a fire or an airplane crash is 1 millisievert (the maximum permissible level of annual radiation exposure for an ordinary person) or lower."



The Nuclear Regulation Authority (NRA) provisionally designated disaster prevention priority areas for the 17 facilities at zones within a radius of between 50 meters and 10 kilometers from the facilities, depending on their scale and type -- the same as those set before the Fukushima nuclear disaster. Meanwhile, **the guidelines for countermeasures against nuclear disasters formulated in October 2012 under the Act on Special Measures Concerning Nuclear Emergency Preparedness expand the disaster prevention priority areas for nuclear power plants to about nine times as large as those set before the Fukushima disaster.** But the guidelines say that the disaster prevention priority areas for the 17 nuclear facilities will be discussed with an eye toward reviewing them and be reflected in the guidelines. The guidelines also say that criteria for designating evacuation areas and methods are "issues to be discussed in the future."

According to the NRA's Secretariat, however, no specific discussion on such issues has been made. An official of the secretariat said, "The NRA has been taking time to sort things out because the facilities vary in type and size from one another."

The disaster prevention priority area for Toshiba's research facility is set at a radius of 100 meters which falls within its premises. But in 2013, the Kawasaki Municipal Government added "release of radioactive materials outside of the facility" to the list of assumed conditions set in its disaster prevention plan. But no decision has been made on specific areas and methods of evacuation. A municipal government official said, "Because the central government has not shown its criteria, we are watching the progress."

About 4,000 people live in a provisional disaster prevention priority area for a nuclear fuel processing facility in the Kanagawa Prefecture city of Yokosuka, but the Kanagawa Prefectural Government has not been able to revise its disaster prevention plan. The Kanagawa Prefectural Government has been requesting the central government in writing every year since 2012 to review the guidelines.

There are three nuclear facilities including a university research unit and a nuclear processing facility in Osaka Prefecture, and they are located close to residential areas. The governments of Osaka, Aomori, Ibaraki and Okayama prefectures have been urging the central government in writing and verbally to review the guidelines.

Hirota Hirose, professor emeritus at Tokyo Woman's Christian University, said, **"As long as the facilities are dealing with nuclear materials even though they are relatively small, a nuclear disaster could occur.**

The NRA should review the countermeasures that are ambiguous at present as soon as possible after properly assessing the risks."

September 2, 2015

## Waiting for (another) disaster

### Over 80 percent of seawalls along tsunami-affected areas not completed: survey

<http://mainichi.jp/english/english/newsselect/news/20150902p2a00m0na017000c.html>

Only 16 percent of seawalls planned for construction at 677 coastal locations in six prefectures heavily affected by the 2011 tsunami have been completed even though more than four years have passed since the disaster, a government study has shown.

The government has set a budget of some 32 trillion yen for disaster recovery projects in the 10 years up to fiscal 2020. Of the 32 trillion yen budget, about 25.5 trillion yen is allocated for projects in the first five

years until the end of fiscal 2015, while the remaining 6.5 trillion will be allotted for the following five years. The cost of seawall construction is included in the budget.

Of 3,200 kilometers of coastline along six prefectures affected by the 2011 disaster -- Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba prefectures -- seawalls will be built along 986 kilometers of coastline. The height of seawalls varies in different locations, with parts stretching 50 kilometers, or 5 percent of the construction, reaching a height of 10 meters or higher, other sections of 567 kilometers, or 58 percent, will have seawalls measuring between over 5 meters and up to 10 meters and seawalls of less than 5 meters in height will be installed over a 369-kilometer section, or 37 percent of the construction. Of the 50-kilometer parts that will have seawalls at least 10 meters tall, 46 kilometers are located in Iwate Prefecture and the remaining 4 kilometers are in Miyagi Prefecture.

According to a study conducted by the Ministry of Land, Infrastructure, Transport and Tourism, seawalls at only 109 of 677 locations had been completed as of the end of June, while 356 other locations were under construction. Seawall construction at 212 locations had not started. Of those, agreements with local authorities have been reached for 177 locations and concerned parties are negotiating over the use of land, but a consensus has not been reached with locals for the remaining 35 locations.

Details of the seawall projects, such as the height of the walls, have been mapped out based on the assumption of potential tsunami that hit the area once every few decades or 100-plus years. However, many local residents have requested to lower the height of seawalls proposed by the government. Because of this, the walls' height was reduced at 152 locations while the proposed sites of 42 seawall projects were moved elsewhere.

A senior land ministry official told the Mainichi Shimbun that the six prefectural governments said that the remaining seawall construction should begin within this fiscal year and all construction will be completed by fiscal 2018.

September 3, 2015

## Oceans can't complain

### TEPCO begins pumping up groundwater before dumping in ocean

<http://mainichi.jp/english/english/newsselect/news/20150903p2g00m0in042000c.html>

TOKYO (Kyodo) -- The operator of the crippled Fukushima Daiichi nuclear power plant on Thursday began pumping up groundwater from wells around the reactor buildings as part of its plan to dump it into the ocean after treatment.

The plan is aimed at curbing the amount of toxic water buildup at the complex. Tokyo Electric Power Co. says radiation levels in the groundwater are much lower than in the highly toxic water being pooled inside the reactor buildings, adding **it will discharge it only after confirming it does not contain radioactive materials exceeding the legally allowable limit.**

Even so, fishermen in Fukushima Prefecture had long opposed the plan amid concerns over pollution of the ocean and marine products. They approved it last week on condition that the government and TEPCO continue paying compensation to them for as long as the nuclear crisis continues to cause damage to their business, among other requirements.

**TEPCO now plans to dump some 4,000 tons of already-decontaminated groundwater, which was pumped up on a trial basis last year, in mid-September in the first such release.**

The amount of radioactive water at the plant is increasing every day, as some 300 tons per day of groundwater is seeping into the reactor buildings and mixing with highly radioactive water generated in the process of cooling the reactors that suffered meltdowns in the 2011 nuclear disaster.

With the latest plan to cope with toxic water buildup, TEPCO and the government expects the amount of groundwater flowing into the reactor buildings to be halved.

TEPCO has been struggling to resolve the problem of toxic water buildup for more than four years, with radiation leakages into the environment still occurring frequently.

The company is also behind schedule on a project to build a huge underground ice wall, another key measure to prevent radioactive water from further increasing at the site.

## **TEPCO pumps up groundwater for release into sea**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the Fukushima Daiichi nuclear plant has begun pumping up groundwater from around reactor buildings with the aim of releasing it into the sea.

Tokyo Electric Power Company, or TEPCO, hopes the move will slow the accumulation of radioactive wastewater in the buildings, which is building up at a rate of 300 tons a day due to the inflow of groundwater.

The utility will target groundwater from wells dug around the No.1 through No.4 reactor buildings. It plans to filter out much of the radioactive material before releasing the water into the ocean.

Workers on Thursday began pumping up groundwater from 20 wells. They plan to remove 200 tons through the afternoon and store it in special tanks.

TEPCO has yet to reach an agreement with local authorities and fishermen about when to release the decontaminated water, but it will likely be later this month.

The utility claims **the drainage will cut the amount of wastewater in the reactor buildings by about half.**

But local authorities and fishermen worry about what could happen to the environment if something goes wrong.

## **Fresh faults found with Monju management**

### **Errors found in safety management of Monju reactor**

[http://www3.nhk.or.jp/nhkworld/english/news/20150903\\_28.html](http://www3.nhk.or.jp/nhkworld/english/news/20150903_28.html)



Japan's nuclear regulators have found fresh faults with the safety management of the country's fast-breeder reactor, which is currently offline.

They say they have found thousands of errors in safety classifications of the equipment and devices at the Monju reactor.

The operator of the prototype reactor in Fukui Prefecture, central Japan, has been banned from conducting test runs since 2013 following discoveries of a large number of safety inspection oversights.

The Nuclear Regulation Authority says it has recently found at least 3,000 mistakes with safety classifications of equipment and devices at the reactor during its regular inspections which are conducted 4 times a year.

Its officials say, equipment and devices with high importance were, in some cases, classified in lower ranks in the 3-level system, which suggest the operator might have failed to carry out necessary inspections for them.

The errors found recently include those going as far back as 2007. The fact suggests that government inspectors have also overlooked the operator's mistakes.

The operator, Japan Atomic Energy Agency, built the Monju fast-breeder reactor in the early 1990s to reuse the spent nuclear fuel MOX, a mixture of plutonium extracted from spent fuel and uranium.

But it has been offline for most of the period after it underwent a fire from a leak of sodium, the reactor's coolant, in 1995.

The operator aims to conduct the reactor's test run by next March. But it is uncertain when the ban by the authority will be lifted.

The plant's director, Kazumi Aoto, says he will take the government's report seriously.

An NRA inspector, Yutaka Miyawaki, says the regulators will try to identify the actual effects of the errors.

## Cooling restarted in No.3 pool

### TEPCO resumes cooling in No.3 spent fuel pool

[http://www3.nhk.or.jp/nhkworld/english/news/20150903\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20150903_29.html)

The operator of the Fukushima Daiichi nuclear power plant has restarted the cooling system for a spent fuel pool at the No.3 reactor, after a **temporary suspension due to a leak of oil from heavy machinery.**

Tokyo Electric Power Company said it switched off the water circulation system **for about 4 hours** on Thursday to remove oil that had leaked into the pool. The pool is located on the top floor of the No.3 reactor building.

The pool stores **566 spent nuclear fuel assemblies**.

TEPCO officials said the system was switched back on shortly after noon, and that the water temperature taken an hour later was 26.1 degrees Celsius, showing that it had not risen much from what it was before the switch-off.

The utility says the leaked oil remained within the oil fence of the fuel pool and there were no effects on other equipment.

The oil leak occurred at around 8AM during work to remove debris scattered in the spent fuel pool. A pressurized oil hose on heavy machinery used for cutting up the debris hit a component in the pool, causing the oil leak. It stopped when the machinery was turned off.

September 5, 2015

## 700,000 tons of radioactive water



Reporters observe the dismantling of bolted flange-type tanks to store radiation-contaminated water at the Fukushima No. 1 nuclear power plant during a media tour Sept. 4. (Pool)

## Nearly 700,000 tons of radioactive water stored at Fukushima plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201509050017>

By HIROMI KUMAI/ Staff Writer

OKUMA, Fukushima Prefecture--Almost 700,000 tons of radiation-contaminated water have accumulated at the crippled Fukushima No. 1 nuclear power plant, Tokyo Electric Power Co. disclosed Sept. 4.

The water is stored in rows of massive tanks on the plant's premises.

Contaminated water has been a persistent problem since the 2011 earthquake and tsunami disaster triggered a triple meltdown at the plant, resulting in a vast amount of radiation being spewed from the facility.

Each day, about 300 tons of groundwater still seeps into the basements of the reactor buildings, where it mixes with melted nuclear fuel and becomes highly contaminated, the utility officials said.

The storage tanks TEPCO has constructed to store the water are 10 meters tall and positioned on the inland, and not seaward, side of the reactor buildings.

The plant operator said it had lowered the radiation level of a large portion of the contaminated water using a multinuclide removal apparatus called ALPS (advanced liquid processing system) and other equipment.

The utility completed processing the most highly contaminated water stored in tanks by the end of May. TEPCO has also worked to replace flange-type bolted storage tanks that are susceptible to leakage with welded tanks to reduce the risk of accidental seepage.

To intercept clean groundwater before it flows into contaminated reactor buildings, TEPCO started a "subdrain plan" Sept. 3 to pump tons of groundwater from "subdrain wells" before it reaches the contaminated reactor buildings each day. The water will be released into the sea after undergoing decontamination treatment.

September 7, 2015

## Every leak of radioactive water makes it worse

### **EDITORIAL: Each Fukushima water leak weakens faith in Japan's food safety**

<http://ajw.asahi.com/article/views/editorial/AJ201509070016>

Japan's dispute with South Korea over its import restrictions on Japanese seafood imposed after the 2011 Fukushima nuclear disaster is now going to the World Trade Organization.

Following the accident at the Fukushima No. 1 nuclear power plant, South Korea banned imports of some marine products caught in waters off Fukushima and seven other prefectures, mainly areas along the Pacific coast between Aomori and Chiba prefectures. Then in autumn 2013, Seoul expanded the scope of the ban to include all marine products from these prefectures.

The Japanese government responded to the move by criticizing the measure for "lacking a scientific basis." Tokyo has been demanding that the measure be withdrawn while cooperating with Seoul's investigations. But the two countries have failed to resolve their disagreements, and Japan has asked the WTO to set up a dispute-settlement panel comprising experts from third countries to rule over South Korea's import ban.

More than a dozen countries and areas have barred imports of all or part of Japanese-made foods, but the government has singled out South Korea because the country has expanded its restrictions. The WTO tends to be regarded as dysfunctional because of the lack of progress in the global trade-liberalizing talks under its auspices. But the world trade watchdog has at least been performing its dispute-settling functions.

Japan has been making active use of the WTO's ability to settle trade disputes.

Over the past several years, Tokyo has filed complaints with the WTO over China's restrictions on exports of rare earth minerals and Ukraine's emergency restrictions on automobile imports, for instance. These actions have produced certain positive results for Japan.

Japan's diplomatic relations with South Korea remain strained over some long-standing territorial and history-related rows. But both countries should not allow these problems to affect the ways they deal with economic issues like trade disputes.

Tokyo and Seoul need to continue talks to seek an early solution to the dispute even while the WTO's panel is hearing the case.

**Four-and-a-half years after the accident, coastal areas of Fukushima Prefecture, where the disaster-stricken nuclear power plant is located, are still subject to restrictions on shipments of certain kinds of fish. Even for the fishes not covered, fishermen in these areas are allowed to catch and sell them only on a "trial basis."**

A system has been established to ensure that farm, forestry and fishery products made in areas directly affected by the disaster as well as surrounding regions are shipped only after they have passed the safety standards in radiation tests. But consumers have shown a tendency to avoid all food products from these areas.

**In cases of fishery products, only small-scale fishing operations and limited sales of products have been conducted to gauge the reactions from consumers.**

The South Korean government says it has expanded the import curbs in response to leaks of radiation-contaminated water from the Fukushima plant.

With the South Korean public deeply worried about food contaminated with radioactive materials, the step was aimed at preventing confusion among consumers in the country, according to Seoul.

The scope of the import restrictions and the means involved may be open to dispute. It should be noted, however, that **in both South Korea and Japan, food safety from a scientific viewpoint doesn't necessarily reassure consumers.**

The Fukushima No. 1 nuclear plant has been plagued by leaks of polluted water. Local fishermen have lodged protests every time such an incident occurs.

**It must not be forgotten that every leak of contaminated water makes consumers even more unwilling to put their faith in the safety of products from the areas.**

The only way to restore the public's trust in the safety of food is to ensure there will be no more leaks of contaminated water nor any exacerbation of the nuclear accident. The food trade dispute with South Korea should serve as a reminder of the absolute need to achieve these most basic nuclear safety goals.

## Nuclear terrorism

## **Amano Calls For Urgent Action On Protection Of Nuclear Facilities**

<http://www.nucnet.org/all-the-news/2015/09/07/amano-calls-for-urgent-action-on-protection-of-nuclear-facilities>

Countries must take the threat of nuclear terrorism seriously by ensuring that amendments to the Convention on the Physical Protection of Nuclear Material (CPPNM) that oblige countries to protect nuclear facilities such as nuclear stations enter into force as soon as possible, International Atomic Energy Agency director-general Yukiya Amano has said.

Writing on the Project Syndicate website, Mr Amano said amendments to the 1987 CPPNM that would make it harder for terrorists to obtain nuclear material have yet to enter into force. The resulting vulnerability “needs to be addressed urgently”, he said.

In July 2005, signatories to the CPPNM agreed to amend it to address the risk of terrorism more effectively. The new measures would make it more difficult for terrorists to cause a widespread release of radioactive material by attacking a nuclear power station or detonating a radioactive dispersal device – commonly known as a dirty bomb.

But before the amendment can enter into force, two-thirds of the 152 signatories to the original CPPNM must ratify it. While significant progress has been made – in July, the US, Italy, and Turkey did so – at least 14 more countries are needed.

The original Convention focused only on the international transport of nuclear material, and did not cover the protection of nuclear facilities.

The amendment adopted 10 years ago would oblige countries to protect nuclear facilities and any nuclear material used, stored, or transported domestically. It would expand cooperation on locating and recovering stolen or smuggled nuclear material and coordinate the response to any attack on a nuclear facility. It would also make nuclear trafficking a criminal offence and require signatories to cooperate on improving national systems of physical protection and minimising the consequences of sabotage.

Mr Amano said the fact that there has never been a major terrorist attack involving nuclear or other radioactive material “should not blind us to the severity of the threat”. He said: “There is evidence that terrorist groups have tried to acquire the material needed to construct a crude nuclear explosive device, or a dirty bomb.”

The amount of nuclear material in the world is increasing, he said. Since 1999, the amount of such material being used for peaceful purposes has increased by 70 percent – a trend that will continue as the use of nuclear power grows. “It is essential that effective measures are in place to ensure that these materials are not misused or misplaced, whether accidentally or intentionally.”

Since 1995, the IAEA’s member states have reported nearly 2,800 incidents involving radioactive material escaping regulatory control, Mr Amano said. Although only a handful of these incidents involved material that could be used to make a nuclear explosive device, a relatively small amount of radioactive material could be combined with conventional explosives to create a dirty bomb. Such a weapon could be capable of killing many people, contaminating large urban areas, and sparking mass panic.

Mr Amano said much has been achieved in the secure management of nuclear material since the attacks on the US in September 2001 prompted a renewed focus on the risks of terrorism. Many countries have instituted effective measures to prevent the theft, sabotage, or illegal transfer of nuclear or other radioactive material, and security at many nuclear facilities has been improved. "But much more needs to be done," he said.

The article is online: <http://bit.ly/1UwwFvV>

Background:

The Convention on the Physical Protection of Nuclear Material was signed in Vienna and New York on 3 March 1980 and is the only international legally binding undertaking in the area of physical protection of nuclear material. It establishes measures related to the prevention, detection and punishment of offences relating to nuclear material.

A conference was held in July 2005 to amend the Convention and strengthen its provisions. The amended Convention makes it legally binding for signatories to protect nuclear facilities and material in peaceful domestic use, storage as well as transport. It also provides for expanded cooperation between and among states on measures to locate and recover stolen or smuggled nuclear material, mitigate any radiological consequences of sabotage, and prevent and combat related offences.

For more information: [www.iaea.org/newscenter/focus/nuclearsecurity](http://www.iaea.org/newscenter/focus/nuclearsecurity)

## **Nuclear terrorism a threat without global security co-operation**

<http://www.theaustralian.com.au/news/world/nuclear-terrorism-a-threat-without-global-security-co-operation/story-e6frg6ux-1227515263591?sv=b3e6e367e8c80aff4040193025e3a554>

**Nuclear terrorism is, in the words of US President Barack Obama, "the gravest danger we face". But while few would dispute this characterisation, the world has unfinished business in minimising the threat. Ten years after world leaders agreed to amend the landmark 1987 Convention on the Physical Protection of Nuclear Material to make it harder for terrorists to obtain nuclear material, the new measures have yet to enter into force. The resulting vulnerability needs to be -addressed urgently.**

- In July 2005, signatories to the CPPNM agreed to amend the convention to address the risk of terrorism more effectively. The new measures that were introduced would make it more difficult for terrorists to cause a widespread release of radioactive material by attacking a nuclear power plant or detonating a radioactive dispersal device — commonly known as a dirty bomb.
- Before the amendment can enter into force, two-thirds of the 152 signatories to the original convention must ratify it. While significant progress has been made — in July, the US, Italy, and Turkey did so — at least 14 more countries are needed.

- The fact that there has never been a major terrorist attack involving nuclear or other radio-active material should not blind us to the severity of the threat. There is evidence that terrorist groups have tried to acquire material to construct a crude nuclear explosive device, or a dirty bomb.
- In 2011, Moldovan police seized highly enriched uranium from smugglers who were trying to sell it. The smugglers, exhibiting a worrying level of technical knowledge, had tried to evade detection by building a shielded container. Thanks to efforts by Moldova, with the assistance of the International Atomic Energy Agency, to boost its nuclear security capabilities, the material was identified and confiscated, and the smugglers were arrested.
- The amount of nuclear material in the world is increasing. Since 1999, the amount of such material being used for peaceful purposes has risen by 70 per cent — a trend that will continue as the use of nuclear power grows. It is essential that effective measures are in place to ensure these materials are not misused or misplaced — accidentally or intentionally.
- Since 1995, the IAEA's member states have reported nearly 2800 incidents involving radioactive material escaping regulatory control. Although only a handful of these incidents involved material that could be used to make a nuclear explosive device, a relatively small amount of radioactive material could be combined with conventional explosives to create a dirty bomb. Such a weapon could be capable of killing many people, contaminating large areas, and sparking mass panic.
- The original convention focused only on the international transport of nuclear material, and did not cover the protection of nuclear facilities. The amendment adopted 10 years ago would oblige countries to protect nuclear facilities and any nuclear material used, stored, or transported domestically. It would expand co-operation on locating and recovering stolen or smuggled nuclear material and co-ordinate the response to any attack on a nuclear facility. It would make nuclear trafficking a criminal offence and require signatories to co-operate on national systems of physical protection and minimising the consequences of sabotage.
- Protecting nuclear material is not just an issue for countries that use nuclear power. Terrorists and criminals will try to exploit any vulnerability in the global security system. Any country could find itself used as a transit point — just as any country could become the target of an attack.
- Effective international co-operation is crucial. The consequences of a security failure could be a catastrophe that transcends borders. All countries must take the threat of nuclear terrorism seriously. The most effective way to do so would be to ensure that the amendment to the CPPNM enters into force as soon as possible.

*Yukiya Amano is director-general of the International Atomic Energy Agency.*

September 8, 2015

## Nuclear safety round the world

### IAEA chief: Fukushima a lesson for others

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>



The head of the International Atomic Energy Agency says he hopes its report on the Fukushima Daiichi accident will provide lessons on improving nuclear safety around the world.

IAEA Director General Yukiya Amano was speaking at a meeting of the board of governors on Monday in Vienna.

Amano cited the agency's final report released on August 31st, which looked into the causes and impact of the accident.

He described the report as a "major undertaking" with contributions from experts from many countries and international organizations. He said it was drawn up to serve as a solid knowledge base for the future.

He later told reporters he hopes that every country will make full use of the report in their efforts to improve nuclear safety.

The report says Japan was not sufficiently prepared for a severe nuclear accident due to an assumption that nuclear plants were safe.

The ambassador for the Permanent Mission of Japan to the International Organizations in Vienna, Mitsuru Kitano, told the meeting Japan is taking the criticism to heart.

Kitano said that based on lessons from the accident, Japan has introduced various measures and wants to contribute to improving nuclear safety around the world.

## Shortsightedness

### **INSIGHT: Failing to see dangers of nuclear power right under one's nose**

<http://ajw.asahi.com/article/views/column/AJ201509080001>

By EMIKO INAGAKI/ Senior Staff Writer

Fifty-three months after the fateful nuclear disaster, the Sendai nuclear power plant in Kagoshima Prefecture has become the first in Japan to resume after all were taken offline for safety inspections. But the restart callously disregards the lives of so many people who were uprooted from their irreplaceable ancestral land, jobs, families and friends by the accident at the Fukushima No. 1 nuclear power plant in 2011.

Inspections of nuclear facilities certainly became more stringent after the Fukushima nuclear disaster. But that is no guarantee of their safety. An "unforeseeable" event may occur at any moment, and the cost will be too tragically enormous for anyone to grasp.

Why does the government not want to face up to that fact in earnest? And what about the public, which is allowing the government to move in that direction? While I was furious about these issues, I had the chance to attend a preview of a movie. Seeing it was like getting smacked up the side of the head.

Titled "Tenku no Hachi" (The Big Bee), the action epic, which features an act of terrorism on a nuclear plant, is based on a work of fiction by Keigo Higashino, a best-selling author.



To my surprise, the work both fully and scrupulously presented all the major problems of nuclear power generation that came under the public spotlight after the Fukushima disaster, such as the vulnerability of spent nuclear fuel storage pools, the fictional nature of the safety myth about nuclear power and the merciless way nuclear plants are being forced on depopulated communities in exchange for subsidies.

The original book was written 20 years ago.

Higashino has commented on the work as follows: After his initial plan for it, he spent five years conducting a lot of research on the issue. He was filled with confidence when he finished writing the novel, but received no reaction at all. He thought that, obviously, his work was being ignored on purpose.

If somebody was purposefully “ignoring” the work, who was it?

### **I WAS PART OF 'NUCLEAR VILLAGE'**

I encountered the issue of nuclear power generation for the first time 27 years ago, when I was a reporter based in The Asahi Shimbun's Takamatsu bureau in Kagawa Prefecture.

An “output modulation test” was staged at Shikoku Electric Power Co.'s Ikata nuclear power plant in Ehime Prefecture.

A nuclear reactor continues to generate electric power at constant levels day and night, so there is a nighttime surplus of electricity. The test was conducted to raise and lower output levels to enhance efficiency.

Opponents of nuclear power generation reacted angrily to what they argued was a “dangerous” experiment. Thousands of people arrived from all parts of Japan to stage a boisterous protest outside Shikoku Electric's head office in Takamatsu on the day of the test.

A senior colleague of mine, who had been engaged in a student movement, appeared excited, as he said he was seeing a protest for the first time in a long while. However, local residents gave a chilly reception to the abrupt emergence of the hippie-like band of protesters, which was an uncommon sight.

“What are we supposed to do when all these outsiders suddenly show up and tell us this and that?” went the typical refrain.

I was, frankly, also fed up with the protesters.

The general thinking at the time was: “Japan has great technology. Speaking of possible accidents won't get you anywhere. After all, modern life is impossible without nuclear power.”

The anti-nuclear agenda was an unrealistic argument being made by only a few, and was less than catchy as far as news reporting was concerned.

No sooner did I write a halfhearted article about the protest than I returned to covering the police beat--making morning and evening calls to the homes of police detectives in a desperate bid to learn about hidden cases they were pursuing.

That was the way to scoop the competition and enhance my standing at the newspaper. I never attempted, then or afterward, to look into the dilemma of nuclear power generation, although I would have had access to, if only I had sought, a trove of public documents and other materials.

I didn't even know how many nuclear reactors Japan had, and in which parts of the country, when I was confronted by the Fukushima disaster.

If our eyes are clouded and we are only eager to read the situation and act smartly, we don't see anything even if something important is hanging right under our noses or if hints are tossed out in our direction.

We use the phrase “nuclear village” to refer to a community of people who rely on benefits generated by the nuclear power industry, which actually represents a major national project. It is exactly those people that created the safety myth and ended up causing the latest disaster. Higashino may have had the nuclear village in mind as the culprit for ignoring the presence of his book.

After all, I was also possibly a member of the nuclear village. I relied on the safety myth as an excuse for looking away from the sorrow and dilemma of those whom nuclear plants were being forced upon, taking the convenient availability of electric power for granted and continuing to scoff at a deluge of alarms. I was part of the group of people who ignored Higashino's work, which he had produced with all his might and competence.

### **LOOKING AT WHAT I SHOULD LOOK AT**

One phrase has long stuck in my mind.

I visited a community last year that lies about a 10-kilometer radius from the disaster site. Its deserted landscapes that were frozen in time and were silently tumbling away appeared so eerie that a lump formed in my throat as I realized the exorbitant price of an affluent life.

I blurted out to a local resident who was guiding me around, "Can you forgive Japan for moving to restart its nuclear reactors, oblivious of a disaster of this magnitude?"

The resident remained silent for a while and then muttered, "If nobody changes, nothing will probably ever change."

Will I be able to change? Will I be able to keep myself separate from the popular sentiment of the time, refuse to conform to the general trend, look at what I should look at and say what I should say?

## **Water to be released into sea**

### **Groundwater to be released into the sea on Monday**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the Fukushima Daiichi nuclear plant plans to start releasing groundwater from around reactor buildings into the sea next Monday.

The government and the operator, Tokyo Electric Power Company, are to formally decide on the discharge date on Wednesday. The water has already been decontaminated.

Officials hope the move will help to curb the accumulation of radioactive wastewater in the reactor buildings. The contaminated water is increasing at a rate of 300 tons a day as the groundwater flows in.

The officials plan to first release some 4,000 tons of water pumped up from the wells around the buildings on a trial basis since August last year.

They say they will continue to pump up water and release it after removing radioactive materials.

Later this week, the utility also plans to resume the construction of steel walls along the coast to stop the groundwater seeping directly into the sea.

The construction work has been suspended until the release of the groundwater becomes possible.

September 9, 2015

## Contaminated rainwater leaks into sea

### **Typhoon causes injuries, cancelled trains and flights, radioactive water leak**

<http://mainichi.jp/english/english/newsselect/news/20150909p2a00m0na014000c.html>

Typhoon Etau, this year's 18th typhoon, was situated near Nagoya, Aichi Prefecture, and heading north-northwest at 25 kilometers per hour as of 11 a.m. on Sept. 9. The typhoon's central pressure was 994 hectopascals, and wind speed was up to 20 meters per second. Maximum instantaneous wind velocity was 30 meters per second.

According to information compiled by the Mainichi Shimbun, eight people in Shizuoka and Aichi prefectures sustained minor to serious injuries. In the Shizuoka Prefecture city of Hamamatsu, 389 millimeters of rain fell in a 72-hour period, setting a record. In the 24-hour period ending at 6 a.m. on Sept. 10, maximum rainfall is expected to be 300 millimeters in the Kanto-Koshin region, 250 millimeters in the Tokai region, and 200 millimeters in the Tohoku region.

Train services were suspended between Odawara and Atami stations on the JR Tokaido Line. Meanwhile, a total of 54 domestic and international flights arriving at or departing from Chubu Centrair International Airport were cancelled.

The Mainichi found that between Sept. 8 and 9, evacuation orders were issued to 87,760 people in Shizuoka and Mie prefectures, and evacuation advisories were issued to a maximum of 250,000 people in five prefectures in the Kanto and Tokai regions, including Tokyo.

In Hamamatsu, where approximately 70,000 people were ordered to evacuate on Sept. 8, evacuation advisories were still in place for some 30,000 people in the Kami and Shinzu districts of the city's Minami Ward as of 10:30 a.m. on Sept. 9.

Tokyo Electric Power Co. (TEPCO), operator of the troubled Fukushima No. 1 Nuclear Power Plant, announced on Sept. 9 that rainwater contaminated with radioactive materials had leaked from the plant's drainage system into the ocean. The heavy rains brought on by Typhoon Etau exceeded the capacity of a transfer pump set up to move the water from one drainage canal to another, TEPCO officials said.

**This is the seventh time of possible or confirmed leaks of radiation-contaminated water since the utility began transferring the water from canal to canal in April of this year.**

TEPCO says it does not know how much contaminated water leaked into the ocean, and is currently analyzing the concentration of the radioactive matter in the leaked water.

September 11, 2015

## Radioactive rainwater flows into sea

## **Rainwater overflows from Fukushima plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20150911\\_22.html](http://www3.nhk.or.jp/nhkworld/english/news/20150911_22.html)

The operator of the crippled Fukushima Daiichi nuclear power plant has found that rainwater has intermittently overflowed a drainage channel and spilled directly into the sea.

This happened after the area was hit by the recent heavy rains.

Tokyo Electric Power Company said on Friday that it confirmed the leaks through video footage of the complex. The operator said the leaks occurred at 3 AM, 5:20 AM and 6 AM on Friday -- for a total of more than 2 and a half hours.

TEPCO is now checking the radioactive levels of rainwater samples taken from the channel.

Radioactive rainwater was first found spilling into the sea from the channel in February.

As a stopgap measure, TEPCO built a barrier at the channel's far end to pump up water before it reached the sea.

The channel repeatedly floods during heavy rains.

Work to reroute the drainage channel so that the rainwater does not leak outside the plant's port, which began in May, has yet to be completed.

## **Contaminated material washed into river**

### **Recovering radiation contaminated bags**

[http://www3.nhk.or.jp/nhkworld/english/news/20150911\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20150911_37.html)

Floods have washed bags of material contaminated by radiation into river in a village in Fukushima prefecture. Some of them have reportedly been recovered, but others are still missing.

Environment ministry officials say they received a report on Friday morning that floods from heavy rain carried the plastic bags into the Niida River. They were being stored on farmland in Iitate village near the Crippled Fukushima Daiichi nuclear plant.

The bags contained grass and other materials tainted with radioactive substances from the 2011 nuclear accident. They were being kept outdoors near the river before being transferred to storage sites.

**The officials say 82 bags have been washed into the Niida and nearby Hiso rivers. Workers involved in decontamination efforts reportedly recovered 37 of them as of 6 PM Friday.**

The officials say they will continue searching for the remaining bags and check whether any other bags have been washed away.

## **Radiation contaminated bags recovered from floods**

[http://www3.nhk.or.jp/nhkworld/english/news/20150911\\_31.html](http://www3.nhk.or.jp/nhkworld/english/news/20150911_31.html)

In Fukushima prefecture, bags of material contaminated by radiation have reportedly been recovered after floods washed them into a river.

Environment ministry officials say they received a report on Friday morning that floods from heavy rain had carried the plastic bags into the Niida River. They were being stored on farmland in Iitate village near the crippled Fukushima Daiichi nuclear plant.

The bags contained grass and other materials tainted with radioactive substances from the 2011 nuclear accident. They were being kept outdoors near the river before being transferred to storage sites.

The officials say workers involved in decontamination efforts have recovered 30 bags, or a total of 30 cubic meters, that were swept into the river.

The officials say they will continue searching for other bags that may have been washed away by currents or scattered on nearby land.

September 12, 2015

## **Ancient tsunami traces up to 15 m above sea level**

### **Trace of higher-than-estimated tsunami found near nuclear plant**

<http://mainichi.jp/english/english/newsselect/news/20150912p2g00m0dm026000c.html>

TOKYO (Kyodo) -- A Tohoku University research team said Friday it has found what are believed to be **traces of tsunamis that occurred up to 2,000 years ago near Tohoku Electric Power Co.'s nuclear plant in northeastern Japan.**

Two traces have been found around 10 to 15 meters above sea level beneath a sand hill located about 10 kilometers north of the Higashidori nuclear complex in Aomori Prefecture, the team said. **That suggests the area may have been hit by tsunamis possibly higher than the utility's estimate of 11.7 meters used for designing a new breakwater near the plant.**

Tohoku Electric, which seeks to reactivate the nuclear plant, is constructing a breakwater as high as 16 meters above sea level.

The latest findings may force the utility to review its estimate and safety measures against tsunami hazards at the Higashidori nuclear plant.

According to Daisuke Sugawara, assistant professor of geology at the university, the team found strata -- consisting of accumulating mud and sand brought by strong tides -- in the soil underneath a sand hill. One believed to have been formed 1,500 to 2,000 years ago was found at a height of around 10 meters above sea level, and another believed formed 500 to 800 years ago was found about 15 meters above sea level. The team said it is unclear whether the traces are related to huge past tsunamis that are already known, and it is difficult to make a direct comparison of their finding with Tohoku Electric's tsunami estimate that has been calculated based on different conditions.

The team needs to conduct further research on when the tsunamis occurred and how they affected the formation of the sand hill, said Sugawara.

The findings were announced at a meeting of the Geological Society of Japan held in Nagano Prefecture, central Japan.

Last March, a panel under the Nuclear Regulation Authority compiled a report saying at least two key geological faults running under the premises of the Higashidori plant may be active, clouding the prospect of the facility's restart.

## Timing evacuation orders

### **Editorial: Local authorities should reconsider timing of issuing safety evacuation orders**

<http://mainichi.jp/english/english/perspectives/news/20150912p2a00m0na020000c.html>

The record rainfall that hit eastern Japan inundated extensive areas of residential neighborhoods after floodwaters broke through embankments of the Kinugawa River in Joso, Ibaraki Prefecture, and the Shibui River in Miyagi Prefecture. In addition, many people went missing following the partial collapse of the Kinugawa River dike.

Numerous people tuned in to the live broadcasts of residents being rescued by helicopters in the desperate relief efforts that took place in disaster-hit areas, where people remain stranded in their houses and other locations.

Central and local governments, as well as other relevant authorities, are urged first and foremost to put all of their efforts into search and rescue operations for missing or stranded residents, as well as provide support for evacuees' livelihoods.

The collapse of the Kinugawa River's embankment raises serious concerns, considering that the first-class river is under the jurisdiction of the central government. In disaster prevention, it is essential to work toward improving infrastructure as well as strengthening measures for evacuation and other necessary actions.

The flooding came just after authorities had embarked on land purchases for planned construction work that was aimed at elevating the very embankments that broke in order to cope with "once-in-a-decade flooding." While it may be true that priorities were in place in terms of infrastructure improvements, officials should seriously examine whether any blind spots existed within their daily management of the embankments, as well as the safety checks thereof.

In 2013, the Japan Meteorological Agency introduced a system of "emergency warnings" for downpours and other serious weather situations that normally occur around once every several decades.

In Ibaraki Prefecture, an emergency heavy rain warning was issued at 7:45 a.m. on Sept. 10. Under the law, prefectural governments are obliged to transmit such warnings to municipal governments, which are then tasked with passing them on to local residents.

In some districts in Joso, however, evacuation orders were not issued until several hours after the weather agency's emergency warning announcement was made. Faced with this reality, we must question the extent to which residents were actually aware of the crisis at hand.

Authorities should interview affected residents to verify what problems lay behind the means of information dissemination and the timing of the evacuation warnings that were issued. The results of such conversations must then serve as the lessons learned from the recent flooding disaster.

The unexpectedly severe rainfall was brought on by the lengthy stagnation of the so-called "line-shaped precipitation band," which comprises huge masses of cumulonimbus clouds. This reminds us of a similar case whereby massive landslides claimed the lives of many residents in the city of Hiroshima last year.

It is said to be difficult to predict precisely when and where the line-shaped precipitation band will emerge. Experts point out that such climate cases will increase due to global warming, so it is all the more imperative to develop disaster response measures by assuming a worst-case scenario and then taking a proactive approach.

In the United States, some state governments have set out a rule to issue an evacuation advisory -- as well as suspend public transport systems -- a certain number of hours before a hurricane landfall. Such advance anti-disaster action plans are called timelines, and some local governments in Japan have undertaken similar initiatives at the urging of the Ministry of Land, Infrastructure, Transport and Tourism. If local governments make prior timeline arrangements regarding the measures that should be taken in the event that the meteorological agency issues an emergency warning, they would not have to worry about their evacuation orders ending up being in vain even if such orders turned out to have been unnecessary. Such arrangements should be considered by local governments across the country.

It is up to each individual whether or not they will be able to survive disasters when they occur. Citizens need to learn the risks present in their residential areas by looking at hazard maps, regularly joining in disaster drills, and preparing emergency supplies so that they can evacuate quickly in times of emergency. [Click here for Japanese article](#)

September 14, 2015

## Treated contaminated water dumped into sea

### TEPCO releases first batch of decontaminated Fukushima groundwater to sea

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201509140069>





Equipment to decontaminate radioactive groundwater collected from subdrains set up around the main buildings of the Fukushima No. 1 nuclear power plant in Okuma, Fukushima Prefecture, last October. (Asahi Shimbun file photo)

By HIROMI KUMAI/ Staff Writer

Tokyo Electric Power Co. was set to release **850 tons** of treated radioactive groundwater into the sea off the Fukushima No. 1 nuclear power plant by sundown on Sept. 14.

The discharge marks the first release under the utility's "subdrain plan," an additional measure conceived to help diminish the build-up of contaminated groundwater at the crippled facility.

TEPCO began discharging water **after a third-party panel confirmed that the radioactive content was below the standard set by the utility.**

The plan utilizes subdrains, which are essentially wells set up around the main buildings of the power plant to collect groundwater flowing into the complex. Once the groundwater has been pumped from those wells, it undergoes decontamination in a special facility for release into the ocean after being checked for radioactive content.

The Fukushima Prefectural Federation of Fisheries Cooperative Associations gave the green light to the operation on Aug. 11, and TEPCO began pumping in earnest on Sept. 3.

The release of the first batch of decontaminated groundwater, which had been stored in a tank since last year, started around 10 a.m. The water collected from Sept. 3 will be released in a few days.

**TEPCO's standard is set at 1 becquerel of radioactive cesium per liter of decontaminated groundwater, 3 becquerels for elements that emit beta rays and 1,500 becquerels for tritium--a substance which is very hard to treat.**

**As for now, the utility plans to pump 100 to 200 tons of groundwater daily, but will increase the volume to 500 tons if it does not encounter any problems with the decontamination facilities.**



TEPCO believes the subdrains can halve the approximately 300 tons of daily groundwater buildup at the plant. However, the utility is uncertain how many months it will take to see whether this holds true.

## **Tepco dumps treated groundwater in Pacific to ease toxic water buildup at Fukushima No. 1**

<http://www.japantimes.co.jp/news/2015/09/14/national/tepcu-dumps-treated-groundwater-in-pacific-to-ease-toxic-water-buildup-at-fukushima-no-1/#.VfbnkZfwlLN>

Kyodo

FUKUSHIMA – Tepco on Monday discharged into the ocean filtered groundwater taken from wells around the damaged reactor buildings at the Fukushima No. 1 nuclear plant in an effort to curb the buildup of toxic water.

The project has been touted as one of Tokyo Electric Power Co.'s key measures in tackling the contaminated water problem.

Some 300 tons of untainted groundwater seeps into the buildings each day, where it mixes with water made radioactive by keeping the damaged reactors cool.

By pumping up groundwater through 41 wells and discharging it into the sea after treatment, the government and Tokyo Electric Power Co. hope to halve the amount flowing into the reactor buildings. On Monday, Tepco released some 850 tons of filtered groundwater — part of some 4,000 tons pumped up last year on a trial basis and stored in tanks — after confirming that radiation levels were below measurable limits.

**Tritium, which cannot be removed with existing technology, measured 330 to 600 becquerels per liter,** well below the legally allowable limit of 1,500 becquerels, the utility said, citing analyses conducted by the company and an outside organization.

Fishermen in Fukushima Prefecture had long opposed releasing the water over concerns it would pollute the ocean and contaminate marine life, but signed off on the plan in August.

In exchange, the fishermen demanded among other things that Tepco and the government continue paying compensation for as long as the nuclear plant damages their business.

Tepco is running behind schedule on a project to build a huge underground ice wall at the site, another key measure to prevent groundwater from reaching the reactor building basements.

## **TEPCO starts releasing treated underground water into ocean at Fukushima plant**

<http://mainichi.jp/english/english/newsselect/news/20150914p2a00m0na019000c.html>

Tokyo Electric Power Co. (TEPCO) has started releasing treated underground water pulled up from wells around reactor buildings at the disaster-stricken Fukushima No. 1 Nuclear Power Plant, the utility announced on Sept. 14.

TEPCO says the radiation levels of the water fall within standards set by it and the government. Around 850 metric tons of water -- from some 4,000 tons gathered from August through November last year -- is

planned to be released on the first day of the program. The radiation level standards for the released water are 1 becquerel or less of cesium radiation per liter, 3 becquerels or less of beta-emitting radiation from materials like strontium per liter, and 1,500 becquerels or less of tritium radiation, which cannot be removed in the treating process, per liter. These standards are stricter than the World Health Organization's standards for drinking water.

At the Fukushima plant, the amount of contaminated water increases by around 300 tons every day due to the inflow of underground water, but with the start of the water release program, this amount can be halved, estimates TEPCO. The program will give TEPCO more control over underground water levels, and on Sept. 10 it resumed construction on a water-blocking wall on the ocean-side of the No. 1 through No. 4 reactor buildings, which had been halted.

TEPCO had been pulling up and releasing underground water into the ocean at the plant since before the 2011 meltdowns, but the pumps for this operation were broken in the tsunami that followed the Great East Japan Earthquake, and the radiation levels of underground water were raised by the hydrogen explosions and other radiation releases of the disaster, all of which prevented TEPCO from resuming the pumps until now.

## **Groundwater release starts at Fukushima Daiichi**

[http://www3.nhk.or.jp/nhkworld/english/news/20150914\\_22.html](http://www3.nhk.or.jp/nhkworld/english/news/20150914_22.html)

The operator of the crippled Fukushima Daiichi nuclear plant has started releasing groundwater into the sea pumped up from around reactor buildings. The water is decontaminated and monitored before releasing.

The government and Tokyo Electric Power Company say the release is aimed at reducing the daily production of radioactive wastewater by half. The work began at around 10 AM on Monday.

300 tons of contaminated water has been produced daily in the damaged reactor buildings due to flow-in of groundwater.

By evening the operator plans to release some 850 tons of groundwater. This is from the 4,000 tons it has already pumped up from wells around reactor buildings since August last year. The groundwater has been cleaned to permissible radioactive levels.

Workers will continue to release the stored water for 3 more days this time.

Municipalities and local fishermen worry about possible effects on the environment if something goes wrong. The government and the Tokyo Electric Power say they will conduct strict monitoring of the discharge.

## **How much is acceptable?**

## End the nuclear ‘safety myth’

<http://www.japantimes.co.jp/opinion/2015/09/14/editorials/end-nuclear-safety-myth/#.VfbqXpfwlLN>

The International Atomic Energy Agency’s final report on the March 2011 triple meltdowns at Tokyo Electric Power Co.’s Fukushima No. 1 nuclear power plant puts the main blame on the then prevailing assumption that Japan’s “nuclear power plants were so safe that an accident of this magnitude was simply unthinkable.” Constant monitoring is needed to make sure the government, power companies and nuclear regulatory authorities aren’t falling into the same “safety myth” as they push to reactivate idled reactors that meet what is now touted as the “world’s most stringent” nuclear safety standards.

Last week, Kyushu Electric Power Co. began commercial operation of the No. 1 reactor of its Sendai nuclear power plant in Satumasendai, Kagoshima Prefecture — a little over a month after it became the first reactor idled since 2011 to be reactivated on the basis of the safety standards that were tightened in response to the Fukushima disaster. The utility plans to restart the plant’s No. 2 reactor as early as next month, and the Abe administration and the power industry are pushing to bring more idled plants back online once they have cleared the Nuclear Regulation Authority’s screening.

The regulatory system for nuclear power generation has been reformed since the 2011 crisis. The old Nuclear and Industrial Safety Agency, which came under fire for the Fukushima debacle, has been replaced by the NRA, and new regulations introduced in 2013 require operators of nuclear power plants to beef up their defense against natural disasters such as major earthquakes and tsunamis. **But while the NRA itself states that compliance with the new standards does not guarantee the plants’ safety, the government says the plants are ready for restart because they meet the NRA criteria. No one appears ready to take final responsibility for the plants’ safety.**

The IAEA report, compiled by around 180 experts from 42 countries and submitted to an annual general conference of the United Nations nuclear watchdog this week, highlights the “assumption” held by Japan’s nuclear plant operators prior to 2011 that a crisis of that magnitude would not happen, which was never challenged by the government or regulatory authorities, leaving the nation unprepared for a severe accident.

The Fukushima power plant lost its emergency power supply after it was flooded by a 15-meter tsunami triggered by the magnitude-9 quake on March 11, 2011. The loss of power crippled its crucial core-cooling functions and led to the meltdowns in its three operating reactors. Citing Tepco’s failure to take precautionary action against such external hazards despite an estimate prior to the disaster that a powerful quake off Fukushima could cause a tsunami of roughly the same scale that hit the plant site, the report said “there was not sufficient consideration of low probability, high consequence external events,” partly because “of the basic assumption in Japan, reinforced over many decades, that the robustness of the technical design of the nuclear plants would provide sufficient protection against postulated risks.” This assumption led to “a tendency for organizations and their staff not to challenge the level of safety” and “resulted in a situation where safety improvements were not introduced promptly.”

The report also pointed to the deficiencies in Japan’s nuclear regulatory system behind the Fukushima disaster. “The regulation of nuclear safety in Japan at the time of the accident was performed by a number of organizations with different roles and responsibilities and complex interrelationships. It was not fully clear which organizations had the responsibility and authority to issue binding instructions on how to respond to safety issues without delay,” it said. “The regulations, guidelines and procedures in place at the time of the accident were not fully in line with international practice in some key areas, most notably in relation to periodic safety reviews, re-evaluation of hazards, severe accident management and safety culture.”

IAEA Director General Yukiya Amano, in his foreword to the report, says Japan's regulatory system has since been reformed to meet international standards, with regulators given clearer responsibilities and greater authority. Whether the new plant safety standards are the world's most stringent or not, plants that meet the standards are supposed to withstand much greater levels of external hazards and be better able to respond to emergencies than before.

Still, complacency under the new standards would risk reviving the same safety myth rebuked in the report. Questioning whether the tightened standards are sufficient could be branded as demanding zero tolerance of risks and thereby unrealistic. However, as the IAEA report points out, it was an "unlikely combination of events" that hit the Tepco plant, and the utility's unpreparedness for such a situation that resulted in the 2011 disaster.

**We need to consider whether the tendency to dismiss low-probability risks as "small enough" — as was, for example, the risk of Kyushu Electric's Sendai plant being hit by a volcanic eruption when the go-ahead was given for its restart — is acceptable from the viewpoint of preventing severe accidents at nuclear plants in the future.**

## IAEA keen to share lessons of Fukushima

### IAEA discussing nuclear issues in Iran and Japan

[http://www3.nhk.or.jp/nhkworld/english/news/20150915\\_03.html](http://www3.nhk.or.jp/nhkworld/english/news/20150915_03.html)

Members of the International Atomic Energy Agency have begun discussing an international nuclear deal with Iran, among other issues.

The nuclear watchdog agency opened its 5-day annual General Conference in Vienna on Monday.

In his opening speech, Director General Yukiya Amano said the nuclear deal made between Iran and 6 world powers in July contributes to the IAEA's verification procedures.

US Energy Secretary Ernest Moniz praised the agreement for making clear that Iran would not possess nuclear weapons under any circumstances.

The head of Iran's atomic energy agency Ali Akbar Salehi called for an impartial and objective conclusion of the ongoing process by the IAEA and the 6 powers. He said unjust sanctions should be removed.

The IAEA has submitted to the conference its final report on the 2011 nuclear accident at the Fukushima Daiichi nuclear power plant. **The agency hopes to share lessons from Fukushima and improve the safety of nuclear plants.**

Chairman of Japan's Atomic Energy Commission Yoshiaki Oka briefed the conference about the restart of a nuclear power plant in August under new regulations introduced after the Fukushima accident. All nuclear plants in Japan had been off line for nearly 2 years.

September 15, 2015

## Nearly 400 bags of radioactive waste washed away



### 395 bags of tainted material washed away in floods

[http://www3.nhk.or.jp/nhkworld/english/news/20150915\\_24.html](http://www3.nhk.or.jp/nhkworld/english/news/20150915_24.html)

Japan's Environment Ministry says nearly 400 bags of weeds and other waste contaminated with radioactive materials were washed into a river during a torrential rain in Fukushima.

The plastic bags contained weeds, branches and soil from cleanup work in Iitate Village in the prefecture. The area was contaminated by fallout from the 2011 Fukushima Daiichi nuclear accident.

The bags were being stored on farmland near a river temporarily.

The ministry says that of the 395 bags that were washed away, 314 were recovered. But about half of them were torn, and their contents were empty.

Environment Minister Yoshio Mochizuki noted on Tuesday that the grass and branches in the bags had been collected recently and had relatively low radiation levels. He suggested that the possibility they will affect the environment is low.

He added that his ministry will work to recover the remaining bags and implement measures to prevent a recurrence.

## Volcano research essential

### Yoroku: Time to get serious about volcano research

<http://mainichi.jp/english/english/perspectives/news/20150915p2a00m0na008000c.html>

In 7th century statesman and historian Wei Zheng's work "Book of Sui," his account of China's Sui dynasty, he writes about the Japan of the time. His description includes the passage, "there is a mountain called Aso there, where the rocks can suddenly spew forth fire that touches the sky. The people fear these calamities, and pray and hold festivals so that the mountain may be calmed."

We don't know if Wei Zheng saw any of this with his own eyes or is merely reporting the observations of others, but if anyone from a land unused to volcanoes were to see Mount Aso erupt, it would surely leave a deep impression. The area is a popular spot with foreign tourists even today, and they got quite a show on Sept. 14 with what was apparently the mountain's largest eruption in 36 years.

The Japan Meteorological Agency (JMA)'s new volcano warning system, created after last year's deadly Mount Ontake eruption, went into operation just last month. The eruption notice for Mount Aso came seven minutes after the eruption was actually detected, though this lag was apparently due to the time needed for the agency to confirm whether the scale of the latest eruption was greater than the many small eruptions seen since last year. However, it must be asked if there is still not yet room for improvement. Luckily, no sight-seers were injured.

Mount Aso, with its string of small eruptions, was just the latest Kyushu peak to have its volcano warning level raised in this period of increased volcanic activity across Japan, following Mount Shindake on Kuchinoerabu Island, which violently erupted in May, and Sakurajima. The warning level for Sakurajima had just been lowered earlier this month, but the moment of relief was brief as the level for Mount Aso was ticked up a notch. The mountains seem disinclined to give us human beings a break.

Of course there is no relying on prayer to prevent disaster, and so the JMA has included a 50-percent funding increase for a new volcano observation and warning center and more volcano-related staff in its fiscal 2016 budget request. Meanwhile, the Ministry of Education, Culture, Sports, Science and Technology will soon start efforts to double the currently quite small number of volcanologists in Japan over the next five years to improve risk assessment.

Japan makes up just one-four-hundredth of the Earth's land area, but is said to have some 10 percent of our planet's active volcanoes. We have to make sure foreign visitors to these mountains are just as impressed with Japan's volcanology research and safety measures as they are by the peaks themselves. ("Yoroku," a front-page column in the Mainichi Shimbun)

## Drawing the lessons of disasters

## Learning from natural disasters

<http://www.japantimes.co.jp/opinion/2015/09/15/editorials/learning-natural-disasters/>

People listed as missing after last week's flooding of the Kinugawa River in Joso, Ibaraki Prefecture have been located alive. The next priority will be reconstructing the breached riverbank, pumping out water from the inundated areas, cleaning up the debris and restoring lifelines such as power and water supplies for local residents. Also important will be a review of the actions taken by the local administrators as well as residents to protect their lives — so that damage can be minimized in the event of similar disasters in the future.

In recent years, abnormal weather phenomena such as typhoons, torrential rainfall and twisters are happening in greater frequency and severity, which is often associated with the effects of global warming. We increasingly hear of severe weather described as “unprecedented” or the “heaviest in decades.” In most cases, both residents and officials of the municipalities in affected areas will have had no firsthand experience of a disaster of such magnitude.

Last week's flooding was caused by record-breaking torrential rains that hit the Kanto and Tohoku regions. The last time the Kinugawa River, which flows through northern Kanto, breached its embankments was reportedly in 1949. Many of the residents as well as officials in the city, which is some 50 km from downtown Tokyo, may not have imagined that the levee along the river would fail on Thursday, even though the Meteorological Agency had issued special alert for heavy rain and flooding for broad areas including the city the previous afternoon.

Nearly five hours before the levee ruptured, the agency also issued a special warning for people in Ibaraki Prefecture to “take immediate actions” to protect their lives. Such a warning was introduced in 2013 after authorities determined that local residents were not adequately informed of the danger of flooding when torrential rains hit the Kii Peninsula in 2011 and northern Kyushu the following year, each of which resulted in large numbers of casualties. When dozens of people in mountainside residential area of the city of Hiroshima were killed in mudslides caused by downpours in nighttime hours in August last year, it was pointed out that local officials hesitated too long before they issued an evacuation advisory for the residents.

It has surfaced that the Joso municipal government issued an evacuation order for residents in areas along the river closest to the section where the bank ruptured roughly two hours after the levee breached, even though a similar order had been made hours earlier for people in nearby areas. The city has admitted error and confusion on its part. Evacuation advisory and order by the local authorities would have prodded more residents to flee, and it needs to be closely examined why the order was issued so late. But it also needs to be reviewed whether the residents themselves had been adequately prepared for safe evacuations in cases of emergencies.

Natural disasters result in extensive damage when the events go beyond what people expect based on their own experience. To protect ourselves against unprecedented disasters, we need to guard against the worst-case scenario and act promptly. Municipal government authorities should also learn from past examples and take adequate action, such as issuing evacuation orders while it's still safe for the residents to evacuate — for example before the weather gets severe — not after the danger becomes imminent. How to safely evacuate elderly and disabled residents as well as small children in emergency situations must also be considered.

There will be limits to beefing up infrastructure to defend against natural disasters. Though necessary, there will be no end to efforts to make it robust enough to protect people in the event of disasters. Since the 2012 torrential rains in northern Kyushu, the Land, Infrastructure, Transport and Tourism Ministry



has surveyed the conditions of levees along rivers under national government control that stretch a total of 13,390 km across the country, and determined that 16 percent of the embankments — or a stretch of 2,159 km — was vulnerable and needed work to make them stronger.

However, the progress of the work remains slow and there is not timetable for when it will be completed, due partly to the cutbacks on public works spending in recent years. In fact, work to strengthen the embankments along the Kinugawa River was under way just downstream from the site of last week's disaster, with work at the site itself reportedly scheduled next. It will be difficult to eliminate the risk of flooding through infrastructure improvements.

The land ministry is urging more than 700 municipalities across Japan with the risk of flooding in their areas to devise a plan of action that should be taken by the local governments and residents to ensure a safe evacuation in advance of natural disasters, with specific timelines for what action needs to be taken by whom and when, by fiscal 2020. However, only about 200 municipalities have so far compiled such plans. In addition to speeding up the process, the municipalities need to constantly update their plans based on the lessons of others who have experienced disasters. Drills involving local residents will also be essential to see if the plans really work.

With the increasing severity of abnormal weather conditions, some disasters will be beyond the ability of a single municipality to handle. It is reportedly estimated that as many as 1.2 million people would be affected if the right bank of the Arakawa River in Tokyo's Kita Ward ruptured. The national and prefectural governments will need to take on greater roles in devising and executing plans for protection and evacuation of people in the event of major disasters.

September 18, 2015

## Bags of radioactive soil washed away (2)

### More than 300 bags from Fukushima cleanup washed away during Tochigi floods

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201509180069>

NIKKO, Tochigi Prefecture--At least 334 bags containing radioactive grass and soil from the Fukushima nuclear disaster cleanup have apparently been swept into a tributary of the Kinugawa river during recent torrential rains, according to Nikko city.

The city reported on Sept. 17 that 20 of the bags were recovered downstream but found to be empty, apparently having spilled their contents. The other 314 bags remain unaccounted for.

The sacks, each with a capacity of 1 cubic meter of waste, are filled with radioactive waste collected from the cleanup work following the accident at the Fukushima No. 1 nuclear power plant in March 2011.

Nikko Mayor Fumio Saito, however, said that the radiation level around the site where the bags are stored is still below the level at which decontamination work is required.

"The radiation level is so low that I believe there will not be a huge impact (on the surrounding environment)," he said.

A similar incident was reported earlier in Iitate, Fukushima Prefecture, where an estimated 395 black polyethylene bags containing tainted grass and other waste were confirmed Sept. 15 to have been swept from a decontamination work site into a river in torrential rain. At least 153 of the bags were found to be empty.



By 7 p.m. the same day, 393 bags were discovered and 202 of the 393 bags were retrieved. However, of 191 bags that have yet to be collected, the condition of 168 of the sacks remains unknown.

According to Nikko city, 558 bags holding radiation-tainted waste were stored at Kobyakugawa Sakura Koen park, which is situated alongside a tributary of the Kinugawa river.

The bags are protected by special sheets and mounds. However, at least 334 bags were apparently swept into the tributary after part of the embankment collapsed during the torrential rain. Some of the 132 bags of radioactive waste kept near the 558 bags also rolled down slopes in landslides that were triggered by the storms, the city said.

The radiation level around the storage site currently reads 0.14 microsieverts per hour at 1 meter above ground, below the threshold set by the central government of 0.23 microsieverts per hour that requires decontamination work.

## **Over 340 bags of radioactively contaminated waste from Fukushima disaster swept away**

<http://mainichi.jp/english/english/newsselect/news/20150918p2a00m0na001000c.html>

NIKKO, Tochigi -- A total of 341 bags containing waste contaminated with radioactive substances from decontamination work after the 2011 Fukushima nuclear disaster have been swept into local rivers by recent floods in eastern Japan, the Nikko Municipal Government announced Sept. 17.

Of the total, 334 bags out of 558 bags in the city's Kobyaku district have been swept away, along with at least another seven bags about 9 kilometers north of the district. Seventeen of them were recovered, but the waste inside the bags was gone, Nikko city officials said.

The 1-cubic-meter capacity bags had each contained soil and weeds generated by decontamination work at parks and along school routes from July 2013 through January 2014. The officials said storage locations were eroded by submerged rivers.

## **Ever optimistic IAEA**

### **Post-Fukushima Action Plan Has Delivered Concrete Results, Says IAEA**

<http://www.nucnet.org/all-the-news/2015/09/18/post-fukushima-action-plan-has-delivered-concrete-results-says-iaea>

The International Atomic Energy Agency's Action Plan on Nuclear Safety, drawn up following the 2011 accident at the Fukushima-Daiichi nuclear station in Japan, has delivered concrete results and nuclear facilities have already become safer because of it, the agency said.

In a final report on the implementation of the action plan the IAEA said the main purpose of the plan was to set a framework for the further strengthening of nuclear safety worldwide. The plan focused on 12 key areas including safety assessments, IAEA peer reviews, emergency preparedness and response, national regulatory bodies, and the international legal framework.

Since the adoption of the plan in 2011, the IAEA secretariat, member states and relevant stakeholders have undertaken a number of activities and have introduced concrete measures which have effectively strengthened nuclear safety worldwide, the IAEA said. It said the secretariat has initiated 68 projects with extra-budgetary funding across all 12 areas of the plan.

Results include better collaboration between member states and all stakeholders. The IAEA peer review mechanism has been strengthened and member states have been encouraged to regularly host peer reviews at their nuclear facilities.

The report is online: <http://bit.ly/1QL3Q9g>

September 19, 2015

## Just "hoping for inspired improvisation"

### Rearranging the deck chairs on the nuclear Titanic

<http://www.japantimes.co.jp/opinion/2015/09/19/commentary/rearranging-deck-chairs-nuclear-titanic/#.Vf6xP5fwmic>

by Jeff Kingston

The International Atomic Energy Agency's recently released postmortem on the Fukushima nuclear accident of 2011 makes for grim reading and serves as a timely reminder of why the restart of the Sendai nuclear plant in Kyushu is a bad idea.

When an atomic energy advocacy organization delivers multiple harsh assessments of Japan's woeful nuclear safety culture and inadequate emergency countermeasures and disaster management protocols, it's time to wonder how much has really changed in the past five years — and whether restarting any of the nation's nuclear reactors is a good idea.

In 2012, the government established a new nuclear safety watchdog agency called the Nuclear Regulation Authority (NRA) and it now contends that Japan has the strictest nuclear safety regulations in the world. But is that true? And does it matter?

David Lochbaum, co-author of last year's "Fukushima: The Story of a Nuclear Disaster," the best book on the meltdowns that I've read, likens recent reforms to "rearranging the deck chairs on the nuclear Titanic" He's not buying Japan's claim of having the world's strictest guidelines.

"I'd sooner buy the Brooklyn Bridge," Lochbaum says. "What would Japan have said about its safety guidelines on March 10, 2011? Would they have conceded that their safety guidelines ranked 23rd worldwide, but that level of protection was good enough for the people of Japan?"

“It’s all valueless posturing. No regulator in any country would publicly confess to anything less than the best on the planet.”

Had the NRA existed pre-Fukushima, Lochbaum thinks the disaster would have shown that structure to be inadequate.

“The NRA would have been splintered and its roles relegated to various governmental agencies,” he says.

At the time, however, responsibility and authority for nuclear safety was divided among various agencies, so the government moved to concentrate such powers under the NRA and calls that a solution.

“Disasters are bad and require changes,” Lochbaum says. “That the changes fail to address the underlying problems gets lost.”

However, Japan is not the only nation “rearranging the nuclear deck chairs” to conjure a simulacrum of enhanced safety, and Lochbaum points to an incident in 2008 in Pennsylvania as an example.

“When contract security officers were discovered sleeping on the job at the Peach Bottom nuclear plant, its owner fired the contractor and brought the security officers in-house,” he says. “It was essentially the same group of individuals wearing different emblems on their uniforms. But somehow the different emblems ‘fixed’ the problem and all was well with the world.”

A relevant story since **most of the NRA’s employees used to work at the discredited Nuclear and Industrial Safety Agency, which was blamed for poor oversight and safety lapses due to regulatory capture and servile deference to the utilities.**

**“It’s more convenient than truthful to blame Fukushima on regulatory capture,” Lochbaum says. “I am unaware of any reactor type operated by any company in any nation that would have survived the one-two punch that the earthquake and tsunami dealt that plant.” Yet, it is disconcerting to know that according to Lochbaum, “Fukushima’s design and operating procedures were not radically different than those deployed worldwide.”**

Both the IAEA report and Lochbaum emphasize the need for defense in depth, meaning multiple levels of safety infrastructure, equipment and redundancy to reduce the possibility of a nuclear accident.

Defense in depth depends on manifold barriers that lessen risk, but Lochbaum points out all the barriers that failed at Fukushima: off-site power was lost, on-site power was lost, backup on-site power could not be deployed in time, the protective sea wall was insufficient, and more.

“Had just one of these barriers worked, Fukushima would not have happened,” Lochbaum says. “There was simply not enough what-iffing going on” — what the IAEA describes as a “failure to challenge existing safety systems.”

By not preparing for the worst and relying on probabilistic scenarios based on overly optimistic

assumptions, the IAEA implies that Japan's nuclear regulators and plant operators were derelict in their duties. There is a danger that the NRA, in touting its new safety regime, is yet again nurturing a myth of safety.

"When our guesses are good, the 'strictest regulations' look real good," Lochbaum says. "When our guesses are bad, it must be regulatory capture or centralized governance, or de-centralized governance, or whatever lame excuse wanders by."

**The NRA will still rely extensively on plant operators reporting and self-inspections to ensure compliance with regulations. Given that all the utilities operating reactors admitted they faked their repair and maintenance data, why trust them now?**

Lochbaum also notes the huge discrepancies between safety assessments by the U.S. Nuclear Regulatory Commission and plant operators. He likens safety goals to nuclear speed limits, but these are meaningless since the government's radar gun and the utilities' speedometers are way out of line. The closest match has a radar reading of a utility doing 110 miles per hour when it claimed it was following the 55 mile-per-hour speed limit. But at another nuclear plant at Watts Bar in Tennessee, when the "atomic speedometer" showed 55 miles per hour, the NRC's radar gun indicated a smokin' fast 42,853 miles per hour!"

He concludes that existing risk-assessment models "cannot be used for anything other than amusing storytelling and nonproductive time-wasting until their results have closer agreement. **Differing by factors of 2 to 800 about risks doesn't allow risk-informed decision-making.** It supports risk-deformed decision-making."

And don't bank on Japan's reactor stress tests or other new measures such as taller sea walls, longer-duration batteries and other incremental upgrades.

"Individually and collectively, (those things) hedge our guesses and make it less likely that a bad guess will trigger another nuclear disaster," Lochbaum says. However, "As long as **protective barriers are determined by guesswork without the 'what if' backups**, nuclear disasters will continue to happen."

The IAEA says there is no room for complacency about nuclear safety, but **it fails to call Japan out for a major flaw in its disaster emergency preparedness.** It details the need for a proper emergency evacuation organization, training and drills, but under current rules this is the responsibility of local hosting towns, one that exceeds their limited capacity — especially now that the evacuation zones around nuclear plants have been expanded to 30 km. Simulations of evacuations under optimistic assumptions underscore that people living inside the evacuation zone will be exposed to significant radiation because transport networks will be jammed. And if we factor in a volcanic eruption depositing a thick layer of ash and a simultaneous tsunami wiping out coastal roads, the evacuation would be disastrous.

The Titanic was also ill-prepared to evacuate its passengers because it failed to consider the unimaginable and thus mismanaged the risk. It seems the lessons of Fukushima are also being ignored in favor of wishing away risk, and **hoping for inspired improvisation.** There is thus good reason why citizens across Japan are filing lawsuits to block reactor restarts and some gutsy judges are resisting pressure from the nuclear village and siding with common sense.

September 20, 2015

## No standards for radioactive rainwater...

### Radioactive rain releases can't be curbed due to lack of laws: NRA

<http://www.japantimes.co.jp/news/2015/09/20/national/radioactive-rain-releases-cant-curbed-due-lack-laws-nra/#.Vf7JQZfwmid>

Fukushima Minpo

**Tokyo Electric Power Co.'s stricken Fukushima No. 1 power plant has released rainwater tainted with radioactive substances into the Pacific Ocean at least seven times since April.**

The Fukushima Prefectural Government, pressured by worried residents and fishermen, has pressed the Nuclear Regulation Authority to set maximum radiation limits for rainwater releases, but the regulator hasn't acted yet, citing the lack of specific laws on radioactive rainwater.

The plant's K channel, a gutter that was built to drain rainwater accumulated around the six reactors, leads directly to the sea. After rainwater was found tainted with radiation in April, Tepco, as a temporary fix, installed eight pumps and a special underwater curtain in its artificial bay to segregate the water from the open ocean.

With the pumps and the curtain, Tepco claims it can keep radioactive runoff within the bay as long as the rainfall stays at 14 mm per hour or less. But on Aug. 17, rainfall at the plant exceeded 18 mm per hour, and some untreated rainwater overflowed the K channel and got into the ocean. The same thing happened again on Sept. 9 and 11, amid flooding in the Kanto and Tohoku regions triggered by Typhoon Etau.

**When the drainage system is overwhelmed by heavy rain, it is difficult to measure the tainted water and its radiation level,** the utility said.

In May 2014, when Tepco succeeded in measuring rainwater on the premises, the cesium-137 level was gauged at 770 becquerels per liter, or over eight times the 90-becquerel limit for water the plant can release into the sea.

**To rectify the situation, Tepco has been trying to change the K gutter's path so it will flow into the artificial bay instead. But the rerouting work will take until March 2016.**

While Tepco says the problem will be solved in six months, prefectural officials are demanding Tepco resolve the problem as soon as possible, because if the leaks are allowed to continue throughout the typhoon season, public distrust in the government will deepen, making the decommissioning process even more difficult.

Fishery officials are meanwhile worried that their industry could be damaged further if the unregulated rainwater releases continue.

The prefecture is specifically asking that a new pump be installed close to the source of the tainted rainwater, but Tepco has been reluctant, saying such a pump is structurally impossible to install because the part of the drainage system where tainted water is leaking from is underground.

Tepco has been cleaning the drainage gutters on a regular basis to reduce the radiation levels, but to no avail.

Kiyoshi Takasaka, a prefectural expert on atomic power, wants the NRA to place radiation limits on rainwater immediately.

However, **the NRA's position is that there are no laws that regulate radiation-tainted rainwater and therefore it cannot set numerical limits. One industry source said doing so would require revisions to existing laws, which will take a lot of time.**

"I'm worried because we don't know how much radiation-tainted rainwater has leaked out," said Tomomitsu Konno, a 56-year-old fisherman in Soma, Fukushima Prefecture. "Tepco should fully investigate the problem and show the results to the fishermen."

*This section, appearing every third Monday, features topics and issues covered by the Fukushima Minpo, the largest newspaper in Fukushima Prefecture. The original article was published on Sept. 13.*

September 21, 2015

## One in five has no experience

### Survey: 20% of reactor operators inexperienced

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

NHK has learned that **one out of 5 workers who operate reactors at nuclear power plants in Japan has no experience in the work.**

NHK surveyed 10 electric power companies to study the impact of suspended operations at their reactors following the 2011 Fukushima Daiichi nuclear accident.

The survey shows that an average of 22 percent of the reactor operators were inexperienced, as of the end of August.

**The ratio of such workers was the highest, at about 40 percent, at the Sendai plant in Kagoshima Prefecture, southwestern Japan.** One of the plant's reactors was restarted last month.

This is followed by 37 percent at the Shimane plant, 33 percent at the Ikata plant, and 30 percent at the Genkai plant, all in the country's west.

The power companies attributed the lack of experienced workers to the increasing number of workers hired after they suspended operations at their reactors.

It is said to take **10 years to become a full-fledged operator, as comprehensive knowledge and experience are needed in such fields as nuclear fuel, radiation, electricity, mechanics and chemistry.**

At nuclear plants, teams of about 10 workers operate a reactor in shifts. The survey shows that 2 of these people are inexperienced.

The power companies say they are training newly hired operators at facilities simulating reactor control rooms or at their thermal power plants.

But the companies are facing difficulties educating their operators. Some officials say one reason is that they cannot use actual machines for training.

September 23, 2015

## Evacuation plans should come under NRA' s responsibility

### Editorial: Nuclear evacuation plans must be subject to NRA inspections

<http://mainichi.jp/english/english/perspectives/news/20150923p2a00m0na006000c.html>

Just three years have passed since the government launched the Nuclear Regulation Authority (NRA), based on lessons learned from the Fukushima nuclear crisis. The government claims the nuclear watchdog is a highly independent and transparent organization.

The NRA's attitude of placing top priority on the safety of nuclear power plants in inspections it conducts under new regulatory standards, such as requiring electric power companies to assume that stronger earthquakes could hit their nuclear power stations, deserves appreciation.

Evacuation plans for local residents in the event of a nuclear accident, however, are not subject to NRA inspections; they are left entirely to the discretion of local governments of the areas that host such power stations. The NRA should strengthen its inspections on nuclear plants to fulfill its mission of protecting people and the environment.

A supplementary provision to the Act for Establishment of the Nuclear Regulation Authority calls for a review of the NRA within three years, and the executive branch of the government and the ruling Liberal Democratic Party (LDP) have been considering the matter.

Attention has been focused on whether to change rules stipulating that while nuclear reactors should be operated for no longer than 40 years, their lifespan can be extended by up to 20 years if they pass NRA screening. The body's reviews of measures to prevent disasters at nuclear power stations are also under scrutiny.

Some legislators promoting the use of atomic power argue that there is no scientific basis for setting the lifespan of nuclear reactors at 40 years. However, since the NRA has just begun screening utilities' applications to extend the lifespans of their reactors, the government decided not to review this 40-year limit. This is an appropriate judgment, as aging nuclear reactors should be decommissioned.

With regard to measures to prevent disasters at nuclear power stations, the government has deemed the establishment in October last year of a new organization within the Cabinet Office to support local governments' anti-nuclear disaster measures as sufficient. However, serious questions remain about this judgment.

Nine municipalities around the Sendai Nuclear Power Plant in Kagoshima Prefecture, whose No. 1 reactor resumed operations in August this year, have drawn up measures with the prefectural government to respond to an accident at the power station, including evacuation plans. But these local bodies are not expected to conduct evacuation drills until the end of this year. They should have conducted such drills



before the reactivation of the reactor to examine the effectiveness of the plans. This back-to-front approach is attributable largely to the fact that evacuation plans are not subject to inspections by the NRA. In the United States, measures to handle a nuclear plant accident are subject to inspections by the Nuclear Regulatory Commission (NRC). Local governments hosting atomic power stations and other bodies conduct evacuation drills before such plants begin operations, and the NRC decides whether to permit operations at nuclear plants after examining the results of the drills.

**The Japanese government should amend relevant legislation and regulations to require the NRA to inspect evacuation plans in the event of a nuclear accident and empower the authority to halt operations at such plants if evacuation plans are deemed ineffective.**

At the same time, the NRA should secure sufficient human resources at its secretariat and enhance its own ability to communicate with the public.

Staff members of the NRA secretariat attend briefing sessions for residents of areas hosting nuclear plants that have passed inspections if requested by the relevant local governments, but none of the five commissioners of the NRA have attended such gatherings. Niigata Gov. Hirohiko Izumida asked NRA Chairman Shunichi Tanaka last month to hold regular consultations between the National Governors' Association and the NRA, but the authority has not responded to the governor's request.

The NRA is not an organization that guarantees the safety of nuclear power plants. Still, if the commissioners explain their attitude toward inspections and the basis for their judgments on the safety of nuclear reactors, then the authority can win the public's confidence.

September 24, 2015

## **Waste bags recovered... but empty**

### **Radioactive soil bags to be moved to high ground**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Environment ministry says it will better manage garbage bags holding radioactive soil and weeds in Fukushima Prefecture after hundreds of sacks stored outside were washed away by heavy rains.

Rains that hit northeastern Japan on September 11 carried away 439 plastic bags in Iitate Village. The bags contained tainted soil, grass and tree branches gathered from cleanup work after the 2011 nuclear crisis contaminated the region with radioactive fallout.

Environment ministry officials told an expert panel on Thursday that **nearly 400 have been recovered though many were empty.**

They said **they will from now on register all the locations of the waste as well as the numbers at each place,** despite the storage being temporary.

Officials also said **they will move the waste to high ground or fix the bags them with ropes** to prevent



them from being washed away by heavy rain and typhoons.

Experts urged the officials to inform local residents of the levels of radioactive substances in the rivers where the bags were lost. They said the government should hurry to prepare intermediate storage facilities. Building the facilities is taking time due to negotiations with land owners and other reasons.

Ministry officials said they will check the radioactivity levels in the rivers and inform the residents.

## No evacuation plans for over half Japanese volcanoes

### No evacuation plans for majority of 50 active volcanoes: Mainichi survey

<http://mainichi.jp/english/english/newsselect/news/20150924p2a00m0na005000c.html>

No evacuation plans in the event of a volcanic eruption have been drawn up for 26 out of Japan's 50 active volcanoes that are constantly monitored by the Japan Meteorological Agency (JMA), a survey by the Mainichi Shimbun found.

The Mainichi survey also found that no hazard map showing areas where volcanic eruptions could cause damage has been worked out for 11 active volcanoes. The revised Act on Special Measures concerning Active Volcanoes, which is due to take effect by January 2016, requires municipalities adjacent to the 50 active volcanoes (including three volcanoes that are scheduled to be added to the list) to compile evacuation plans and hazard maps. But the Mainichi survey revealed that measures against volcanic eruptions have not sufficiently been worked out partly because of a lack of a sense of crisis and insufficient coordination among relevant local governments.

The revised Act on Special Measures concerning Active Volcanoes was enacted in response to the eruption of Mount Ontake straddling Nagano and Gifu prefectures in September last year, which left 58 people dead and five others missing. The law obliges relevant municipalities near the 50 active volcanoes to establish disaster prevention councils, set eruption alert levels, and compile hazard maps and specific evacuation plans targeting local residents, climbers and tourists, among other steps. But there is no deadline set for working out the measures.

The Mainichi Shimbun asked relevant municipalities with secretariats for disaster prevention councils and other sources in September about their volcanic disaster prevention schemes. The Mainichi survey found that although about 30 percent of the municipalities had not set up disaster prevention councils before the eruption of Mount Ontake, all of the municipalities, except for those in Aomori and Akita prefectures near the Towada volcano, have already established such councils. The Towada volcano is to be added to the list of active volcanoes being constantly monitored by the JMA. Hazard maps, on the other hand, have already been drawn up for 39 volcanoes, but such maps have not been compiled for many active volcanoes such as those at Mount Norikura (Nagano, Gifu prefectures) and on the Izu Islands (Tokyo).

Disaster prevention councils for 19 volcanoes replied to the Mainichi survey that they have evacuation plans in place. But of the councils, those for eight volcanoes such as Mount Fuji (Yamanashi, Shizuoka prefectures) said they were working to revise their evacuation plans because they did not comply with the revised law that requires the designation of specific evacuation areas and evacuation routes. The councils

for five volcanoes said some of the relevant municipalities were moving ahead of others to work out evacuation plans.

The disaster prevention councils for 26 volcanoes that have yet to compile evacuation plans said they have their own reasons for not doing so. For example, the council for Mount Chokai said, "There have been no signs of the volcano being activated," while the council for Mount Norikura said, "Because the scope of the volcano's impact is not clear." Other reasons for having not prepared evacuation plans include: "As there are many organizations related to volcanic disaster prevention, it is difficult for them to contact and coordinate and share information with one another." (Mount Azuma) and "It is difficult for town government staff with no expert knowledge to run a secretariat of the council." (Mount Kuju) An official at the Cabinet Office in charge of disaster prevention research and planning said, "The government has been providing guidance for compiling evacuation plans, among other means, but we will properly extend support for compiling them early."

September 26, 2015

## Rebuilding Fukushima's dairy industry

### Fukushima dairy farmers to restart shipments

<http://www.japantimes.co.jp/news/2015/09/26/national/fukushima-dairy-farmers-to-restart-shipments/#.VgZms5fwmic>

JJI

FUKUSHIMA – Dairy farmers who were forced to suspend business following the 2011 nuclear accident at Tokyo Electric Power Co.'s Fukushima No. 1 power plant plan to restart milk shipments as early as this year, with a new large-scale stock farm completed in the city of Fukushima on Friday.

Fully supported by the government and the prefectural dairy cooperative association, the stock farm, with 580 cows, is expected to become **a foothold for rebuilding the prefecture's dairy industry**, hit hard by business closures and radiation-related rumors.

The farm is operated by a company established jointly by five dairy farmers from Minamisoma, Namie and Iitate. Kazumasa Tanaka, 44, from Iitate, has been appointed president of the company.

The company aims to produce 5,000 tons of raw milk annually under a computer-based control system on the 3.6-hectare (8.9-acre) farm.

"I have chosen to do this because of a sense of responsibility for the rebuilding of the dairy industry in Fukushima," Tanaka said at a completion ceremony. "It will be the happiest thing to cheer up our peers by our stock farm getting on a growth path."

Following the triple meltdown at the nuclear plant triggered by the massive earthquake and tsunami in March 2011, **76 dairy farmers had to evacuate and suspend their operations. Among them, only 13 farmers have restarted their businesses.**

In the prefecture, annual production of raw milk remains sluggish at around 80,000 tons, down 20 percent from before the disaster.

The new stock farm was developed and is owned by the prefectural dairy cooperative, which is subsidized by the central and prefectural governments.

September 30, 2015

## Where did it go?

### **Fukushima: the World's Never Seen Anything Like This**

<http://www.counterpunch.org/2015/09/30/the-worlds-never-seen-anything-like-this/>

by Robert Hunziker



The Fukushima Daiichi Nuclear Power Plant No. 2 nuclear reactor fuel is missing from the core containment vessel. (Source: Up to 100% of No. 2 Reactor Fuel May Have Melted, NHK World News, Sept. 25, 2015.)

Where did it go? Nobody knows.

Not only that but the “learning curve” for a nuclear meltdown is as fresh as the event itself because “the world has never seen anything like this,” never.

Utilizing cosmic ray muon radiography with nuclear emulsion, researchers from Nagoya University peered inside the reactors at Fukushima. The nuclear fuel in reactor core No. 5 was clearly visible via the muon process. However, at No. 2 reactor, which released a very large amount of radioactive substances coincident with the 2011 explosion, little, if any, signs of nuclear fuel appear in the containment vessel. A serious meltdown is underway.

“The researchers say further analyses are needed to determine whether molten fuel penetrated the reactor and fell down,” Ibid. In short, researchers do not yet know if the molten hot stuff has penetrated the steel/concrete base beyond the containment vessel, thus entering Mother Earth.

The Nagoya University research team, in coordination with Toshiba Corporation, reported their findings at a meeting of the Physical Society of Japan on Sept. 26th.

Thus, therefore, and furthermore, it is advisable to review what's at stake:

"High-level nuclear waste is almost unimaginably poisonous. Take for example cesium-137, with a half-life of 30 years, which makes up the largest fraction of long-lived radionuclides residing in spent nuclear fuel. One gram of radioactive cesium-137 (about half the size of a dime) contains 88 Curies of radioactivity. 104 Curies of radioactive cesium-137, spread evenly over one square mile of land, will make it uninhabitable for more than a century," Comments on Draft of Nuclear Waste Administration Act of 2013, Physicians for Social Responsibility, May 23, 2013.

As for example, there are 1,090 square miles of land surrounding the destroyed Chernobyl reactor that Ukraine classifies as an uninhabitable radioactive exclusion zone because radioactive fallout left more than 104 Curies of cesium-137 per square mile on the land that makes up the zone. Scientists believe it will be 180 to 320 years before Cesium-137 around Chernobyl disappears from the environment. Here's the big, or rather biggest, problem: Cesium is water-soluble and makes its way into soils and waters as it quickly becomes ubiquitous in a contaminated ecosystem.

Chernobyl, on the other hand, is a different animal than Fukushima because its explosion was much more widespread and more dense than Fukushima, where 80% of initial radiation was blown out to the Pacific Ocean. Hmm.

Whereas, during the Three Mile Island incident, a partial core meltdown occurred but the reactor vessel was not breached, so there was no major radiation release.

Categorically, "Long-lived radionuclides such as Cesium-137 are something new to us as a species. They did not exist on Earth in any appreciable quantities during the entire evolution of complex life. Although they are invisible to our senses they are millions of times more poisonous than most of the common poisons we are familiar with. They cause cancer, leukemia, genetic mutations, birth defects, malformations, and abortions at concentrations almost below human recognition and comprehension. They are lethal at the atomic or molecular level," Steven Starr, senior scientist, Physicians for Social Responsibility, Director, Univ. of Missouri, Clinical Laboratory Science Program, The Implications of the Massive Contamination of Japan With Radioactive Cesium, Speech to NY Academy of Medicine, March 11, 2013.

Still, a true understanding of the dangers of the Fukushima disaster may never be fully known by the general public because of difficulties accessing solid information. Indeed, the Japanese government has made it nearly impossible to obtain information which is not indiscriminately labeled "secret," and a journalist may face up to 10 years in prison based upon which side of the bed a government employee gets up on any given morning; it's absolutely true!

The independent organization Reporters without Borders has downgraded Japan in its World Press Freedom Index from 22nd place in 2012, to 53rd in 2013 and to 59th in 2014, following the enactment of the state secrets bill. Reporters without Borders says that "Japan has been affected by a lack of transparency and almost zero respect for access to information on subjects directly or indirectly related to Fukushima," Reporters without Borders (2013). Press Freedom Index 2013: Dashed Hopes After Spring, August 2014.

Meanwhile, there is another angle to the nuclear issue. On the opposite side of the anti-nuke crowd it is instructive to note that a sizeable pro-nuke coterie claim nuclear power is safe and also claim that few, if any, serious human health problems have arisen, or will arise, from radiation exposure. In fact, some nuke addicts even claim a "little radiation exposure" is good.

That, however, has been debunked via a recent (July 2015) landmark study concluded by an international consortium under the umbrella of the International Agency for Research on Cancer / Lyon, France where a long-term study for low radiation impact was conducted on 300,000 nuclear-industry workers. The

study proves, beyond a doubt, there is “no threshold dose below which radiation is harmless.” Any amount is harmful, period.

Nevertheless, here’s one example of the pro-side:

“The Fukushima incident will continue to attract media attention for some time to come, I imagine. It has become such a good story to roll with that it will not just go away. However, in sober reflection and retrospection one has to come to the conclusion that far from being a nuclear disaster the Fukushima incident was actually a wonderful illustration of the safety of nuclear power,” Dr. Kelvin Kemm, CEO of Nuclear Africa, Physicist: There was no Fukushima Nuclear Disaster: The Terrible Toll From Japan’s Tsunami Came From the Wave, not Radiation, Cfact, Oct. 12, 2013.

Back to Fukushima, depending upon whom is the source, radiation exposure is (a) extremely harmful and deadly as levels of radioactivity are widespread throughout the greater region, including Tokyo, or contrarily, (b) radioactivity is at such nominal levels that people do not need to worry, or (c) the worst is yet to come. Thereupon the rubber meets the road, meaning the credibility issue encountered by outsiders looking inside Fukushima remains “who to believe.”

Meanwhile, the “world information system aka: Internet” is crowded with stories about melting starfish in the Pacific Ocean, dumbfounded whales, and massive animal deaths enough so that people start connecting the dots in expectation that Fukushima radiation is omnipresent; however, to date, most of the evidence is labeled conjecture by various mainstream parties. Again, the problem is who to trust. Regardless of whom to believe, it is now known for a fact, a hard fact, that Fukushima Daiichi Nuclear Power Plant No. 2 is missing its fuel within its core containment vessel. This leads to a world of unknowns, and the biggest question is: What can be done about a full meltdown should it occur (maybe it’s already occurred)? Then what?

A full meltdown would involve all of the fuel in the nuclear plant core melting and a mass of very hot molten material falling and settling at the bottom of the reactor vessel. If the vessel is ruptured, the material could flow into the larger containment building surrounding it, which is shielded by protective layers of steel and concrete (Ferguson).

“But if that containment is ruptured, then potentially a lot of material could go into the environment,” according to Charles Ferguson, president of the Federation of American Scientists (Source: Mechanics of a Nuclear Meltdown Explained, PBS Newshour, Science, March 15, 2011.)

What does a lot of material going into the environment really mean?

Sources claim deadly Cesium-137, which is only one of many dangerous isotopes, is water-soluble and makes its way into soils and waters, as it quickly becomes ubiquitous in the ecosystem. The question thus becomes would a full meltdown turn lose this deadly isotope, as well as others, on the surrounding environment? Frankly, it kinda seems like it would.

Nobody knows whether Fukushima morphs full meltdown into Mother Earth, although the signposts are not good, and not only that but nobody knows what to do about it. Nobody knows what to do. They really don’t.

The only thing for certain is that it’s not good. Going forward, it becomes a matter of how bad things get.

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October 3, 2015

## Minor quake near Sendai reactor

### Minor quake jolts city adjacent to just-rebooted Kagoshima atomic reactor

<http://mainichi.jp/english/english/newsselect/news/20151003p2g00m0dm006000c.html>

TOKYO (Kyodo) -- A minor quake struck early Saturday morning in a Kagoshima Prefecture city north of the Sendai nuclear power plant where the first reactor that conforms to strict post-Fukushima safety rules was rebooted in August.

There were no immediate reports of damage, and no tsunami warning has been issued by the Japan Meteorological Agency after the 4:10 a.m. quake with a preliminary magnitude of 4.1.

The focus of the quake was around 10 kilometers underground in the prefecture's Satsuma region.

The quake registered 4 on the Japanese seismic intensity scale of 7 in Akune city, which lies north of the city of Satsumasendai, the host of the Sendai plant.

Satsumasendai registered an intensity of 2.

October 5, 2015

## Still checking all Fukushima rice

### Fukushima Pref. to continue testing all rice for radioactive contamination

<http://mainichi.jp/english/english/newsselect/news/20151005p2a00m0na009000c.html>

The Fukushima Prefectural Government plans to continue radiation tests on all bags of rice from the prefecture, on the grounds that consumer confidence has yet to be completely restored due to the ongoing Fukushima nuclear crisis.

The prefectural government began testing all bags of rice produced in the prefecture, starting with rice produced in 2012, a year after the meltdowns at Tokyo Electric Power Co.'s Fukushima No. 1 Nuclear Power Plant. Cases in which radiation levels have exceeded the government safety standard of no more than 100 becquerels per kilogram have decreased each year, with no market-destined rice produced in 2014 being deemed unsafe. Tests on rice produced in 2015 began in August and no results have exceeded the standard this year so far.

At least around 10 million 30-kilogram bags of rice are tested for radiation each year, at a cost of roughly 5 billion yen. Bags whose radiation level is below the government standard receive a "safety sticker" and can be delivered to the market.

According to the prefectural government, 71 bags of rice produced in 2012 exceeded the standard. The following year, the figure fell to 28. In 2014, just two bags produced in an area where measures had not been taken to reduce contamination exceeded the standard. This rice was for home use, not for the market. The steady decline is believed to be a result of progressing measures to reduce contamination, such as spreading potassium over fields to absorb radioactive cesium.



Rice produced in 2011, when the Fukushima nuclear meltdowns occurred, was subjected to sample testing. In October the same year, the prefectural government declared rice in the prefecture "safe," on the grounds that none exceeded the government's provisional safety standard of 500 becquerels per kilogram. Just a month later, however, contamination above this level was found on several occasions, and the following year the prefecture started testing all rice. A total of 202 testing devices were purchased at a cost of about 4 billion yen and distributed across the prefecture. Over the three years between the 2012 and 2014 fiscal years, the cost of running this equipment, including personnel costs, reached about 15 billion yen.

Takashi Kanno, head of the JA Shin-Fukushima agricultural cooperative, commented, "Looking at data over the past three years, we can probably secure safety through sample testing." However, in a survey of about 600 businesses and consumers within and outside of Fukushima Prefecture in 2013, at least 70 percent of respondents supported testing of all bagged rice.

### **Photo Journal: Fukushima town preparing rice for market next year**

<http://mainichi.jp/english/english/newsselect/news/20151005p2a00m0na002000c.html>



Yukiei Matsumoto, mayor of the Fukushima Prefecture town of Naraha, harvests rice that has been cultivated on an experimental basis to test for radiation contamination, on Oct. 4, 2015. In the background, to his right, stands Yuzutaro, the town's mascot. The evacuation order issued to residents of Naraha after the 2011 onset of the nuclear disaster was lifted about a month ago. Radiation levels in rice grown in Naraha last year and the year before did not exceed standards set by the national government. If radiation levels remain below those standards this year, rice from Naraha is set to make it to the market beginning with next year's harvest. However, because many local farmers fear that consumers will avoid rice from

Naraha regardless of the test results, only about 6 percent of farmers who grew rice before the March 2011 triple disasters are expected to plant rice next spring. (Mainichi)

October 7, 2015

## Monju: Faults unlikely to move

### Panel: Faults under Monju reactor unlikely to move

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

A team of experts has agreed that the faults beneath a fast-breeder reactor in central Japan are unlikely to move.

The 4 experts discussed the faults under the Monju reactor in Fukui Prefecture at a meeting on Wednesday. They are members of a Nuclear Regulation Authority panel.

The experts examined data submitted by the reactor's operator, the Japan Atomic Energy Agency. The data included an analysis of minerals in the faults.

The members agreed that **it is unlikely the faults had shifted in the past 120,000 to 130,000 years.** New regulations used by the NRA define a fault as potentially active if it shifted within that time.

**But the experts also pointed out the need to study whether movement at an active fault running west of the facility might cause the faults under the Monju reactor to shift too.**

The members agreed to compile a final report after carrying out onsite surveys of the active fault.

In 2013, many safety inspection oversights were uncovered at the Monju reactor. Its operator has since been banned from conducting test runs.

In August, the regulators found thousands of fresh errors in safety classifications of the equipment and devices at the reactor.

October 12, 2015

## Safety "fully vouched for"

### Safety of Fukushima-produced foods emphasized at Milan expo

<http://www.japantimes.co.jp/news/2015/10/12/national/safety-fukushima-produced-foods-emphasized-milan-expo/#.VhvMAivwmot>



Kyodo

MILAN – A campaign began at the Japan Pavilion of the food-themed world expo in Italy on Sunday to demonstrate to visitors that food from Fukushima Prefecture is safe despite a nuclear disaster there in 2011.

During the four-day campaign which ends Wednesday, samples of local foods, such as fruits and Japanese sake, are being offered to highlight the quality control efforts producers have been making since the disaster.

At the pavilion, Norio Hashimoto, an official of the Fukushima Prefectural Government, said the quality of fruits shipped from the prefecture is “fully vouched for.” He added, “Fukushima is one of the major producers of fruits in the country.”

His colleague, Takeshi Fujita, said the purpose of the campaign is to convey “correct information” about Fukushima foods, but stressed that he does not intend to force it on anyone.

The campaign is also aimed at conveying how far rebuilding has proceeded since the Fukushima No. 1 nuclear power plant suffered meltdowns in tsunami triggered by a powerful earthquake on March 11, 2011.

A 59-year-old visitor said he enjoyed the dried peaches and sake that were served at the event, expressing hope that safety is pursued “sincerely” on matters of food.

Some visitors had the chance to experience Fukushima folklore in which dumplings are skewered on tree branches to wish for a good harvest.

October 13, 2015

## The less reprocessing the safer

### Obama adviser raises concerns about Japan's plutonium stockpile

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201510130012](http://ajw.asahi.com/article/behind_news/politics/AJ201510130012)

An adviser to U.S. President Barack Obama expressed concerns about Japan's plan to reprocess its spent nuclear fuel, citing the ever-increasing plutonium stockpile already in the nation's possession.

**“In the case of Japan, where there is already a sizable stockpile of separated plutonium, we would prefer not to see it grow,”** John Holdren said in an interview with The Asahi Shimbun in Tokyo.

Holdren, who advises Obama on science and technology issues, was in Japan for a meeting of the Joint High-Level Committee on U.S.-Japan Science and Technology Cooperation.

The Obama administration has called on all nations to minimize the amount of plutonium possessed because it could be converted for use in nuclear weapons. U.S. officials feel that limiting plutonium is important to promote nuclear nonproliferation and prevent terrorist acts using nuclear weapons.

“The United States has taken the position that it is preferable that countries that are currently not reprocessing should not go into it,” Holdren said. “Since reprocessing leads to separated plutonium and, in principle, separated plutonium can be used to make nuclear weapons, **our general view is that less reprocessing in the world is better than more.**”

Japan has commissioned Britain and France to reprocess its spent nuclear fuel to extract plutonium. **At the end of 2014, Japan had a plutonium stockpile of 47.8 tons, stored both in Japan and abroad.** At the end of 2000, Japan's plutonium stockpile was 37.2 tons.

As part of its nuclear fuel recycling program, Japan has been pushing its pluthermal plan that involves mixing plutonium with uranium to produce plutonium-uranium mixed oxide (MOX) fuel.

However, the 2011 disaster at the Fukushima No. 1 nuclear power plant has clouded the future of the pluthermal project. That, in turn, has led to an increase of Japan's plutonium stockpile to **an amount that could produce about 6,000 nuclear warheads.**

Although Japan has scant prospects for moving ahead with the pluthermal program, it has not abandoned plans to start up its own spent fuel reprocessing facility. Japan Nuclear Fuel Ltd. is seeking to complete such a reprocessing facility in Rokkasho, Aomori Prefecture, by March 2016.

Regarding the reprocessing facility, Holdren said: "Japanese authorities are in the process of looking at whether they will approve starting the Rokkasho plant. That is a decision for the Japanese authorities, not for the United States, to make."

In autumn 2012, the Democratic Party of Japan-led government headed by Prime Minister Yoshihiko Noda came out with a new energy policy to shut down all nuclear plants in the nation. U.S. officials raised concerns with their Japanese counterparts about the handling of excess plutonium because the Noda administration did not provide a clear stance regarding the reprocessing of spent nuclear fuel.

In early September 2015, 14 U.S. experts, including Joseph Nye, a Harvard University professor who once served as assistant secretary of defense, submitted a letter to the U.S. Energy Department calling on the United States to abandon its own plan to construct a MOX fuel plant and to persuade Japan to suspend plans to operate the Rokkasho facility.

The letter also urged the U.S. government to ask China and South Korea to review their own plans to one day construct a spent fuel reprocessing facility.

The U.S. think tank Nonproliferation Policy Education Center was involved in putting together the letter signed by the 14 experts, including Henry Sokolski, the NPEC executive director.

The letter said that "in addition to saving money, ending the current MOX program would be in the (United States') national security interest."

The position of the U.S. government has been not to reprocess spent nuclear fuel from reactors. Instead, its long-term plan is to store such spent fuel in a specialized facility before constructing a final disposal site.

Washington has also signed an agreement with Moscow about reducing their respective nuclear arsenals. Under that agreement, a MOX production plant to be constructed in North Carolina would process 34 tons of plutonium extracted from dismantled nuclear weapons. The MOX fuel would then be used in nuclear plants.

However, rising construction costs have pushed back those plans. The projected cost is now about \$7.7 billion (about 930 billion yen), several times the initial estimate. Although the initial planned completion date was autumn 2016, there will be a major delay in completing the project.

(This article was written by Takashi Oshima in Tokyo and Tetsu Kobayashi in Washington.)

October 15, 2015

## What about safety?

### EDITORIAL: Safety put on the back burner as another nuclear reactor is restarted

<http://ajw.asahi.com/article/views/editorial/AJ201510150040>



People rally in front of the Sendai nuclear power plant to protest the restart of its No. 2 reactor in Satsuma-Sendai, Kagoshima Prefecture, on Oct. 15. (Jun Kaneko)

Kyushu Electric Power Co. is set to restart the No. 2 reactor at its Sendai nuclear power plant in Satsuma-Sendai, Kagoshima Prefecture, on Oct. 15. In August, the plant's No. 1 reactor became the first to resume operations under new safety regulations that went into force in July 2013.

Some areas near the plant may not even have a dependable evacuation route in the event of a disaster.

Furthermore, no evacuation drills for residents have been undertaken.

The electric utility's plan to restart the idled reactor was given the green light by the Nuclear Regulation Authority. The nuclear watchdog body has no authority, however, to examine evacuation plans.

A reactor should not be restarted under such circumstances.

Four hundred or so people live in the Soro district near the mouth of the Sendaigawa river, the community located closest to the Sendai nuclear plant.

Experts have warned that all possible evacuation routes for the residents would become unusable in case of multiple disasters stemming from an accident at the plant, leaving the community totally isolated.

The municipal government has designated a bridge over the mouth of the river and a prefectural road along the river as the emergency evacuation route for the residents of the Soro district. But the bridge could collapse in a powerful quake, while the prefectural road would likely become impassable due to tsunami or high waves.

The only other road that vehicles could use is a forest path that would become impassable if the slope alongside it collapsed.

Despite repeated requests from the district, no steps to ensure the safety of the residents were taken before the No. 1 reactor resumed operations in August.

The myth that a serious nuclear accident is unlikely to occur because of a natural disaster was utterly destroyed by the accident at the Fukushima No. 1 nuclear power plant in March 2011.

In order to ensure the safety of local residents, evacuation plans that include designated evacuation routes should also be part of the procedure for approving a reactor restart.

A system to assess the effectiveness of evacuation plans through drills involving residents, with a way of making revisions to the plans if necessary, should be established from the viewpoint of residents. Such functions could be placed under the NRA or another organization.

Also causing safety concerns among residents is the decision to bring the No. 2 reactor back online without replacing its aged steam generators.

At the Sendai plant, small pipes in the No. 1 reactor's steam generators were found to be corroded one after another around 2000, forcing the utility to replace the generators in 2008.

In 2009, Kyushu Electric Power announced plans to replace all three steam generators at the No. 2 reactor as part of moves to "further enhance the reliability" of the reactor. The utility received permission to do this from the industry minister.

After the Fukushima nuclear disaster, however, the company decided to postpone the replacement as it became preoccupied with making preparations for the NRA's inspections based on post-Fukushima safety requirements.

In May this year, the company's plan to restart the reactor with the old steam generators was approved by the NRA. The replacement has still not been done.

Kyushu Electric Power says it only considered replacing the generators as a highly precautionary measure and stresses that its plan to restart the reactor with the current generators has cleared the NRA's safety checks.

But failing to take the step that was necessary for enhancing reliability inevitably undermines reliability. Not surprisingly, local residents have voiced concerns about the safety of the reactor, questioning its ability to withstand a major earthquake.

Last year, Prime Minister Shinzo Abe said he would not allow a reactor startup unless its safety is completely confirmed.

But the process of approving reactor restarts at the Sendai nuclear power plant has not been in line with his pledge at all.

October 16, 2015

## **Nuclear watch: Concerns over Restarts**

### **Concerns over Nuclear Restarts**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclearwatch/20151016.html>

Tomoko Kamata

Another reactor at a nuclear power plant in southwestern Japan is back online. This is the second restart under new regulations adopted after the 2011 Fukushima accident. The plant operators are preparing to restart 3 more reactors.

But many nearby residents say they need more information.

The No. 2 reactor at the Sendai nuclear power plant went back online on Thursday. The No. 1 reactor at the plant was restarted in August. Until then, all of Japan's nuclear reactors had been offline since September 2013.

Two reactors at the Takahama plant and one at the Ikata plant have now been declared in compliance with the new regulations.

The operators of the Takahama plant want to go back online by January. But a court decision is blocking their way.

The Ikata plant is undergoing checks by regulators. Meanwhile, power companies have applied for regulatory approval for another 20 reactors.

Government officials say restarting Japan's nuclear plants will ensure a stable power supply and lower greenhouse gas emissions. And plant operators say the cost of fuel at thermal plants is extremely burdensome.

Isamu Matsumiya lives in the town of Takahama. He accepts that restarting the reactors is necessary. But he's unhappy with how the local government is handling the issue.

He said town officials broadcast information about safety measures on television, six times a day. But there have been no face-to-face meetings with residents.

Matsumiya responded to a questionnaire. He asked how radioactive water will be kept from seeping out in the event of disaster. He received a reply saying only that the government "is working on it."

"The officials don't understand how we feel when we ask such questions," said Matsumiya. "I'm disappointed this is how they respond to residents."

Some other residents pointed out problems with the town's evacuation plans. Most are expected to use a coastal road.

But town officials predict the route will be inundated if a tsunami hits the area.

Experts also indicate many evacuees will end up getting stuck in traffic.

Takanobu Sugimoto, Cabinet Office Director for Nuclear Emergency Preparedness, says, "The office is doing its best to support and coordinate with local officials to respond appropriately should an emergency occur."

An NHK survey conducted last weekend asked people how they feel about restarting the reactors.

Eighteen percent of respondents said they support bringing the plants back online, while 43 percent are opposed.

Experts say the government must demonstrate how it plans to protect public safety, if it wants to gain support.

October 17, 2015

## Rice harvested by evacuees to check radiation levels

### Evacuees of disaster-hit village harvest rice to measure contamination

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201510170055>





Muneo Kanno, left front, and members of a local group and volunteers harvest a rice crop to measure its radioactive contamination in Iitate, Fukushima Prefecture, on Oct. 3. (Sayuri Ide)

By SAYURI IDE/ Staff Writer

IITATE, Fukushima Prefecture--Former residents of this village evacuated after the 2011 nuclear disaster returned to harvest rice, not to eat, but to glean data on levels of radioactivity.

**By gathering reliable data on radioactive pollution in the rice plants, the villagers hope it will prove to be a vital step in a future decision to return for good.**

The village located northwest of the crippled Fukushima No. 1 nuclear plant was evacuated in the aftermath of the 2011 triple meltdown at the Fukushima facility triggered by the earthquake and tsunami disaster.

**The villagers, joined by volunteers from the Tokyo metropolitan area, formed the nonprofit group "Fukushima Saisei no Kai" (Resurrection of Fukushima) to raise the crop from 2012 to monitor the radioactivity in various rice types, including brown rice, polished rice, rice bran and rice straw.**

The residents of Iitate are barred from returning home to live due to high radiation levels.

"Our feelings toward the local community will be shared by others when we join in (this project) together," said Muneo Kanno, a 64-year-old Iitate evacuee who co-founded the group and participated in the Oct. 3 harvest, the fourth since the project first got under way.

The rice paddies were inundated with torrential rains in September. There were also downpours in nearby forests that have not been decontaminated.

**"We will accumulate data on the consequences (of the heavy rains) and pass them down to the next generation," Kanno said.**

October 18, 2015

## Skating ring in Kawamata will reopen

### Fukushima skating rink to reopen in anticipation of residents' return

Fukushima Minpo

A well-known skating rink in Kawamata, Fukushima Prefecture, that closed after the triple core meltdown at the Fukushima No. 1 power plant in 2011 will reopen in January, giving a shot in the arm to the disaster-stricken area.

The open-air rink in the Yamakiya district was evacuated to protect residents from the radiation spewed out by the ruined atomic plant. In August 2013, however, the majority of the district was redesignated as ready to have the evacuation order lifted.

Since that might happen as early as next spring, the Kawamata Skating Club announced on Oct. 7 that it was finally planning to reopen the rink in January.

Using a ¥10 million subsidy from the Small and Medium Enterprise Agency, the club will develop the 150-meter course Kinuno Sato Yamakiya Tanbo Rink on the same idle *tanbo* (rice paddy) it stood on before. It also will build a clubhouse stocked with 50 pairs of new ice skates.

**"We want to carry over the 'Tanbo Rink' to the next generation,"** said club Chairman Toichi Kanno. Kanno and Hidekazu Ouchi, the vice chairman, visited the site on Oct. 7.

The Environment Ministry finished its decontamination work in Yamakiya this year. The club has determined the rink will be safe when it reopens in January, pointing out **the ice will block some of the radiation.**

The rink will be made naturally from water sprinkled on the rice paddy and be open from mid-January to early February. Skaters will be able to use it from early morning till about 10 a.m., free of charge, the club said.

Olympic speed skating champion Hiroyasu Shimizu, who won gold in the 500-meter even in Nagano in 1998, will be invited to give lessons in late January, it said.

The Fukushima Skating Federation also plans to hold a competition in Yamakiya.

"The skating population fell sharply after the close of the Tanbo Rink," said Eiju Sato, chairman of the federation. "We hope (reopening it) will help the development of speed skating" in Fukushima Prefecture, he said.

The Kawamata Skating Club opened the rink on the rice paddy in 1984 as a project to revitalize the Yamakiya district. The last time it was open was in February 2011.

About 1,500 people used the rink each winter, and about 300 local elementary and junior high school students had joined the club.

*This section, appearing every third Monday, features topics and issues covered by the Fukushima Minpo, the largest newspaper in Fukushima Prefecture. The original article was published on Oct. 8.*

October 19, 2015

## Salmon fishing resumes in Fukushima

### Salmon fishing returns to Fukushima after 5-year absence

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201510190032](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201510190032)

By AKIFUMI NAGAHASHI/ Staff Writer

NARAHARA, Fukushima Prefecture--Traditional salmon "combination net fishing" returned to the Kidogawa river here for the first time in five years as fishermen hauled in about 120 of the cold-water fish.

With the evacuation order for Naraha lifted in September, members of the local fisheries cooperative association gathered around 11:30 a.m. on Oct. 18 to drive salmon from the upper reaches of the Kidogawa with a net toward another one set up downstream.

It was the first time the fishing operations took place since the nuclear disaster at the nearby Fukushima No. 1 nuclear power plant, which was caused by the 2011 Great East Japan Earthquake and tsunami.

Most of Naraha is located within the 20-kilometer-radius evacuation zone surrounding the stricken plant, but the evacuation order was lifted for the entire town on Sept. 5.

According to the association, some of the fish caught were salmon fry that were released into the Kidogawa in early March 2011 before the disaster, which had returned to the river as adults to spawn.

Authorities gave the green light to shipping Kidogawa river salmon after a survey conducted by the Fukushima prefectural government found that levels of radioactive materials detected in the fish were below the central government's safety standard of 100 becquerels per kilogram.

### Photo Journal: Salmon fishing resumes in disaster-hit Fukushima town

<http://mainichi.jp/english/english/newsselect/news/20151019p2a00m0na004000c.html>





Salmon are caught in nets in the Kido River in Naraha, Fukushima Prefecture, on Oct. 18, 2015 -- the first time in five years for salmon fishing to resume in the area following the outbreak of the disaster at Tokyo Electric Power Co.'s Fukushima No. 1 Nuclear Power Plant. Fishermen created a weir across the river and formed a line to drive salmon about 200 meters downstream and net them. The area was one of the biggest producers of the fish on Honshu island before the March 2011 earthquake and tsunami that triggered the nuclear disaster, with some 15 million fry released each year, but hatcheries suffered major damage in the 2011 tsunami. The prefectural government began monitoring the fish three years ago, and no radioactive materials have been detected in the fish. The salmon will go on the market for the first time since the disaster. (Mainichi)

## **Salmon fishing resumes in Fukushima**

[http://www3.nhk.or.jp/nhkworld/english/news/20151019\\_10.html](http://www3.nhk.or.jp/nhkworld/english/news/20151019_10.html)

Fishermen in Fukushima have resumed catching salmon in a river for the first time since the 2011 nuclear disaster in the prefecture.

Salmon fishing in the Kido River, which runs through Naraha town, had been suspended because the area was designated an evacuation zone.

But fishermen decided to resume fishing after the evacuation order was lifted on September 5th, and tests on salmon that had returned to the river found them free of radioactive substances.

Town officials and people from a local fishery cooperative joined a ceremony on Sunday to pray for safe

fishing. They also celebrated the completion of a processing plant that was destroyed by the tsunami.

Fishermen then went out on the river and hauled up nets.

The head of the fishing cooperative, Hideo Matsumoto, said he's relieved to restart catching salmon. He said he wants town residents to enjoy eating the fish.

Mayor Yukiei Matsumoto said he's pleased with the revival of salmon fishing because it's a key resource for tourism in his town. He said it will invigorate the community and contribute to the local recovery.

The fishery cooperative plans to start test-marketing processed salmon this year. It will also release young salmon into the river next spring.

October 21, 2015

## M5.5 hits Fukushima

### M5.5 hit Fukushima offshore / Tepco “No abnormality reported”

<http://fukushima-diary.com/2015/10/m5-5-hit-fukushima-offshore-tepco-no-abnormality-reported/>



by Mochizuki

According to JMA (Japan Meteorological Agency), M5.5 occurred offshore Fukushima at 15:04 of 10/21/2015 (JST).

The maximum seismic intensity was 4. Quake was observed from Aomori prefecture to Shizuoka prefecture.

Tepco announced no abnormality was reported about the coolant systems nor monitoring post.

<http://www.jma.go.jp/en/quake/20151021151527395-211504.html>

[http://www.tepco.co.jp/cc/press/2015/1262736\\_6818.html](http://www.tepco.co.jp/cc/press/2015/1262736_6818.html)

October 22, 2015

## **Ikata: Evacuation plans remain insufficient**

### **Editorial: Evacuation measures insufficient to approve restart of Ikata nuclear plant**

<http://mainichi.jp/english/english/perspectives/news/20151022p2a00m0na026000c.html>

Economy, Trade and Industry Minister Motoo Hayashi recently toured the No. 3 reactor at Shikoku Electric Power Co.'s Ikata Nuclear Power Plant in Ehime Prefecture, which has passed safety screenings by the Nuclear Regulation Authority (NRA). The minister then met with Ehime Gov. Tokihiro Nakamura and Mayor Kazuhiko Yamashita of the town of Ikata, which hosts the nuclear plant, and sought their understanding on reactivation of the reactor. The mayor is expected to agree to the central government's plan at an early date and the governor is to make a final judgment on the matter.

**The Ikata Municipal Assembly and Ehime Prefectural Assembly have already agreed to restart the reactor. If the governor gives the green light, procedures for gaining consensus on the resumption of nuclear power generation at the local level will come to a close.**

Nevertheless, evacuation plans for a nuclear accident remain insufficient. There is growing concern among many local residents about safety measures, and many oppose restarting the reactor. In addition, the NRA's procedures for restarting the reactor are yet to be completed. The steps include approval of a construction plan based on safety inspection results. Given the lack of preparation, Gov. Nakamura should not agree to the reactivation plan.

**Inadequacy in evacuation measures is a common challenge faced by Kyushu Electric Power Co.'s No. 1 and 2 reactors at the Sendai nuclear plant** in Kagoshima Prefecture, which were reactivated recently.

The national government has failed to draw a road map to lower dependence on nuclear power despite promising to do all it can in this respect. Serious questions must be raised over the clear move by the government of Prime Minister Shinzo Abe to return to nuclear power by **reactivating idled reactors when the safety of local residents has yet to be fully ensured.**

The Ikata plant is located at the base of the Sadamisaki Peninsula, which stretches from the island of Shikoku toward Kyushu, and about 5,000 people live in the western part of the peninsula. According to the evacuation plan drawn up by the Ehime Prefectural Government and other entities, in the event of a nuclear accident at the Ikata plant, those who live on the west side of the peninsula would evacuate east of the plant before radioactive materials were discharged into the air. If evacuation routes over land could

not be secured due to an earthquake or other disasters, the residents would instead flee to Oita Prefecture in Kyushu by sea. And if evacuation routes by land or air fail due to weather conditions such as a storm, the residents would be ordered to stay indoors.

The government's nuclear accident prevention committee approved of this evacuation plan earlier this month, stating that it is "concrete and reasonable." However, there are just four shelters for radiation protection in the area, and together they can accommodate only about 470 people. It is also questionable whether transportation by sea and other routes can be secured smoothly.

It's not just locals on the Sadamisaki Peninsula who are worried about evacuation plans in the event of a nuclear disaster. When the cities of Seiyo and Uwajima in Ehime Prefecture, both located within 30 kilometers of the Ikata plant, surveyed the heads of neighborhood associations and city assembly members who attended information sessions for local residents on the restart of the nuclear plant, a majority of respondents were against the plan to reactivate the plant's reactors.

Ehime Gov. Nakamura has repeatedly asked the national government to take final responsibility if a severe nuclear accident such as the one at the Fukushima No. 1 Nuclear Power Plant occurs. Nakamura appreciated comments made during a nuclear accident prevention panel meeting by Prime Minister Abe, who said that it is the national government's important duty to protect the lives of people and their properties in the event of a nuclear accident, and that the government will act responsibly to handle the situation in such a case.

**It is only natural for the national government to be held accountable for a nuclear disaster, however, and a prime minister acknowledging such responsibility does not change the fact that the local governments hosting and surrounding nuclear stations would be the ones to stand at the forefront when an accident occurs.**

The central government plans to hold a comprehensive nuclear disaster drill at the Ikata plant in November. The Yamaguchi and Oita prefectural governments will join the exercise since some parts of Yamaguchi Prefecture fall within the 30-kilometer zone around the plant, and Oita Prefecture will accommodate nuclear evacuees. Gov. Nakamura should take the outcome of the exercise into consideration when deciding to restart the reactor.

**We shall never forget the lesson from the Fukushima meltdowns -- that a severe nuclear accident that puts local residents in danger could occur at any time.**

## **Nothing is more important than thorough safety**

### **VOX POPULI: Lessons from Chernobyl: Put safety first in cleaning up Fukushima disaster**

<http://ajw.asahi.com/article/views/vox/AJ201510220027>





The No. 3 reactor at the Fukushima No. 1 nuclear power plant was damaged by an explosion in March 2011. (Provided by Tokyo Electric Power Co.)

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Belarusian journalist Svetlana Alexievich, the recipient of this year's Nobel Prize in Literature, is the author of "Voices from Chernobyl: The Oral History of a Nuclear Disaster."

First published in Russian in 1997, it consists of monologues by her interview subjects.

I decided to read a Japanese translation of this book.

My heart went out to a widow whose account begins, "I was very happy until recently." Her husband, a scaffolder, stood nearly 2 meters tall and weighed 90 kilograms. "Who could kill a man like that?"

But he worked at the crippled Chernobyl plant six months after the nuclear disaster and died as a result of radiation exposure. He was 45. "Who took my husband away from me?"

The stark truth, as recounted by this widow and other eyewitnesses, weighs heavily in my heart.

In the book, Alexievich also "interviews" herself. Her monologue goes: "After Chernobyl, we are living in a different world. The world we had before Chernobyl no longer exists. But people don't want to think about this ... People want to just forget, convincing themselves it's something that happened in the past."

Alexievich concludes, "I am chronicling the future." The fact that she wrote this more than 10 years before the Fukushima nuclear disaster indicates the extraordinary depth of her insight, which is a bit unnerving, too.

At Fukushima, the daunting task of dismantling the crippled nuclear reactors continues. On Oct. 20, a welder who developed leukemia became the first post-disaster worker at the plant to be awarded worker's compensation.

It has been four and a half years since the disaster. We should all ask ourselves this question: Have we already forgotten about the desperate struggle still going on at the site of the nuclear power plant, thinking that it's someone else's responsibility?

The government is set on restarting nuclear reactors, so it wants to let the Fukushima disaster fall into oblivion, the sooner the better.

There can be no simple comparison of Chernobyl to Fukushima, but the last thing I want is for Fukushima cleanup workers and their families to go through the sort of anguish experienced by the widow in Alexievich's book.

**Nothing is more important than thorough safety measures and genuine respect for the humanity of every worker.**

Vox Populi, Vox Dei is a popular daily column that takes up a wide range of topics, including culture, arts and social trends and developments. Written by veteran Asahi Shimbun writers, the column provides useful perspectives on and insights into contemporary Japan and its culture.

October 26, 2015

## Priority on safety?

### **Suga: Safety important in restart of plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20151026\\_26.html](http://www3.nhk.or.jp/nhkworld/english/news/20151026_26.html)

Chief Cabinet Secretary Yoshihide Suga says it is significant that the Governor of Ehime Prefecture has agreed to the restart of the No. 3 reactor at the Ikata nuclear power plant in his prefecture.

Suga said it is very important that the operator of the plant, Shikoku Electric Power Company, place top priority on safety in accordance with legal procedures such as the government's approval and inspections.

He added the government expects the Nuclear Regulation Authority will carry out its procedures rigorously and smoothly.

## Safety (Ikata plant)

### **Ehime governor urges Ikata nuke plant operator to enhance safety measures**

<http://mainichi.jp/graph/2015/10/26/20151026p2a00m0na022000c/003.html>

MATSUYAMA, Ehime -- Gov. Tokihiro Nakamura handed a nine-point request to Shikoku Electric Power Co. President Hayato Saeki at the former's office on Oct. 26, urging the utility to enhance safety measures in restarting the No. 3 reactor at the Ikata nuclear power plant.

The governor announced his approval for the reactivation of the No. 3 reactor at the Ikata plant in Ikata, Ehime Prefecture, the same day, amid angry protests by anti-nuclear groups near the prefectural government office, who said that procedures by local authorities were carried forward on the premise that the reactor would be restarted regardless.

President Saeki was seen standing still as he waited for the governor at the reception room of the prefectural government office. When the governor entered the room at around 9:30 a.m., a strained Saeki bowed twice, and the two sat down amid camera flashes.

"Today, as governor of Ehime Prefecture, I decided to accept advance consultations (over the reactivation) after making a comprehensive judgment based on the national government's views, Shikoku Electric Power Co.'s approach, and discussions among locals," Gov. Nakamura said.

In response, President Saeki said, "I express my sincere gratitude for your acceptance of advance consultations over the No. 3 reactor at the Ikata plant today. I will make sure that all staff in our nuclear power division and myself will firmly take the nine-point request to heart and observe and implement the measures with absolute certainty."

The meeting ended in around 10 minutes.

At a press conference following the meeting, Gov. Nakamura explained the process leading up to his approval of the reactor's restart. Using panels, the governor said, "I managed to make every request imaginable to the national government and Shikoku Electric Power Co." Asked if he would stake his own post in the event a severe nuclear accident occurs, Nakamura replied, "Of course."

In front of the prefectural government building, about 40 people staged a protest against the reactivation for about 1 1/2 hours from around 8 a.m., urging Gov. Nakamura not to accept the reactor's restart.

"The governor had kept saying he was undecided over a decision on reactivation, but in fact he considered no alternatives," said Tsukasa Wada, 63, deputy secretary-general of the citizens group "Ikata genpatsumo tomeru kai" (Association to stop Ikata nuclear plant) based in Matsuyama.

"Even if the governor gives consent to reactor restarts, I want to continue my protest and see the decision overturned," said Yuri Gekyo, 66, a member of Green Citizens Network Kochi, who joined the protest after leaving her home in the city of Kochi in neighboring Kochi Prefecture at 5 a.m.

Meanwhile, Ikata Mayor Kazuhiko Yamashita met Shikoku Electric Power Co. Executive Vice President and Nuclear Power Division Manager Kazutaka Kakinoki at the Ikata Municipal Office, and handed him written approval after demanding thorough implementation of measures to prevent nuclear accidents. "We will continue tireless efforts to ensure safety," Kakinoki said.

Following the meeting, Mayor Yamashita told reporters, "It was a tough decision. I will give instructions to Shikoku Electric Power Co. so that there will be no accident like the Fukushima No. 1 nuclear plant disaster."

In the town of Ikata, residents showed mixed reactions to the governor's approval of reactivation. "There are no jobs available in this town, and the approval for reactivation is good news especially for young people. I want the nuclear plant to be operated carefully so that there will be no accidents," said a 72-year-old proprietress of a private inn.

Mitsuko Isozaki, a 70-year-old housewife, said, "There's no guarantee a serious accident like the Fukushima disaster won't happen. It is regrettable that the governor has given consent to reactivation."

## Steel wall completed

### Walls to halt tainted groundwater from flowing into sea completed at Fukushima plant

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201510260048>

Tokyo Electric Power Co. announced Oct. 26 that the construction of seaside walls to block radiation-contaminated groundwater from seeping into the sea has been completed at the crippled Fukushima No. 1 nuclear power plant.

The walls, comprising numerous cylindrical steel pipes, were installed at a 780 meter-long stretch along the plant's coastal embankment near the damaged No. 1 to No. 4 reactor buildings.

TEPCO officials said the underground walls will reduce the daily flow of contaminated groundwater into the sea from the previous estimated 400 tons to 10 tons.

However, they said it will take a month or two to confirm the effectiveness of the barriers.

The seaside walls are one of the three pillars of TEPCO's efforts to deal with tainted groundwater accumulating at the plant.

The other projects are a plan to treat groundwater pumped from subdrain wells around the reactor buildings and release it into the sea and a frozen soil wall being constructed to divert untainted groundwater away from the damaged reactor buildings and into the ocean.

### Steel barrier completed at Fukushima plant

[http://www3.nhk.or.jp/nhkworld/english/news/20151026\\_29.html](http://www3.nhk.or.jp/nhkworld/english/news/20151026_29.html)

The operator of the Fukushima Daiichi nuclear plant has completed construction of a steel piling wall along the plant's coastal embankment. It is **a significant step toward blocking radioactive groundwater from seeping into the sea** more than 4 years after the nuclear accident.

The wall made of 600 steel pipe sheet-piles is 780 meters long and 30 meters deep. Tokyo Electric Power Company said workers on Monday closed the final gaps in the barrier with cement.

TEPCO started building the wall in 2012, one year after the accident.

Its purpose is to block the daily flow of 400 tons of groundwater into the sea.

Some of the groundwater passes by the damaged reactor facilities, where it gets contaminated and becomes a source for sea contamination.

To prevent the groundwater from accumulating inside the wall and overflowing, TEPCO will pump it up



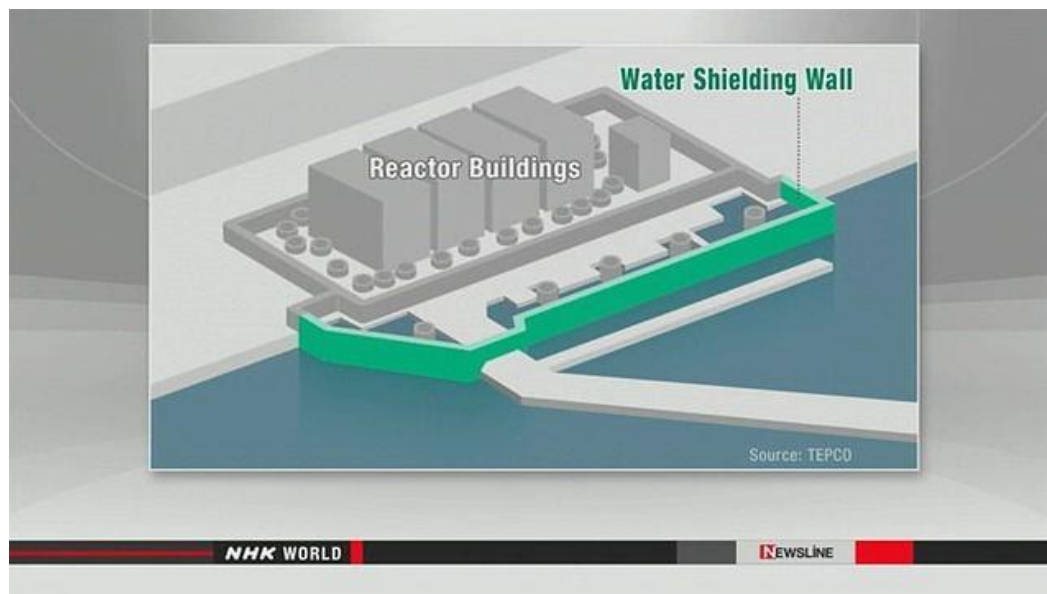
and remove radioactive materials before releasing it into the sea.

The operator expects the steel wall to cut from the current 400 tons to around 10 tons the daily seepage of groundwater into the sea.

TEPCO says it will monitor groundwater levels and check radioactive substances in the sea to know whether the wall is working as planned.

### **Wall expected to reduce radioactivity at sea**

[http://www3.nhk.or.jp/nhkworld/english/news/20151026\\_15.html](http://www3.nhk.or.jp/nhkworld/english/news/20151026_15.html)



The operator of the crippled Fukushima Daiichi plant has spent more than 3 years trying to build a wall that would reduce the release of radioactive materials into the sea. The underground wall is located along the seaward side of the facility.

Difficulty in controlling groundwater, as well as strong opposition from local fishermen, caused the delay.

Tokyo Electric Power Company began construction of the 30 meter-deep and nearly 800 meter-long impermeable wall in May 2012, about a year after the nuclear accident. It aims to prevent groundwater that runs below the plant from seeping into the sea.

TEPCO also had to come up with a plan to pump up groundwater that gathered within the walls and decontaminate it before releasing it into the sea.

Otherwise, the contaminated groundwater would eventually flow over the walls into the sea.

Local fishermen were anxious about the releasing of once-contaminated water into the sea. They also expressed mistrust over the operator's water clean-up measures.

After long negotiations, the fishermen agreed to the plan in August this year, allowing the wall to approach completion.

Groundwater has been a major challenge for the operator as it continues to pollute the sea.

The operator says the wall will reduce the amount of cesium and strontium in the groundwater flowing into the sea by one-fortieth, and tritium by one-fifteenth.

The levels of cesium 137 inside the plant's port are currently around 10 becquerels at the highest, and several becquerels at the sea outside it. The operator will monitor the levels of the substances in the sea water to confirm the effectiveness of the wall.

Immediately after the 2011 accident, radioactive substances from nuclear fuel and highly-contaminated water that was used to cool reactors were major pollutants for the sea. Levels of cesium 137 rose to as high as several million becquerels per liter at the sea next to the plant. They dropped dramatically after one year.

October 27, 2015

## "Disturbingly rash decisions"

### **EDITORIAL: Local leaders act rashly in approving restart of Ikata nuclear plant**

<http://ajw.asahi.com/article/views/editorial/AJ201510270042>

Ehime Governor Tokihiro Nakamura and Ikata Mayor Kazuhiko Yamashita made disturbingly rash decisions when they green-lighted Shikoku Electric Power Co.'s plan to resume operations at its Ikata nuclear power plant in Ikata, Ehime Prefecture.

They cannot claim to have fulfilled their responsibilities as the chiefs of local governments that host a nuclear power plant.

This is the second case of local government approval of a restart of an offline nuclear reactor since stricter nuclear safety guidelines were introduced following the 2011 accident at the Fukushima No. 1 nuclear power plant.

The No. 1 and No. 2 reactors of the Sendai nuclear power plant in Kagoshima Prefecture were the first to go back online under the tighter regulations.

Nakamura has said he made the decision because the three conditions he had set for supporting the plan had been met: the central government's proper way of thinking about safety; Shikoku Electric Power's proper approach to ensuring safety; and understanding by the local communities concerned.

By the central government's proper thinking, he mainly meant the Abe administration's promise that the prime minister and other top government officials would take responsibility to deal with the situation if an accident occurs. By the electric utility's proper approach, he meant that the company had taken more safety measures than required by the new regulatory standards.

**If a serious accident happens, however, the local governments concerned have to bear the brunt of ensuring the safety of local residents.**

A plan to respond to serious nuclear accidents by smoothly evacuating local residents without causing them to be exposed to radiation is the "last wall" in the architecture of the nuclear safety system. Developing such a plan is one of the obligations placed on the local governments of areas around nuclear power plants.

Governor Nakamura's remarks do not signal his strong commitment to carrying out his heavy responsibility for ensuring the safety of local residents.

**It has been pointed out that the evacuation plans for accidents at the Ikata nuclear plant, located at the root of the Sata Misaki Peninsula, are flawed.** There is also **strong opposition among local residents** to the proposed resumption of operations at the plant.

The governor has effectively shuffled off his responsibility by approving the plan to restart the No. 3 reactor at the plant on grounds that he had been reassured by the attitudes of the central government and the utility, which have been keen to bring the reactor back online.

In early November, the central government will conduct a general nuclear emergency drill in the Ikata area. It will be an important opportunity to test the effectiveness of the evacuation plans developed by the prefecture and municipalities around the nuclear plant. **We do not understand why the governor can give the go-ahead to the reactor restart before seeing the results of the scheduled drill.**

In an Oct. 26 news conference, Nakamura admitted that nuclear power plants are "not absolutely safe." But he argued that the only option available is to "confront (the reality of nuclear power generation) while implementing safety measures based on the latest scientific knowledge until alternative power sources are found."

Even so, why has he decided to approve the reactor restart so quickly? He should have had more opportunities to discuss the issue with a broader range of people in the prefecture before making the final decision.

A local government's right to consent to the nuclear power plant operator's plan to restart a reactor is based on its safety agreement with the utility.

The original purpose of such an agreement is to ease anxiety among local residents by allowing the local government to play an active role in ensuring their safety instead of leaving the issue entirely in the hands of the central government and the utility.

But the Ikata municipal assembly held sessions of a special committee to discuss the issue of whether to approve the resumption of the reactor's operation **mostly behind closed doors.**

The Ehime prefectural government failed to hold any discussion meeting for the governor and other policymakers to hear the voices of local residents.

**These facts argue against any claim that the local governments addressed safety concerns within the local communities in a sincere manner.**

Now, the focus of attention will shift to Kansai Electric Power Co.'s plan to restart its Takahama nuclear power plant in Fukui Prefecture, which has already cleared the safety inspection by the Nuclear Regulation Authority.

Meanwhile, the nuclear safety watchdog's inspection of Kyushu Electric Power Co.'s Genkai nuclear power plant in Saga Prefecture is in the final stage.

**There is no need for local governments to make hasty decisions to approve reactor restarts. Before making such decisions, they should first ensure that they have done everything they can to protect local residents.**

October 28, 2015

## **Atomic Energy Agency unfit to operate Monju**

### **Nuclear authority says Monju currently inoperable**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear regulatory body says the country's prototype fast-breeder reactor is currently inoperable **due to safety concerns.**

The Nuclear Regulation Authority ordered the Japan Atomic Energy Agency 2 years ago not to resume test-runs of its Monju reactor. This followed revelations of a large number of safety oversight issues with the fast-breeder reactor, which is in Fukui Prefecture, central Japan.

The problems with oversight continued even while the reactor was offline. Regulators last week asked senior officials of the education and science ministry to explain how they were supervising Monju's operator.

At a meeting of the regulatory authority on Wednesday, **Satoru Tanaka said the Atomic Energy Agency seems to be unfit to operate the Monju. He said the science ministry should appoint a new operator.**

The authority's Chairman Shunichi Tanaka said it appears to be impossible to put the Monju into operation, given the safety problems.

Regulators will question the operator's president Toshio Kodama on Monday.

November 2, 2015

## **Plant makes its own rule for temporary storage of radioactive materials**

### **Possible violation in radioactive waste storage**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's Nuclear Regulation Authority secretariat has found the operator of a uranium enrichment plant in Aomori Prefecture stored radioactive waste in a location that violated safety regulations. The plant

enriches uranium for nuclear power generation.

The Secretariat of the NRA is expected to ask Japan Nuclear Fuel Limited to remedy the situation.

The secretariat says the violation was discovered in August during an inspection of the plant in northeastern Japan.

It says **the operator has been storing low-level radioactive waste temporarily in a room near equipment used to produce enriched uranium.** The secretariat says the location is in violation of safety regulations.

The operator later moves the waste to a location that meets safety regulations.

But the secretariat says the temporary storage place is in violation of regulations. It is expected to ask the operator to correct the situation.

**Officials at Japan Nuclear Fuel Limited say the plant made its own rules for temporary storage. They say there have been no leaks of radioactive substances.**

The officials say they will store the waste in a proper way in the future.

November 4, 2015

## Monju: JAEA "unfit for the job"

### Nuclear regulator urges new Monju reactor operator to enhance safety

<http://www.japantimes.co.jp/news/2015/11/04/national/nuclear-regulator-urges-new-monju-reactor-operator-enhance-safety/>

Kyodo

Nuclear regulators decided Wednesday to urge the science minister to pick a new entity to run a trouble-prone prototype fast-breeder reactor, as they see little progress in safety management operations under the current operator.

The Nuclear Regulation Authority (NRA) concluded at a meeting open to the public that it is inappropriate to continue having the government-backed Japan Atomic Energy Agency (JAEA) manage the Monju reactor in Fukui Prefecture.

The regulatory body will recommend that Hiroshi Hase, the minister of education, culture, sports, science and technology, appoint a new operator to bolster the reactor's safety management. It is the first such action by the NRA since it was set up in September 2012 after the nation tightened its nuclear safety policy following the Fukushima disaster in 2011.

The nuclear watchdog will call for the minister to consider how the safety of the reactor can be guaranteed and also a possible option to close it if the minister is not able to find a replacement.

The potential closure of the reactor could lead to a drastic review of the nuclear policy the government has pursued for decades, given that the majority of the public remains against nuclear restarts following the Fukushima crisis.

The government has been looking to recycle fuel used at nuclear power plants by reprocessing it into mixed-oxide fuel, to be used again both at fast-breeder reactors — which are designed to produce more plutonium than they consume — and at many light-water reactors running in resource-scarce Japan. The fast-breeder reactor has experienced a series of safety problems over the years following a major fire in 1995 caused by a sodium leak.

The JAEA, the current operator, failed to conduct an inspection of a massive number of devices at the reactor in 2012. That was followed by the discovery that dozens of monitoring cameras were broken during a safety inspection last year, as well as the more recent leakage of radioactive liquid waste after ignoring an alarm for more than a year.

The NRA's decision comes after a meeting with an official in charge of the reactor at the science ministry last month, and also with JAEA President Toshio Kodama on Monday to hear ideas on what steps the organization should take to enhance its safety operations.

## **NRA to call for replacing Monju operator**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Japan's nuclear regulator is set to call on science minister Hirosi Hase to replace the operator of the country's Monju prototype fast breeder reactor.

The Nuclear Regulation Authority made the decision at a meeting on Wednesday, based on its view that the current operator, the Japan Atomic Energy Agency, is unfit for the job. The NRA says the operator of the reactor in Fukui Prefecture has failed to improve its safety.

The authority also plans to ask Hase to fundamentally review the reactor's status and consider scrapping the facility if a new operator cannot be found. It wants the minister to name an alternate operator within about 6 months.

NRA Chairman Shunichi Tanaka said mere reorganization would not solve the operator's problems, due to the agency's repeated misconduct over the past 20 years.

The regulator ordered the agency 2 years ago not to conduct test runs at Monju after many safety oversight problems surfaced. New problems with its safety management were found even after the reactor went offline.

The NRA is authorized by law to offer unbinding recommendations to the heads of government ministries and agencies to ensure safe use of nuclear power.

The authority's decision to issue such a recommendation is its first since it was established 3 years ago.

## Fukushima at Pugwash Conference

### Pugwash Conference discusses risk of peaceful use of nuclear energy

<http://mainichi.jp/english/english/newsselect/news/20151104p2a00m0na010000c.html>

NAGASAKI -- A special session focusing on the risk of peaceful use of atomic energy was held here as part of the 61st Pugwash Conference on Science and World Affairs on Nov. 3, where participants discussed the Fukushima nuclear disaster and the role of scientists.

**Kiyoshi Kurokawa**, former chairman of the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission, said about the disaster at the Fukushima No. 1 nuclear plant operated by Tokyo Electric Power Co., "The accident occurred against the backdrop of closed and non-transparent bureaucratic and corporate culture, among other factors."

In order to prevent a recurrence of such a disaster, "**We must think about nuclear energy as responsible citizens, not as individuals belonging to organizations**," he said.

In a lecture delivered during the conference, Osamu Shimomura, a 2008 Nobel Prize in Chemistry laureate, recounted his experience of the Aug. 9, 1945 atomic bombing of Nagasaki and said, "Everything derives from wars. I hope that we can live in a world without wars or nuclear weapons."

## Time for "honorable retreat" from Tokyo Olympics

Let's call the whole thing off: The former Japanese ambassador to Switzerland, Mitsuhei Murata, recently suggested that Japan should stage an 'honorable retreat' from hosting the 2020 Olympics due to the unpredictable situation at the crippled Fukushima No. 1 nuclear power plant. | KYODO

Voices | HOTLINE TO NAGATACHO

### Time has come for an 'honorable retreat' from Tokyo 2020 over Fukushima

<http://www.japantimes.co.jp/community/2015/11/04/voices/time-come-honorable-retreat-tokyo-2020-fukushima/>

Dear Olympics minister Toshiaki Endo,

Let me begin this message by offering you my sincerest condolences. Condolences for what? For the death of the belief that a trouble-free 2020 Tokyo Olympics would serve to showcase Japan's economic revival. Up to this point, the exact opposite has been the case, due to the scrapping of plans for a very expensive new National Stadium, the scuttling of the Olympic logo amid charges of plagiarism and newspaper headlines alleging, for example, that "Japan's Olympics fiascoes point to outmoded, opaque decision-making." Even more recently, Japan sports minister Hakubun Shimomura offered to resign over the Olympic stadium row.

Among these developments, the charge alleging “outmoded, opaque decision-making” is perhaps the most troubling of all, because it suggests that both of the major setbacks the 2020 Olympics has encountered are systemic in nature, not merely one-off phenomena. If correct, this indicates that similar setbacks are likely to occur in the future. But how many setbacks can the 2020 Olympics endure?

At this point it may be apt to recall the warning of 13th-century Zen master Dogen: “If there is the slightest difference in the beginning, the result will be a distance greater than heaven is from Earth.”

One lesson to be learned from Dogen’s words is that in order to understand the mess you are in now, you should reflect on how you got into it in the first place. When this is done, the “beginning” becomes clear, i.e., Prime Minister Shinzo Abe’s 2013 statement to the International Olympic Committee that the situation at the crippled Fukushima No. 1 nuclear plant was “under control.” The prime minister went on to tell the Diet, “The effect of radioactive substances in the nearby waters is blocked within 0.3 sq. km of the plant’s harbor.”

One needs only to look at recent stories describing the torrential downpours in the Fukushima area to know that this claim, if it were ever true, is clearly no longer valid. Even Tepco stated: “On Sept. 9 and 11, due to typhoon No. 18 (Eta), heavy rain caused Fukushima No. 1 drainage rainwater to overflow to the sea.” This is not to mention the high probability that relatively decontaminated areas have been contaminated once again by the heavy rains carrying radioactive particles lodged in the nearby mountains down onto the plains. Nor does it take into account that no one knows the location or condition of the melted fuel in reactors 1, 2 and 3.

Unfortunately, Zen master Dogen didn’t explain what to do when you find yourself in a spot where heaven is already far removed from Earth — or the truth, in this instance. Fortunately, the former Japanese ambassador to Switzerland, Mitsuhei Murata, recently proposed an eminently reasonable solution. It is time, he says, for Japan to stage an “honorable retreat” from hosting the 2020 Olympics while there is still time to select and prepare an alternative site.

In an article in the September issue of *Gekkan Nippon*, Murata buttressed his proposal by pointing out another misstatement in Abe’s IOC testimony, namely, “(Fukushima) has never done and will never do any damage to Tokyo.” In response, Murata pointed to a number of incidents showing that Tokyo was affected by Fukushima radioactive fallout, including the discovery on March 23, 2011, that water from the purification plant in the Kanemachi district of Tokyo contained more than 200 becquerels per liter of radioactive iodine, double the recommended limit for young infants stipulated in the Food Sanitation Act. Murata’s major concern, however, was not about the past but the present and future. He noted the danger still posed by large numbers of spent fuel rods suspended in spent fuel pools in reactors 1, 2 and 3. Unlike the spent fuel rods in reactor building 4 successfully removed by the end of 2014, the remaining rods can’t be removed from the damaged reactor buildings due to the high levels of radioactivity surrounding these reactors, all three of which suffered meltdowns.

Murata’s gravest concern is a number of troubling indications of recurring criticality in one or more of the reactors at Fukushima No. 1. For example, he notes that in December 2014, both radioactive iodine-131 and tellurium-132 were reported as having been detected in Takasaki city, Gunma Prefecture. Given the short half-lives of these radioactive particles, their presence could not be the result of the original meltdowns at Fukushima.

Murata is not opposed to the Tokyo Olympic Games per se, but finds them a major distraction to what needs to be done immediately — namely, gathering the best minds and expertise from around the world and, with the full support of the Japanese government, doing everything humanly possible to bring Fukushima No. 1 truly “under control.” This will help to ensure the Pacific Ocean is no longer used as an



open sewer for Fukushima-produced radiation, and also address the ongoing pain and distress of the residents of Fukushima Prefecture and beyond.

As Murata noted in the conclusion of his article, “Heaven and Earth will not long countenance immoral conduct.” Recognizing this, Minister Endo, will you join the call for an “honorable retreat”?

BRIAN VICTORIA

Kyoto

November 5, 2015

## Tsuruga: Safe to restart?

### Japan Atomic Power pushes for Tsuruga reactor restart despite fault warning

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201511050054](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201511050054)

Japan Atomic Power Co. on Nov. 5 applied for a screening of whether its Tsuruga plant reactor meets safety regulations put in place after the Fukushima nuclear disaster.

But getting the green light from the Nuclear Regulation Authority will prove a difficult process.

**The company must present evidence to the NRA that will invalidate the findings of two panels of experts. Their separate reports concluded that a seismic fault line running beneath the power station's No. 2 reactor building in Fukui Prefecture is probably active.**

Japan Atomic Power has pledged to provide evidence to the contrary during the screening process.

The NRA has said that it will pay attention to the panels' reports as “significant findings” when it examines the condition of the reactor.

The regulations, which came into force in 2013, prohibit key facilities such as reactor buildings from being located directly above an active fault line.

But **current arrangements allow electric power companies to apply for an NRA screening regardless of the panels' assessments.**

Japan Atomic Power was established in 1957 to lead the nuclear power development in Japan, with regional electric utilities forming the bulk of its shareholders.

The No. 2 reactor, with an output of 1.16 gigawatts, began commercial operations in 1987.

Of Japan's fleet of 43 reactors, two at Kyushu Electric Power Co.'s Sendai nuclear power plant in Kagoshima Prefecture have gone back online after clearing the new regulation.

## Steel wall seems to be effective

### TEPCO: Steel barrier reducing radioactivity at sea

[http://www3.nhk.or.jp/nhkworld/english/news/20151106\\_02.html](http://www3.nhk.or.jp/nhkworld/english/news/20151106_02.html)

The operator of the crippled Fukushima Daiichi nuclear power plant says the steel piling wall it built along the plant's coastal side is **reducing the amount of radioactive material in sea water**.

Tokyo Electric Power Company completed the 780-meter-long and 30-meter-deep piling wall along an embankment in late October.

The wall is designed to prevent contaminated groundwater at the plant site from flowing into the nearby harbor and sea.

TEPCO measured the levels of radioactive substances in the sea water along the embankment to determine the barrier's effects.

It says the level of beta-ray-emitting materials fell to 32 becquerels per liter on average early this month from 150 becquerels in mid-September.

The level of radioactive cesium was down to 10 becquerels from 16.

The level of radioactive strontium was 1.9 becquerels shortly before completion of the barrier compared to 140 becquerels in mid-September.

The operator says it will continue to check the levels of radioactivity near the embankment for some time to further confirm the effects of the steel wall.

November 6, 2015

## Faulty radiation monitors in SW Japan

### Solar-powered radiation monitor problem resolved

[http://www3.nhk.or.jp/nhkworld/english/news/20151106\\_23.html](http://www3.nhk.or.jp/nhkworld/english/news/20151106_23.html)

The Board of Audit says it has found that solar-powered radiation monitors in southwestern Japan failed to work consistently.

The board on Friday reported its findings about the radiation monitoring posts, installed at 25 locations within 30 kilometers of the Sendai nuclear power plant in Satsumasendai City in Kagoshima Prefecture.

The monitoring equipment is designed to measure radiation levels in the atmosphere around the clock using electricity produced by photovoltaic generation. But it was found that the monitors did not function properly in bad weather or when they were placed in the shadow of trees.

The board pointed out that no radiation measurements were carried out over a period of 3,816 hours in the fiscal year that ended in March. Some of the devices failed to function for nearly 10 days a month.

The board reports that officials of Kagoshima Prefecture did not fully check the performance of the monitoring devices before they were ordered.

Officials with the prefecture said the problem was resolved by August and the monitors can now function around the clock using non-solar power as well.

A prefectural official in charge of nuclear safety says the prefectural office installed radiation monitors at 67 locations, and the problem only involved auxiliary equipment, so radiation measurements were not affected. However, the official said the prefectural office will take this as a lesson for the future.

The nuclear plant was offline when the monitoring posts were not working.

The prefecture installed the devices in 2012 using a government subsidy of more than 69 million yen, or about 565,000 dollars.



October 10, 2015

## **The Tokyo Olympics "belittle the Fukushima crisis"**

The Tokyo Olympic Games and the Fukushima Crisis

**Mitsuhei Murata**

**Executive Director, Japan Society for Global System and Ethics**

**Former Japanese Ambassador to Switzerland**

## **Preface**

**The lack of the sense of crisis over Fukushima is in stark contrast to the gravity of the crisis. Fukushima is now undeniably a global security issue.** The unstoppable contamination of the Pacific Ocean and the atmosphere is seriously menacing the West Coast of the United States. Japan should make utmost efforts to cope with the Fukushima crisis by retreating from the Tokyo Olympic Games that disseminate the false impression that Fukushima is under control.

## **Deteriorating situation in Fukushima**

Japan is laboring under the consequences of the Accident never before experienced by humanity. Four and half years after the 3.11 disaster, it has been shown that a severe nuclear accident cannot be brought under control by a single state. The Japanese government is bent on restarting nuclear reactors and exporting nuclear technology without clarifying the causes of the accident. The majority of the Japanese severely criticize this move as immoral and irresponsible. It is questioned if Japan is in possession of the governability and the capacity needed to cope with the impending crisis.

Units 1, 2 and 3 remain inaccessible because of lethal levels of radiation surrounding the buildings. Their containment vessels need a constant flow of nitrogen to maintain low levels of oxygen in order to prevent hydrogen explosions.

If the molten nuclear fuel rods are exposed through cracks to the atmosphere due to a mega earthquake or the liquidization of the site that causes the collapse or the inclination of a nuclear reactor, Japan's landmass would become uninhabitable to a large extent. The problem of workers on the site is very serious. The average number of daily workers is now more than 7,000. This requires numerically more than 2.5 million workers a year. Decommissioning of the reactors on the site will take decades. It makes one shudder.

The restart has taken place without clarifying where the responsibility lies for another accident and without establishing truly reliable systems for evacuating residents.

The whole of Japan is threatened by the worsening situation emanating from the molten fuel rods, suspected to be widely disseminating neutron and tritium radiation. Limitless steam observed at the site evokes the possibility of re-criticality at the site. The undeniable necessity for international verification of the suspected re-criticality at the site should bring about the indispensable international cooperation to cope effectively with the Accident.

The ongoing radioactive contamination of the sea with no prospect for a solution is dishonoring Japan, being criticized as harming the global environment. In spite of all this, attempts are shamefully being made to hide Fukushima. The Tokyo Olympic Games 2020 was decided with the false assurance that Fukushima had been brought under control.

## **The United States is menaced by the spreading contamination**

Recently, a serious typhoon hit eastern Japan creating flooding that has not occurred for at least 50 years. You can imagine the extraordinary amount of radioactive cesium, strontium, and other isotopes spread hundreds of miles from the nuclear catastrophe site yet to be cleaned up and now displaced by the flood into newly contaminated villages.

The consequences of the radioactive contamination of the Pacific Ocean from Japan to the West Coast of the United States are drawing increased attention. Some experts now estimate that the wave of radiation from Fukushima will be 10-times bigger than all of the radiation from the entire world's nuclear tests throughout history combined. There are reports stating that dangerous radiation levels have been detected in snows found in Texas, Colorado and Missouri, warning that the US, indeed, is going to face the severest consequences of the ongoing historic, and seemingly unstoppable, nuclear disaster.

The daily increasing contaminated water has been put in nearly 1000 hastily fabricated and often leaking storage tanks. Its total volume surpasses more than 600,000 tons and approaches the limitations possibly to end by being totally released into the sea.

The protection of the health of the residents of the US West Coast will soon become a central political issue for the Obama Administration. It cannot but awaken the whole world to the uncontrollable and spreading consequences of the Fukushima Accident.

## **The Tokyo Olympic Games belittle the Fukushima crisis**

It is undeniable that the Tokyo Olympic Games constitute serious impediments for coping with the consequences of the March 11 Disaster by raising the prices of construction materials and aggravating the serious labor shortage in the region.

My interview article was published in the magazine "Monthly Japan" (September). It is entitled "An honorable retreat from the Tokyo Olympic Games" and is given a central place. Reactions are noteworthy and expanding.

In my recent message addressed to Prime Minister Shinzo Abe, I suggested to him to cancel the Tokyo Olympic Games, announcing at the same time the candidature for 2028 or 2032 games.

The estimation of the total cost, 2 trillion yen according to the Organizing Committee, has shocked the public. More than 50 times less funding (34.5 billion yen) has been spent for coping with the contaminated water problem at Fukushima Daiichi!

**The Tokyo Olympic Games seems to be being utilized to divert attention from Fukushima and to give the impression to the world that Fukushima no longer poses a threat.** Shrewd observers point out that there is 'the front and the back' relationship between the Tokyo Olympic Games and nuclear reactors. The two are interrelated. The setback of the one will mean that of the other.

**The initial commitments of the Tokyo Olympic Games have now been all broken.** The original plan of the National Stadium has been cancelled. The emblem of the Tokyo Olympic Games, suspected of plagiarism, has been abandoned. The editorial of the Asahi News Paper dated 25 September 2015 expresses its amazement at the irresponsibility and the carelessness of the Organizing Committee. The IOC could disqualify Tokyo. Japan is now obliged to choose between an honorable retreat and a shameful disqualification. The future of the Olympic Games is at stake. It is as a believer in the spirit of the Olympic Games and the Olympic Movement that I am pleading for an honorable retreat, and this, in order for Japan to consecrate maximum efforts to control the Fukushima crisis.

see also these two articles from the Asahi Shimbun:

### **EDITORIAL: 2020 Tokyo Olympic organizing committee needs major reorganization**

<http://ajw.asahi.com/article/views/editorial/AJ201510050019>

Following a fresh start to design the new National Stadium, the effort to develop a new logo for the 2020 Tokyo Olympics and Paralympics has also been launched.

As a new team to carry out the mission, the Tokyo Games organizing committee has set up the Tokyo 2020 Emblems Selection Committee comprising figures in the sports and academic communities as well as art experts.

With an eye to announcing the official Olympic logo next spring, the new panel will decide by mid-October the requirements for accepting applications such as ages and qualifications along with the screening method.

As it established the emblem selection panel, the Tokyo Organizing Committee of the Olympic and Paralympic Games published the results of its postmortem on the logo debacle. At the request of designer Kenjiro Sano, the organizing committee decided on Sept. 1 against using his emblem design amid accusations of plagiarism.

Toshiro Muto, director general and chief executive officer of the organizing committee, and his two deputies have decided to voluntarily return part of their pay to take responsibility for flawed operations and supervision.

This is a review of the logo selection process made internally, not by independent outsiders. The findings of the inquiry nevertheless highlight the organizing committee's outrageous sloppiness and irresponsibility.

Unless the committee, which clearly lacks transparency, is transformed into a much improved organization, there remain concerns that similar problems will turn up again.

The report on the investigation fully acknowledges that the selection process was seriously flawed in all aspects, including the requirements for applications for the emblem competition, the selection of the members of the screening panel, the screening method and adjustments made to the original design.

At the beginning, the report argues that basic concepts for the emblem, such as its principal message, were not worked out sufficiently, with no clear idea given about what kind of emblem was suitable for the 2020 event.

Since the most basic ideas about the logo design were not thought out well, it was probably inevitable that the emblem thus selected would have to be scrapped.

This report on the internal probe into the selection process, however, is far from satisfactory. The original emblem design was modified twice in response to requests by some senior officials of the organizing committee. But the report offers no detailed explanation about how that occurred. It has yet to be made clear what kind of closed-door discussions were behind the modifications to the design, which had been picked through a public selection process based on an international competition. At a meeting of the organizing committee's councilors where the results of the review were reported, there were no references to the responsibility of Yoshiro Mori, the president, and other top committee officers for the emblem fiasco.

The fact that the committee is eschewing the crucial debate over who should be held accountable for the logo debacle--and the stadium snafu for that matter--raises serious doubts about whether it is a healthy organization.

The newly created emblem committee stresses its intention to ensure that the selection will be made through an open process.

"We will try to figure out an approach that gets many people involved in both the application and selection phases," said Ryohei Miyata, president of the Tokyo University of the Arts, who serves as chairman of the panel.

No matter how the selection committee is revamped, however, it is impossible to win public support for the selection process without a fundamental reform of the organizing committee itself, which supervises the project.

There is still a clear need for an exhaustive third-party investigation into what occurred. The committee should first make clear who are responsible for the blunder and then consider seriously its own reorganization to avoid making the same mistake.

### **Sports minister, blamed for Olympic debacle, to remain in Cabinet until reshuffle**

[http://ajw.asahi.com/article/behind\\_news/politics/AJ201509250081](http://ajw.asahi.com/article/behind_news/politics/AJ201509250081) (article dated September 25, 2015)

Sports minister Hakubun Shimomura took a pay cut for the fiasco over the new National Stadium for the 2020 Tokyo Olympics and will be replaced when Prime Minister Shinzo Abe reshuffles the Cabinet. Shimomura said at a news conference on Sept. 25 that he called Abe the previous evening to express his intention to step down.

However, Abe, an ideological soul mate of the conservative politician, asked Shimomura to remain at the post until the Cabinet reshuffle expected in early October. Shimomura said he agreed to that proposal. Shimomura said he decided to resign hours after a third-party committee released a report on Sept. 24 about the confusion over the construction of the new National Stadium, the main venue of the 2020 Summer Games in Tokyo. The initial design was scrapped amid public outrage after the expected construction costs ballooned to more than 250 billion yen (\$2.1 billion) from an initially envisaged 130 billion yen.

The report named Shimomura as one of those most responsible for the failed plan, saying he "could not create an appropriate organizational structure" to oversee the planning and construction of the stadium. Shimomura said he will return about 900,000 yen to central government coffers, a figure including six months' salary as minister of education, culture, sports, science and technology.



“Although there was no illegal act on my part, I felt I bore political responsibility for not being able to stand in the forefront of a national movement to build up momentum (for the Olympics),” Shimomura said at the Sept. 25 news conference. “I made the decision with the release of the report.”

Other top officials will also return part of their pay.

Shinichi Yamanaka, who stepped down on Aug. 4 as vice education minister, will return 10 percent of two months’ salary, while the same will be done by Ichiro Kono, the president of the Japan Sport Council, which is in charge of the project to build the stadium.

Kono will resign as president on Sept. 30 and be replaced by Kazumi Ohigashi, a former J.League chairman.

Kono was also singled out by the sports ministry’s third-party committee for failing to fulfill his responsibility of overseeing such a difficult and complicated project as building a new National Stadium. The report also criticized what it called a “top-heavy” decision-making process symbolized by an advisory panel to Kono that consisted of such individuals as former Prime Minister Yoshiro Mori, representatives of various sports organizations and heavyweights in the cultural sector.

The report said the panel transformed from a simple advisory panel to effectively the ultimate decision-making organ in the process behind the construction of the stadium.

(This article was compiled from reports by Atsushi Akutsu and Akio Harada.)

November 2, 2015

## **IAEA: Need for improved communication with public in emergency cases**

<http://www.nucnet.org/all-the-news/2015/11/02/conference-president-calls-for-iaea-to-develop-emergency-communications-material>

### ***IAEA Conference President Calls For Better Emergency Communications Material***

The International Atomic Energy Agency should develop communications material that can be used by the nuclear industry and governments for providing scientifically based information to the public on issues relating to nuclear or radiological emergencies, the president of the International Conference on Global Emergency Preparedness and Response said.

Ramzi Jammal, who is also executive vice-president and chief regulatory operations officer at the Canadian Nuclear Safety Commission, said the need for improved communication with the public was one of the key recommendations from the conference, held in Vienna last month.

He said the information should be developed in conjunction and consultation with the public and be written in simple and clear language to ensure that it is understood by the broadest audience.

Using a single reference document will ensure that “consistent and credible information” is being communicated worldwide, he said.

Over recent decades, experts have produced highly detailed criteria that are codified in national and international radiation protection standards, but these seem to have “impeded our ability to respond to simple questions from the public whom we are charged with protecting”, Mr Jammal said. “Not answering these questions would further reduce the credibility, not only of experts, but also of authorities and



organisations responsible for protecting the public.”

More specifically, participants at the conference noted that there is confusion arising from the misinterpretation and misuse of the 1 mSv/y dose limit. During the debate, experts expressed the need for a review of the reasoning behind and the validity of this dose limit.

Mr Jammal also called on IAEA member states to commit to reviewing and taking the necessary actions to address lessons arising from the assessment of emergency preparedness and the response to the Fukushima-Daiichi accident.

He called on contracting parties to the Convention on Nuclear Safety to report on the implementation of lessons learned. “Moreover, I recommend that all contracting parties use the peer review process of the convention to ensure continuous enhancement of emergency preparedness and response to nuclear and radiological emergencies,” he said.

Member states should consider harmonised emergency arrangements and regulatory reviews that seek to identify and resolve potential conflicts, Mr Jammal said. The establishment of a unified command system – onsite and offsite – and the conduct of joint exercises, would better coordinate safety and security aspects of the response.

He said the IAEA should continue to develop guidance on the termination of a nuclear or radiological emergency and the transition to recovery, which should include guidance for adapting and lifting protective actions.

During the conference, it was recognised that there is a need for “a holistic approach” when implementing a protection strategy. Challenges and issues were raised regarding the lack of guidance for the termination of a nuclear or radiological emergency and the transition to recovery, including remediation.

Mr Jammal said nuclear safety has been strengthened since the March 2011 Fukushima-Daiichi accident and while many observations and lessons learned have already been transformed into regulatory improvements, much remains to be done.

He said: “It is incumbent on regulators, operators, and national, international and intergovernmental organisations to implement these recommendations and to report on the progress made.”

He recommended that the IAEA organise another conference on emergency preparedness and response where member states can report on their implementation of the recommendations.

## Protecting Housing Subsidies for Evacuees

### Interview with Ken Sakamoto (Evacuate Fukushima)

<http://www.evacuate-fukushima.com/2015/11/ken-sakamoto-protecting-housing-subsidies-for-evacuees/>



坂本健 Ken Sakamoto and Tatsuyo Young – Courtesy of 坂本健

Nelson Surjon

In the light of the upcoming Tokyo Olympics and its bid to show the world that Japan has fully recovered from the triple disaster that hit Tohoku in 2011, including the ongoing nuclear crisis in Fukushima and beyond, Shinzo Abe and local governments have made it clear to tens of thousands of evacuees that it is time to go home. Japan claims that sufficient decontamination work has been concluded to return evacuees safely to their contaminated land. But most aren't buying into the many propaganda tactics by local governments and are reticent to go back, rightfully so. In order to speed up the return process, the government has adopted drastic measures, such as cutting all housing subsidies and other compensations to most evacuees, by year 2018, forcing evacuees to return.

Though poorly reported by the Japanese media, Fukushima has experienced an increasing resistance from residents on this issue and numerous citizens have organized into fierce and dedicated groups and NPOs to fight against these pressuring reforms. One of their most dedicated leader is Ken Sakamoto, which I have had the privilege to meet via social Networks and introduced to me by my dear friend and member of Evacuate Fukushima 福島の子供を守れ; Yukiko Young. Sakamoto san is an incredible human being and is fighting, body and soul, to protect the lives of children and residents in Fukushima.

Sakamoto san has accepted to interview with us and we have promised to him to SHARE the voices of Fukushima – otherwise silenced by an unwilling media body. So please, support him and the thousands of victims by reading this interview and to share aplenty. At the end of this, you will find links wherein you may donate money that will directly come in help of these victims. Many people have asked me how they could help in terms of donation, this is it!

November 6, 2015

## France fueling nuclear arms race in Asia

### How France is Fueling Japan and China's Nuclear 'Race'

<http://www.nationalinterest.org/feature/how-france-fueling-japan-china%E2%80%99s-nuclear-race-14271>

*France is helping to support industrial policies that make no economic sense and potentially threaten a nuclear arms race in Northeast Asia.*

by Victor Gilinski and Henry Sokolski

While the world is focused on Iran and nuclear proliferation in the Middle East, an accelerated round of nuclear plutonium production is about to get started in East Asia. **Areva, the French nuclear export firm, is desperate for business, and therefore is seeking to sell a large plutonium separation plant to China. It is simultaneously urging Japan to start commercial operation of its large plutonium recycling complex, despite the unfavorable impact this would have on efforts to rein in worldwide production of nuclear explosives.**

The Japanese newspaper *Asahi Shimbun* recently reported that after an October 5 meeting in Tokyo, “Prime Minister Shinzo Abe and his French counterpart Manuel Valls agreed to help ensure Japan maintains its longtime policy to recycle spent nuclear fuel . . .”

Innocent as this statement may sound, behind it is an effort by nuclear bureaucracies in the two countries to keep alive outdated industrial nuclear policies that make no economic sense and potentially threaten a nuclear arms race in Northeast Asia. **That “longtime” Japanese policy involves producing plutonium, many tons of it, for use as fuel. Plutonium, of course, is also used in nuclear weapons, and just a few**

**kilograms suffice for a warhead.** Not surprisingly, China and South Korea take a considerable interest in Japan's plutonium policy. Japan's example also threatens the worldwide effort to restrain the spread of nuclear weapons.

**Japan is on the verge of operating a large reprocessing plant at Rokkasho that is capable of separating eight tons of plutonium annually from used nuclear fuel. This \$20 billion plant was, from the beginning, a triumph of nuclear ideology over economics. The plutonium fuel it was supposed to produce for Japan's power reactors would cost several times as much as the uranium fuel it would displace.** After Japan's Fukushima accident and the subsequent closure of its nuclear reactors, only a small fraction of which will return to operation, the Rokkasho plant lost whatever plausibility it had. Japan already owns about thirty-five tons of plutonium separated and stored in France and Britain, and has nearly eleven tons on hand in Japan.

The public awareness of Rokkasho's unwarranted expense and possible weapon applications has put Japan's bureaucratically rigid nuclear establishment on the defensive. **The plant's operation, while still likely, is no longer assured—which is why France is rushing to “help ensure Japan maintains its longtime policy.”** France has been involved with Rokkasho through the Areva nuclear industrial group, and is currently negotiating with China to build a similar reprocessing plant there. A Japanese decision not to operate Rokkasho would reverberate throughout the tightly connected nuclear world, and might well cause China to rethink its reprocessing project. This would be a severe blow to **Areva, which is in deep financial trouble. Its latest reactor projects are ballooning in cost and encountering technical difficulties, and its reprocessing business is losing customers. It needs Japan to stick with its “longtime policy.”**

There is a larger dimension to the French-Japanese nuclear connection. The nuclear establishments in both countries embraced, early and powerfully, the original nuclear dream of using reprocessed plutonium to fuel a new generation of fast breeder reactors that would then take over the generation of electricity. (These would in principle consume all uranium fuel as opposed to current reactors that only use about one percent of it, and so would be a power source with an essentially infinite supply of fuel.) Both countries built prototype breeders but found a commercial shift to these advanced reactors to be technically and economically unrealistic. But both countries continue to cling to their original aspirations.

The French have also learned that **you don't need economic technology to make lots of money: you just need someone to pay for it. The Japanese played that role over the past few decades.** The nuclear authorities had promised the communities around Japan's power reactors that the radioactive-used fuel would be removed. The French were happy to accept it for reprocessing—for a steep price that included an up-front Japanese contribution to pay for building a French reprocessing plant. **Now, France is urging Japan to waste money on its own plant so that France can gain a profit in China. The trouble is that there is more than money at stake.**

However much Japan reiterates its Nonproliferation Treaty pledge to abjure nuclear weapons, and complies with IAEA inspections, **China worries about Japan's nuclear weapons potential.** If Japan goes forward with the Rokkasho operation when economic arguments are decidedly against it, China's concerns will multiply many times over. **Everyone is aware that if the plant were put to military use, it would be capable of producing more than a thousand bombs' worth of plutonium per year. In these circumstances, international inspections cannot provide a “timely” warning of diversion to military use.** Japan's argument, that plutonium drawn from power reactors is not useful for bombs,

conflicts with what weapon scientists say.

In any case, if Rokkasho enters commercial operation then China's reprocessing and fast breeder enthusiasts will likely get the green light from their government for a reprocessing contract with Areva. China's plan is to store plutonium fuel for a fast breeder prototype, but the project would also give China the option to rapidly increase the size of its nuclear arsenal, a point not lost on some Japanese strategists.

**In the wings is South Korea, which has been pressing the United States to allow it to reprocess plutonium in the US-ROK nuclear cooperation agreement. It sees itself as the equal of Japan and will not stand for being left behind.** We may well end up with a spiraling commitment to reprocessing and plutonium fuel in Northeast Asia. This would sharply reduce the margin between nuclear energy use and weapons in both Japan and Korea. And it would give respectability to adopting reprocessing in countries around the world with mixed motives.

**This is not the first time that French reprocessing threatened proliferation problems. In the 1970s, the U.S. government realized that French sales of reprocessing technology to Pakistan, South Korea and Taiwan had "path to a bomb" written all over them. The American government jumped in forcefully and managed to persuade France to stop all three deals.**

The United States insisted at that time that whatever the industrial arguments, international security should come first. President Gerald Ford stated in 1976 that plutonium should not be separated or used as a fuel—by any country—until we are confident "that the world community can effectively overcome the associated risks of proliferation." Surely we have not reached that point.

It is unsurprising that Japan's nuclear establishment cannot easily give up the course it has been on for many decades, and thus appeals for "understanding" of Japan's unique circumstances. But if nonproliferation standards are to work, they have to be common standards, applicable to all. **Japan needs to take into account that going ahead with Rokkasho will likely initiate an East Asian competition in plutonium stockpiling that will be difficult to control. The right decision is to put Rokkasho on hold. And France should reconsider the dangers of making separated plutonium more widely available. It should stop selling reprocessing technology and stop encouraging others to reprocess.**

*Victor Gilinsky is a former US Nuclear Regulatory Commissioner.*

*Henry Sokolski is executive director of The Nonproliferation Policy Education Center and author of Underestimated: Our Not So Peaceful Nuclear Future (2015).*

November 8, 2015

## Disaster training in Ehime (Ikata plant)

### Nuclear disaster drills under way in Ehime

[http://www3.nhk.or.jp/nhkworld/english/news/20151108\\_10.html](http://www3.nhk.or.jp/nhkworld/english/news/20151108_10.html)

Nearly 15,000 people are taking part in annual nuclear disaster drills at and around the Ikata power plant in western Japan's Ehime Prefecture. Its No.3 reactor could go back online as soon as March.

This year's 2-day version began on Sunday with the participation of locals and officials from more than 100 organizations.

The drills were held under a scenario in which the plant run by Shikoku Electric Power Company loses its reactor cooling function due to a major earthquake.

The prefecture set up a task force. Governor Tokihiro Nakamura instructed senior officials to fully prepare for such an accident.

Shikoku Electric employees checked how to respond at an emergency office built at the plant in preparation for the restart of the reactor. Last month, the prefecture and town hosting the Ikata plant gave the utility permission to put it back online.

Workers also tested a large pumping truck designed to pour water onto reactor containment vessels. They also maneuvered a robot developed to enter spaces with high radiation levels.

Staff at a nursing home about 10 kilometers from the plant practiced evacuating elderly residents in wheelchairs. Workers took the part of those with physical disabilities.

Officials will use the results of the drills to study the viability of an evacuation plan for communities near the plant.

## **Two days of disaster training begins at Ehime Prefecture's Ikata nuclear plant**

<http://www.japantimes.co.jp/news/2015/11/08/national/two-days-disaster-training-begins-ehime-prefectures-ikata-nuclear-plant/#.Vj9SLr8R-ot>

JJI

The government Sunday started a two-day comprehensive disaster drill at Shikoku Electric Power Co.'s Ikata nuclear power plant in Ehime Prefecture.

The drill, which started at 8:30 a.m., assumed that the plant's reactor-cooling functions were lost because of damage to its power sources from an earthquake measuring upper 6 on the Japanese seismic intensity scale of 7 and radioactive materials leaked outside the plant as a result.

While the No. 3 reactor at the plant is likely to be reactivated sometime at the beginning of next year at the earliest, securing evacuation routes is important.

This is the third disaster drill to be conducted by the government at one of the nation's nuclear plants since the triple reactor meltdown at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power station was crippled by a magnitude-9 earthquake and subsequent huge tsunami that struck part of the Tohoku region in March 2011.

The two-day drill is being participated in by officials of the Nuclear Regulation Authority, the Cabinet Office and the Defense Ministry, as well as about 13,000 residents living near the plant, including elementary and junior high school students.

As the nuclear power station is located in the town of Ikata, on the Sadamisaki Peninsula, one major challenge is ensuring some 5,000 people living on the peninsula can be evacuated safely in case of an accident at the plant.

In the drill, residents will be evacuated by bus. On Monday, a ferry and a support ship of the Maritime Self-Defense Force will be used to evacuate about 70 residents from the peninsula to nearby Oita Prefecture.

In July this year, the NRA concluded that the Ikata No. 3 reactor meets the country's new safety standards introduced in July 2013 following the Fukushima No. 1 plant accident.

Last month, local leaders, including Ehime Gov. Tokihiro Nakamura, gave their consent to the restart of the No. 3 unit.

## **Itaka evacuation plans inadequate, mayors say**

### **Mayors think evacuation plan is inadequate**

[http://www3.nhk.or.jp/nhkworld/english/news/20151108\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20151108_16.html)

An NHK survey shows local leaders are not satisfied with the evacuation plan for a possible accident at the Ikata nuclear power plant in Ehime Prefecture, western Japan.

NHK asked the mayors of the 18 municipalities in Oita Prefecture about the plan drawn up by Ehime officials. The nuclear plant sits on the tip of a peninsula on a narrow channel between the Shikoku and Kyushu regions.

Under the plan, residents of the peninsula would be evacuated to Oita by ship, and municipalities would provide food, shelter and medical care for the evacuees.

Twelve of the 18 mayors said the plan was not well thought out.

Eight said they wouldn't be able to accept evacuees if a nuclear accident and a huge earthquake occur at the same time.

Thirteen of the respondents said Ehime Prefecture and the plant's operator, Shikoku Electric Power Company, need to explain the safety measures and procedures for restarting the reactor.

Saiki Mayor Yasuyoshi Nishijima said his city is expected to suffer the worst damage in the prefecture from a massive quake. He argued that if a nuclear accident and a quake occur simultaneously, the city cannot deal with the evacuees. He said Oita Prefecture is likely to put priority on helping its residents, adding that he will discuss the matter with the other mayors.



November 9, 2015

## Major drills conducted but still lots of problems

### Major disaster drills finish at Ikata nuclear plant in Ehime

<http://www.japantimes.co.jp/news/2015/11/09/national/major-disaster-drills-finish-ikata-nuclear-plant-ehime/#.VkDCdL8R-ot>

Kyodo, Jiji

Residents of the town of Ikata, Ehime Prefecture, were evacuated Monday to Oita Prefecture as part of a drill in the event of a major disaster at the Shikoku Electric Power Co. nuclear power plant there.

The two-day drill, which began Sunday, was conducted under a scenario where the plant's reactor-cooling functions were lost after power sources were damaged in a massive earthquake. The scenario assumed that the quake, measuring upper 6 on the Japanese seismic intensity scale of 7, and the ensuing loss of cooling functions saw radioactive materials released outside the plant.

Currently offline, the plant's No. 3 reactor is likely to be reactivated next spring, but concerns about the safety of evacuation routes have been growing among the residents opposed to the restart.

At around 9 a.m., residents gathered at a public gymnasium where they were given potassium iodine pills to help prevent thyroid cancer and instructed on their use in the event of a nuclear disaster. They later underwent radiation checks and were transported by a ferry and a Maritime Self-Defense Force ship to the nearest port in Oita Prefecture, 14 km away.

Upon arrival, decontamination tents set up by Ground Self-Defense Force personnel awaited them.

Evacuees were then transported to shelters by buses with a police motorcycle escort.

At Ikata Junior High School, located about 4 km from the nuclear plant, about 130 students ran evacuation drills, covering their mouths with handkerchiefs or towels while being led by teachers to an adjacent gymnasium.

**The government-led drill was the third of its kind at one of the nation's 48 atomic plants and was one of the largest since the crisis** broke out at Tokyo Electric Power Co.'s Fukushima No. 1 station in March 2011.

Officials from the Nuclear Regulation Authority, the Cabinet Office and the Defense Ministry — as well as some 13,000 residents living near the plant — took part in the drill.

As part of the exercise, Prime Minister Shinzo Abe declared an emergency at around 3:30 p.m. Sunday.

Ehime Prefecture Gov. Tokihiro Nakamura, who was among the evacuees transported by the MSDF ship, thanked Oita Gov. Katsusada Hirose for his cooperation Monday evening.

Despite the government's push to fire up stalled nuclear power plants — the two reactors at the Sendai nuclear plant in Kagoshima Prefecture have recently been brought back online — **nuclear emergency drills have not been included in the nation's disaster response guidelines.**

**Such key drills have yet to be conducted at the Sendai plant.**

Municipalities, which since last year have been providing guidance on the use of potassium iodine pills used to prevent thyroid cancer, have also pointed out residents' limited awareness of nuclear dangers and their poor attendance at meetings discussing the pills.

The tablets, which in accordance with evacuation guidelines are to be distributed to people living within a 5-km radius of plants, can only be distributed together with guidance from medical staff, and thus only to those who attend such meetings.



More than 30 meetings have been held since August 2014. But as some residents have called the process troublesome, **as many as 30 percent — or 1,600 of 5,300 total residents who could be affected by a nuclear disaster — have not yet received the pills.**

Last month, local leaders, including Ehime Gov. Nakamura, gave their consent to the restart of the No. 3 unit at the Ikata plant.

In July, the NRA concluded that the reactor meets the new safety standards introduced in July 2013 following the Fukushima accident.

As the nuclear power station is located on the Sadamisaki Peninsula, one major challenge is ensuring residents living there can be safely evacuated after an accident.

The possible evacuation routes being considered include one that runs near the nuclear plant.

“In case of a disaster I’m afraid the roads will get clogged and we might not be able to get to the harbor,” said 65-year-old farmer Masatoshi Ouchi, who lives near the harbor.

These concerns were shared by other residents who say that **in the event the road is damaged, the harbor will become inaccessible.**

“I only hope that Shikoku Electric Power Co. won’t cause any accident,” said 62-year-old farmer Tetsuo Oda.

## **Evacuation drill held around Ikata Nuclear Power Plant**

<http://mainichi.jp/english/english/newsselect/news/20151109p2a00m0na021000c.html>

IKATA, Ehime -- The national government held an evacuation drill here on Nov. 8 and 9 based on a scenario of a severe accident causing radiation leaks from Shikoku Electric Power Co.'s Ikata Nuclear Power Plant, the largest ever such drill for the plant.

The plant's No. 3 reactor is expected to be restarted next year. More than 100 organizations and 14,570 people in seven prefectures were involved in the drill. In the drill scenario, a magnitude upper-6 earthquake struck in Ehime Prefecture, site of the plant, at 8:30 a.m. on Nov. 8 and rendered the No. 3 reactor unable to be cooled, causing radiation to leak outside of the plant. At some time past 3:30 p.m., Prime Minister Shinzo Abe made a declaration of a nuclear emergency for the drill from his office in Tokyo.

The plant is located at the base of Cape Sada, and in the event of a severe accident at the plant, around 5,000 residents on the cape side could become cut off from help. To prepare for this situation, on the second day of the drill, around 70 residents were evacuated to Oita Prefecture using a Maritime Self-Defense Force ship and a private ferry, the first time a plant evacuation drill by sea here has ever been done.

November 14, 2015

## **M7.0 quake in SW Japan**

## **M7.0 quake jolts Kyushu in southwestern Japan**

<http://mainichi.jp/english/english/newsselect/news/20151114p2g00m0dm001000c.html>

TOKYO (Kyodo) -- An earthquake with a preliminary magnitude of 7.0 struck the main island of Kyushu in southwestern Japan early Saturday, causing minor tsunami in the southern part of Kagoshima Prefecture. The quake at 5:51 a.m. originated at a depth of about 10 kilometers roughly 160 kilometers southwest of Makurazaki, Kagoshima, according to the Japan Meteorological Agency. It registered 4 on the Japanese seismic intensity scale of 7 in parts of Saga and Kagoshima prefectures.

A 30-centimeter tsunami was observed on the Nakanoshima Island roughly an hour after the quake. A tsunami advisory issued for areas in Kagoshima, such as the Tanegashima and Amami-Oshima islands, was later lifted.

No abnormalities were detected at the **Sendai nuclear power plant** in Satsumasendai, Kagoshima, according to the Nuclear Regulation Authority.

## **Magnitude-7 earthquake strikes off southwest Japan**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201511140023](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201511140023)

THE ASSOCIATED PRESS

A magnitude 7.0 earthquake struck Nov. 14 off the coast of southwest Japan, triggering a small tsunami. There were no immediate reports of damage or injuries.

The earthquake struck at 5:51 a.m. (20:51 GMT) at a depth of 10 kilometers about 190 kilometers southwest of Kagoshima city, the Japan Meteorological Agency said.

A 30-centimeter tsunami was recorded at 6:45 a.m. on Nakanoshima, a small island to the south of Kyushu, Japan's southernmost main island.

A tsunami advisory for Kagoshima prefecture and a string of small islands was lifted at 7:20 a.m.

## **Quake and tsunami hit Kyushu**

### **Big quake sends tsunami to Kyushu**

<http://www.japantimes.co.jp/news/2015/11/14/national/m7-earthquake-strikes-off-southwest-japan/#.VkhSer8R-ov>

AFP-JIJI

A powerful 7.0-magnitude earthquake off Kyushu early Saturday produced a small tsunami but no major damage, authorities said.

The U.S. Geological Survey said the epicenter of the shallow quake, which struck at 5:51 a.m., was about 160 km (100 miles) from the town of Makurazaki. Its focus was about 10 km under the ocean floor, according to both the USGS and the Meteorological Agency.

The Meteorological Agency issued a tsunami advisory but cancelled it about 90 minutes later.

A tsunami about 30 cm high was observed on Nakanoshima, but no major damage from either the quake or tsunami was reported, and a pair of reactors at the nuclear power plant in nearby Sendai were unaffected, Kyushu Electric Power Co. said.

**“There was no abnormality at the No. 1 and the No. 2 reactors following the quake,”** said Naoyuki Igawa, a spokesman for Kyushu Electric.

Tetsuro Shinchi, an official with the Kagoshima Prefectural Government, said all appeared normal.

“We have not received any reports of injuries or damage following the earthquake and tsunami advisory,” he said, adding that residents were still being told to be cautious.

“I felt a fairly strong jolt, but I have not seen anything unusual.”

A massive undersea quake that hit in March 2011 sent a tsunami barrelling into Honshu’s northeast coast, killing thousands and swamping the cooling systems at the Fukushima No. 1 nuclear plant, sending three reactors into meltdown. The world’s worst nuclear disaster since Chernobyl has displaced tens of thousands of people.

## **Ikata plant restart: Serious doubts remain**

### **Problems with Ikata plant restart**

[http://www.japantimes.co.jp/opinion/2015/11/14/editorials/problems-ikata-plant-restart/#.VkcN\\_r8R-ot](http://www.japantimes.co.jp/opinion/2015/11/14/editorials/problems-ikata-plant-restart/#.VkcN_r8R-ot)

Ehime has become the second prefecture to approve restarting a nuclear plant idled in the wake the 2011 Fukushima disaster. Gov. Tokihiro Nakamura conveyed his approval for reactivating the No. 3 reactor at Shikoku Electric Power Co.’s Ikata plant late last month. His decision, which follows the restart of two reactors at Kyushu Electric Power Co.’s Sendai plant in Kagoshima Prefecture in August and October, was problematic not only because of the process but also because it was made **despite concerns over the safe evacuation of nearby residents in the event of a severe accident — a concern due to the site’s unique geographical features.**

Nakamura used to say that he had no preconceived notions about restarting the Ikata plant. But his decision came rather suddenly and he chose not to fully explain to local residents how he reached it. Nor did he create opportunities to listen to their opinions prior to making his decision. **He opted not to hold a public meeting to explain his decision on the grounds that such a gathering would only lead to the mobilization of people organized by groups on both sides of the nuclear debate — despite the fact that such events play a critical role in a democracy.** An open public meeting would have given residents a chance to think deeply about the issue of nuclear energy in general and the merits and demerits of the Ikata No. 3 reactor restart in particular.

Instead, back in August the governor had the national government and Shikoku Electric explain the restart plan to representatives of six municipalities that lie within 30 km of the plant. After the 2011 Fukushima disaster, the government expanded the distance — from 10 km to 30 km — from a nuclear power plant

where advance measures to cope with severe nuclear accidents, such as preparing evacuation plans, must be taken. But only about 480 specifically selected people, including members of municipal assemblies and business organizations, could attend these meetings. **Ordinary citizens were excluded.**

**The sessions lasted only a few hours.** About half the participants from the cities of Uwajima and Seiyo said in a written questionnaire that the explanations provided at the events were insufficient. And reportedly representatives from five of the six municipalities — the exception being Yawatahama — expressed concern about the possibility of an accident at the plant.

In an attempt to make sure sufficient explanations were given, Nakamura had the power company send employees to the homes of people living within 20 km of the plant. But it's questionable whether this effort could adequately address residents' concerns.

In approving the reactor restart, Nakamura acknowledged that it is impossible to say nuclear power is absolutely safe. He said: "It is better not to have (nuclear plants). But we have no other choice but to live with (nuclear power) by applying state-of-the-art safety measures until alternative sources are discovered."

At the prefectural government's request, Shikoku Electric carried out additional work on the Ikata plant to make it strong enough to withstand a seismic vibration of 1,000 gals — higher than the assumed maximum vibration intensity of 650 gals needed to pass the safety screening by the Nuclear Regulation Authority. However, questions remain over the effectiveness of evacuation plans in the event the plant suffers a severe accident.

The Ikata plant is located near the base of the Sadamisaki Peninsula, which is about 40 km long and at its narrowest point only 800 meters wide. It is feared that in the case of a severe accident, 5,000 people living between the plant and the tip of the peninsula could be stranded. The area where the residents live has four shelters equipped with filters to remove radioactive substances, but they can accommodate only 470 people. If the residents can't escape by land, they have to use watercraft to evacuate to Oita Prefecture on the other side of the strait separating Shikoku and Kyushu. And there is the possibility that Oita might not be a safe haven given that at its closest point it's less than 60 km away from the Ikata plant.

Of some 10,000 residents in Ikata, about 1,700 reportedly told the town office that they hope to be evacuated by bus because of their age or other reasons. But the number of buses owned by the town is limited. Bus companies are supposed to send extra vehicles to the town in the event of a major disaster, but it has not been ascertained whether they can arrive quickly enough given the possibility of damage and traffic jams. **The national government is still discussing how to protect police officers and bus drivers from radiation exposure if they are mobilized to aid in the evacuation effort.**

Although Prime Minister Shinzo Abe touts the NRA's safety standards for nuclear plants as the toughest in the world, evacuation plans in case of a severe nuclear accident are not a subject for NRA assessment. In the event of a severe accident, all 18 municipalities in Oita Prefecture are expected to accept evacuees from Sadamisaki Peninsula, but in an NHK survey, the heads of 12 municipalities expressed doubt that the evacuation plans have been adequately developed. In an evacuation drill held last week, only 270 people took part in an exercise using buses and ships.

The Ehime governor's consent paves the way for the restart of the Ikata plant — possibly as soon as early next year — but serious doubts remain as to whether an evacuation following a severe accident will go as smoothly as assumed by the national and prefectural governments.

**This is one way to look at safety**

## **NRA extends deadline for nuclear plants to set up terrorist-attack response centers**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201511140034](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201511140034)

The nation's nuclear watchdog has pushed back the deadline for nuclear power plant operators to set up emergency response centers to deal with possible terrorist attacks at their facilities.

The decision was made at a Nov. 13 meeting of the Nuclear Regulation Authority. **It had previously set a deadline of July 2018 for the emergency response centers.**

**It extended the period to five years after nuclear power plants are certified as having cleared new safety standards that came into force in 2013** in the aftermath of the 2011 Fukushima nuclear disaster.

The move comes as many regional utilities operating nuclear power plants have yet to apply for NRA approval of their emergency centers.

This is because the NRA's screening of reactor buildings and other related facilities is taking longer than initially anticipated.

"I have to apologize for setting a timeline that some would criticize as removed from reality," said Shunichi Tanaka, NRA chairman, acknowledging that the watchdog's initial outlook was too optimistic.

**The new regulations require nuclear power plant operators to be able to continue to cool their reactors via remote-control from a special facility in the event that their central control rooms are destroyed by a terrorist attack by aircraft and other emergency contingencies.**

Currently, 26 reactors at 16 nuclear power plants have applied for NRA screening. Of the 26, only five have applied for screening of their emergency response centers.

Of the nation's 43 reactors, only two at Kyushu Electric Power Co.'s Sendai power plant in Kagoshima Prefecture have gone back online after getting the green light from the NRA. However, Kyushu Electric has not applied for screening of its emergency response center.

Shikoku Electric Power Co. has cleared the central part of the screening process for the No. 3 reactor at its Ikata nuclear power plant in Ehime Prefecture, although it, too, has not applied for screening of its terrorist-attack response center.

November 15, 2015

## **Iodine tablets for some of the residents around Sendai**

### **People near Sendai plant given iodine tablets**

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

Authorities in the southwestern prefecture of Kagoshima have distributed iodine tablets to people living near Japan's only online nuclear plant.

Iodine helps to prevent the thyroid gland from absorbing radioactive substances in the event of a nuclear accident.

On Sunday, officials from the prefecture and Satumasendai City handed out tablets to about 100 people

who had consulted doctors at the venue.

The guidelines that the government established after the Fukushima Daiichi nuclear accident state that **iodine should be distributed to people living within 5 kilometers of a nuclear plant.**

**But nearly 1,300 residents, or about 30 percent of those living near the Sendai plant, have not collected their tablets even after the reactors were restarted.**

Prefectural and city officials have been receiving complaints from people who don't fully understand how to use the iodine tablets. In August, city officials began visiting the homes of people who had still not picked them up.

Sunday's distribution was the first since the plant was put back online. Officials say they will work to ensure that all residents of the zone have supplies of the medication.

November 19, 2015

## Kashiwazaki: Safety has improved

### Kashiwazaki nuclear plant safer after upgrades, inspectors say

<http://www.japantimes.co.jp/news/2015/11/19/national/tepcos-kashiwazaki-nuclear-plant-safer-upgrades-inspectors-say/#.Vk4C-L8R-ot>

by Kazuaki Nagata

Staff Writer

KASHIWAZAKI, NIIGATA PREF. – The Kashiwazaki-Kariwa nuclear power plant has become safer in terms of physical hardware, while plant workers appear to be improving their emergency-response skills, overseas experts who inspected the facility Thursday said.

Members of a Nuclear Reform Monitoring Committee, which is keeping a watch on Tokyo Electric Power Co., visited the Kashiwazaki plant for the first time to check whether the utility had made progress on safety. **It is the world's largest nuclear power plant, housing seven reactors.**

“From what we’ve seen with the physical improvements, I believe the plant is much safer than it has been in the past,” said Dale Klein, a former chairman of the U.S. Nuclear Regulatory Commission who heads the monitoring committee.

All the reactors at the plant, located in the city of Kashiwazaki in Niigata Prefecture, are currently idle. Tepco has applied to the Nuclear Regulation Authority for safety checks on reactors No. 6 and No. 7.

It is still unclear when the nuclear watchdog will finish its inspections and make a decision on whether the plant meets new safety standards drafted after the Fukushima accident triggered by the March 11, 2011, earthquake and tsunami.

The new standards require structural reinforcement to withstand natural disasters, such as seawalls, an extra complex to remotely cool reactors and a new ventilation system that will filter and reduce radioactive particles in the event that gas needs to be released from the reactors if internal pressure rises to a dangerously high level.

The number of emergency generators, water cannons and fireproofing cables at the plants also must be increased.

As part of the tour, inspectors viewed upgrades such as a 10-meter wall to block tsunami, and watertight modifications to walls, doors and pipes in critical facilities such as reactor buildings. Tepco also showed a new 20,000-ton water reservoir that can be used to cool fuel rods and demonstrated a water cannon device that can shoot as high as 50 meters and far as 100 meters.

"I think from the community perspective, they should have high confidence that **proper physical protections have now been taken**," said Klein.

The committee members also got to see a disaster simulation drill in which the utility randomly picked an accident scenario to see how workers coped with it.

Klein stressed the importance of training, saying that the committee is focusing on the "people's issues."

"Do they have a good safety culture? Are they asking the right questions? Are they properly trained? Are they responsive?"

"We will continue to monitor this, but so far we've been pleased with what we've seen," Klein said.

## Sendai: Up to 60 years?

### **Kyushu Electric eyes maximum 60-year operations for Sendai nuclear reactors**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201511190028](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201511190028)

KAGOSHIMA--Kyushu Electric Power Co. plans to operate its two recently restarted nuclear reactors in Kagoshima Prefecture for 60 years, the longest period allowed under new safety regulations.

"We will make efforts toward 60-year-long operations," Kyushu Electric Power President Michiaki Uriu said on Nov. 18.

The No. 1 and No. 2 reactors at the company's Sendai nuclear power plant in Satsuma-Sendai were first put online in 1984 and 1985 respectively. Their operations were suspended after the meltdowns at the Fukushima No. 1 nuclear power plant in March 2011.

**Under tougher safety regulations worked out after the Fukushima nuclear disaster, nuclear reactors can be operated for up to 40 years, in principle. However, an extension of up to 20 years is permitted if the reactors pass screenings of the Nuclear Regulation Authority.**

The No. 1 reactor restarted commercial operations on Sept. 10 this year, followed by the No. 2 reactor on Nov. 17.

Uriu visited Kagoshima Governor Yuichiro Ito on Nov. 18 to report the resumption of operations of the No. 2 reactor.

(This article was written by Shusaku Isobe and Junichiro Nagasaki.)

November 20, 2015

## Nuclear vessels accidents to be brought in line with plant accidents

### Evacuation rules revised for nuclear vessel accidents

<http://www.japantimes.co.jp/news/2015/11/20/national/science-health/evacuation-rules-revised-for-nuclear-vessel-accidents/#.Vk8VOb8R-ot>

Kyodo

The government on Friday lowered the threshold for evacuating residents during accidents on nuclear vessels, **bringing it in line with accidents at atomic power plants.**

Under the new rules, **residents will begin evacuating when radiation exceeds 5 microsieverts per hour in areas near nuclear-powered aircraft carriers or submarines — significantly lower than the previous 100 microsieverts per hour.**

The government also revised its emergency manual to reflect the change, and local authorities will now order or advise residents to leave based on the new rules.

Cities hosting U.S. Marine Corps bases with nuclear vessels are **Yokosuka**, Kanagawa Prefecture, **Sasebo**, Nagasaki Prefecture, and **Uruma**, Okinawa Prefecture.

The Cabinet Office had been working to revise the standards after disaster management minister Taro Kono instructed it to do so last month.

The government is also eyeing further amendments since discrepancies between nuclear vessel accidents and nuclear plant accidents still exist.

For example, **people within a 30-km radius of a nuclear plant are urged to stay indoors during an accident, while only those within a 3-km radius of a nuclear vessel accident are urged to do so.**

The rules for power plant accidents were revised in the wake of the 2011 Fukushima disaster.

November 21, 2015

## Contaminated grass for Namie cows





Masami Yoshizawa moves contaminated grass rolls from Shiroishi, Miyagi Prefecture, at his farm in Namie, Fukushima Prefecture, on Oct. 31. (Masakazu Honda)

## Municipalities lock horns over contaminated grass given to Fukushima cattle ranch

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201511210049>

SHIROISHI, Miyagi Prefecture--The mayor of a town near the crippled Fukushima No. 1 nuclear power plant filed a complaint Nov. 20 against Shiroishi city for providing radiation-contaminated pasture grass to a local farmer.

Mayor Tamotsu Baba of Namie town visited the Shiroishi city office to hand a written complaint to Toru Sasaki, the deputy mayor, saying the city's action "lacked consideration" for the sentiments of Namie residents.

Sasaki defended the city's decision, saying that **it is legal to transfer feed grass that contains 8,000 becquerels or less per kilogram of radioactive fallout** from the March 2011 nuclear disaster.

"It was **a humanitarian act aimed at assisting farmers and stock farms,**" Sasaki told Baba.

**The central government is responsible for safely disposing of pasture grass that contains radiation levels exceeding 8,000 becquerels per kilogram. It has requested that local governments dispose of grass with levels at 8,000 becquerels or lower, just like other waste that is not contaminated with radiation.**

After the nuclear disaster at the Fukushima No. 1 power plant, all residents of Namie, located north of the crippled facility, were evacuated. The evacuees spread out across Japan.

From late October to mid-November, the city of Shiroishi gave about 1,100 contaminated grass rolls that had accumulated at temporary storage sites around the city to a cattle farm in Namie.

The “ranch of hope” stock farm is operated by Masami Yoshizawa, who defied the government edict to kill all livestock cows exposed to radiation, and feeds 330 cows consigned by local farmers who were forced to close their ranches.

Yoshizawa accepted Shiroishi city’s request to bring in contaminated pasture grass, much of which cannot be used for feeding cows as the rolls contain more than 100 becquerels of radiation per kilogram. Like many municipalities affected by radioactive fallout from the nuclear disaster, Shiroishi has had trouble disposing of the contaminated grass through incineration due to opposition from local residents. The farm ministry and Miyagi prefectural government had requested Shiroishi on Nov. 18 to stop transferring contaminated pasture grass to Namie, saying such actions could spread misinformation on contamination of stock farm products and hinder the area’s recovery.

November 24, 2015

## Radioactive waste piles up in Fukushima



Residents of Kami, Miyagi Prefecture, and its surrounding municipalities try to block the Environment Ministry’s on-site inspection for the planned construction of a disposal facility of radioactive waste in the town on Nov. 5. (Yosuke Fukudome)

## Radioactive waste mounts up as residents resist post-Fukushima disposal plans

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201511240005>

By YUSUKE FUKUDOME/ Staff Writer

A huge backlog of radioactive waste from the Fukushima nuclear disaster that unfolded in 2011 has piled up as the government faces public resistance to the effects of disposal regulations introduced after the meltdown.

A total of 166,000 tons of contaminated waste, including incinerated ash and rice straws, has accumulated at temporary storage sites in 12 prefectures.

While the central government has made plans to construct disposal facilities for the waste in Miyagi, Ibaraki, Tochigi, Gunma and Chiba prefectures, strong opposition from local residents has stalled progress.

In Kami, Miyagi Prefecture, where construction of one of the plants is planned, residents have forcibly blocked Environment Ministry officials' entry to the mooted construction site.

"The site is located in the middle of landslide-prone areas and it should not qualify as a location for such a facility," one local resident said. "We demand the government calls off the project."

Another said, "What is causing our anxiety is that it remains unclear who will take ultimate responsibility in solving this problem and how."

The Environment Ministry has given up conducting inspections at the construction site in a mountainous area this year after failing to gain access to it several times since last year.

Ministry officials have insisted to residents that it is essential to promptly open the facility because the current temporary storage sites around the prefecture were chosen as an emergency measure.

A typhoon, flood and other natural disasters could cause the drift and spill of contaminated waste at any time, the officials say.

After the triple meltdown at the Fukushima nuclear plant in March 2011 spewed massive radioactive fallout, the government categorized substances with radioactivity levels of more than 8,000 becquerels per kilogram as "designated waste."

The government plans in principle to eventually make each of the affected prefectures to dispose of contaminated waste locally.

At one of the temporary storage sites in Tome, Miyagi Prefecture, 194 tons of contaminated rice straws are stored in polyvinyl houses.

Shigetaro Chiba, a 73-year-old farmer who rents the storage site's land to the city office, expressed confusion over the prolonged use of his land, located next to his rice paddies, as a contaminated waste storage site.

"I was made to agree to extend the lease after the initial two-year period promised by the government expired. The new contract no longer specifies a deadline," he said.

November 25, 2015

## **(Just completed) wall to contain radioactive water leaning towards sea**

### **Groundwater wall at Fukushima plant leans slightly**

[http://www3.nhk.or.jp/nhkworld/english/news/20151125\\_37.html](http://www3.nhk.or.jp/nhkworld/english/news/20151125_37.html)

The operator of the damaged Fukushima Daiichi nuclear plant has found that **a wall it built 30 meters into the ground to block the flow of radioactive water is leaning slightly.**

Tokyo Electric Power Company built the steel barrier along a coastal embankment to stop contaminated groundwater from seeping into the sea. The utility finished building the wall in late October.

TEPCO inspectors found that **the wall is leaning up to some 20 centimeters toward the sea. They say this is due to the pressure of the groundwater flow.**

The officials also blamed rising groundwater levels for cracks found in the embankment's pavement.

The utility says **workers are buttressing the wall with steel pillars. They are also repairing the cracks to keep out rainwater so groundwater levels don't rise further.**

TEPCO says the lean doesn't affect the wall's ability to block contaminated water.

November 26, 2015

## **KEPCO and the 40 year limit**

### **Utility seeks to run reactor beyond 40-year limit**

[http://www3.nhk.or.jp/nhkworld/english/news/20151126\\_30.html](http://www3.nhk.or.jp/nhkworld/english/news/20151126_30.html)

Kansai Electric Power Company is seeking to resume operation of its currently offline nuclear reactors, including old units.

On Thursday, it submitted to the regulator an application for its old reactor in central Japan to be allowed to operate beyond the government's 40-year limit.

The utility sought a 20-year extension for the Mihama plant's No. 3 reactor. The unit will be 40 years old in December of next year.

New regulations introduced after the 2011 Fukushima Daiichi nuclear crisis set reactor operating limits of 40 years in principle.

But the rules allow operators to continuously run the reactors for up to 20 more years if they obtain clearance from the Nuclear Regulation Authority.

Kansai Electric Power said it has found no safety problems with the unit after completing special inspections that began in May. They are mandated by the regulator to detect possible deterioration.

The application will impose additional inspections upon the regulator, adding to the general screening it is already conducting at the reactor based on the new regulations.

The regulator warns that it may not be able to complete checks on the new application by the deadline of the end of November of next year. It cites the time being taken on the current screening due to evaluation of earthquake resistance and other factors.

Kansai Electric plans to submit quake-resistance and other data as soon as possible to help accelerate the process.

But if the screening is not completed within the required timeframe, the utility may be forced to scrap the reactor.

## Fukushima foods: EU stops some radiation checks

### EU to exempt some Fukushima foods from radiation checks

<http://www.japantimes.co.jp/news/2015/11/26/national/eu-exempt-fukushima-foods-radiation-checks/>

JJI

BRUSSELS – The European Union has decided to stop requiring radiation screening for some food products imported from Fukushima Prefecture, informed sources have said.

It will be the first time for the EU to exclude foods items from Fukushima from its mandatory check list since the regulation was introduced after the nuclear disaster at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear plant in March 2011.

Specifically, **the EU plans to exempt such items as vegetables, fruits other than persimmons and livestock products from the checks**, the sources said Wednesday.

**The EU will also stop requiring screening certificates for all items currently bound by the rule that are imported from Aomori and Saitama prefectures. Additionally, rice and some other foods produced in other prefectures will be removed from the list, while a handful of edible wild plants will be added.**

**Japan hopes that the EU's easing of restrictions will help solidify the notion that there is no scientific basis for maintaining the regulations**, sources familiar with the matter said.

South Korea bans imports of certain fishery products from Japan. Taiwan has strengthened its import regulations.

At a meeting of experts on Wednesday, the EU approved the deregulation proposal made by the European Commission **based on analysis derived from sample radiation checks**.

The commission, the executive arm of the EU, is expected to officially decide on the deregulation measures by the end of this year, the sources said.

In a meeting early this month in Luxembourg, Foreign Minister Fumio Kishida asked his European Union counterpart, Federica Mogherini, to ease or scrap the import regulations.

The government aims to boost the nation's food exports to ¥1 trillion by 2020. That compares to the ¥611.7 billion reported in 2014.



The country's food exports to the EU member nations in 2014 totaled ¥33.2 billion, accounting for 5.4 percent of Japan's overall food exports. Though the share was small, the EU-bound food exports shot up 17 percent from the preceding year.

November 27, 2015

## **Fukushima foods: EU stops some radiation checks (2)**

### **EU to ease restrictions on food imports from Japan**

[http://www3.nhk.or.jp/nhkworld/english/news/20151127\\_16.html](http://www3.nhk.or.jp/nhkworld/english/news/20151127_16.html)

The European Union will ease restrictions on food imports from Japan that were put in place after the Fukushima nuclear accident in 2011.

The EU established mandatory radiation checks on food products from Fukushima Prefecture and neighboring areas before they could be shipped.

But the European Commission decided Wednesday those restrictions will be lifted on certain products if their radiation levels have stayed below safety limits long enough.

Among the items to be exempted are vegetables, beef and other meat products, fruits other than persimmon, buckwheat and tea from Fukushima Prefecture.

All food products from Aomori and Saitama Prefectures, as well as rice and soybeans from 6 prefectures in northeastern Japan will also be exempted.

The easing of the restrictions is expected to take effect by the end of the year, after being approved by the European Commission.

The Japanese government says it will work to have the remaining restrictions lifted as soon as possible.

## **Mihama No.3: KEPCO applies for 20 year extension**

### **Kepco files bid to extend life of aging Mihama reactor**

<http://www.japantimes.co.jp/news/2015/11/27/national/kepco-files-bid-extend-life-aging-mihama-reactor/#.VliCw78R-ot>

by Eric Johnston

Staff Writer

OSAKA – Kansai Electric Power Co. formally submitted an application to the Nuclear Regulation Authority on Thursday for permission to extend the life of its aging Mihama No. 3 reactor for up to another two decades.

The reactor will turn 40 years old in December 2016. Under new rules established by the NRA, an operator may apply for a one-time extension to continue operating a 40-year-old reactor for 20 years, assuming it passes additional safety inspections. Kepco has already applied to extend its Takahama No. 1 and 2 reactors, both of which are now over 40 years old.

Kepco president Makoto Yagi said Thursday the decision was taken after the utility decided it would be better to restart the unit than to scrap it, despite the additional costs involved in meeting new earthquake and disaster safety standards.

“We decided there was economic merit to extending the reactor’s operations after taking into account its output and expected revenue,” Yagi told reporters.

How much it will cost to meet the new safety standards is uncertain. Kepco originally estimated it would be around ¥130 billion. That figure could climb if further problems are found during inspections. Kepco’s decision was also taken partially to ensure Mihama would continue to have one reactor in operation.

Earlier this year, the utility said it would decommission two reactors at the site, the 45-year-old No. 1 and 43-year-old No. 2 units.

At a shareholders meeting earlier this year, Kepco officials indicated that the company might one day build new nuclear power plants to replace Mihama and noted that it wanted to maintain good relations with the town.

Thursday’s decision comes a day after Kepco announced the restart of its Takahama No. 3 and 4 reactors would be delayed by one month each. They were originally slated for restart in December and January, respectively.

Although the NRA has approved a restart, both reactors had a temporary injunction slapped on them earlier this year, which Kepco is seeking to have lifted.

Despite safety concerns among local residents, especially in neighboring Kyoto and Shiga prefectures, Fukui Prefecture and local leaders in Takahama are anxious to have both reactors online again as soon as possible, given the funds they bring in the form of government subsidies and local service industry revenue.

Earlier this week, Mihama town head Yutaka Nose met with Ryozi Tatami, mayor of Maizuru, Kyoto Prefecture, to discuss safety cooperation. Parts of Maizuru, a major port city on the Sea of Japan with a Maritime Self-Defense Force base, lie within 5 kilometers of the Takahama plant.

November 28, 2015

## Higashidori plant: Active faults confirmed

### Agency confirms active faults running near Higashidori nuclear plant in Aomori

<http://www.japantimes.co.jp/news/2015/11/28/national/science-health/agency-confirms-active-faults-running-near-higashidori-nuclear-plant-aomori/#.VlmdVb8R-ot>

JII

The Nuclear Regulation Authority said at a safety screening meeting Friday that it has confirmed active faults at the site of the No. 1 reactor at Tohoku Electric Power Co.'s Higashidori nuclear plant and **will base discussions on the restart of the idled reactor on the assumption that the faults will move.**

Tohoku Electric, which has denied the existence of such active faults, may be asked to reassess the earthquake resistance of the reactor in Aomori Prefecture, people familiar with the matter said.

In March, a team of experts said in a report to the authority that two major faults called F-3 and F-9 that run near the reactor could move in the future.

At Friday's meeting, **the NRA also offered the view that separate faults similar to the two at the site will likely move as well.**

**The authority has yet to conclude whether a minor fault running under a cooling water intake channel, a key safety facility for the reactor, is active or not.**

If the fault is determined to be an active one, Tohoku Electric will be ordered to decommission the No. 1 unit, as **the new nuclear safety standards, introduced in July 2013, prohibit the installation of key facilities, including reactors themselves, over active faults.**

**The Higashidori plant is the second nuclear power station confirmed by the NRA to have an active fault at its site, after Japan Atomic Power Co.'s Tsuruga nuclear plant in Fukui Prefecture.**

Tohoku Electric hopes to reactivate the 1.1-million-kw No. 1 reactor, which went offline in February 2011 for scheduled inspections, as early as April 2017.

## Nuclear disaster drill around Genkai plant





## **Thousands take part in nuclear disaster drill near Genkai plant in Kyushu**

<http://www.japantimes.co.jp/news/2015/11/28/national/thousands-take-part-nuclear-disaster-drill-near-genkai-plant-kyushu/#.Vlmc1b8R-ot>

JJI

Some 2,900 residents living near the Genkai nuclear plant in Saga Prefecture joined a nuclear disaster drill involving three north Kyushu prefectures on Saturday.

Mock evacuations using Self-Defense Force and Japan Coast Guard ships and helicopters were carried out for residents who live within 30 kilometers of the Kyushu Electric Power Co. nuclear plant.

From Ikinoshima, a remote island in Nagasaki Prefecture, around 10 residents were evacuated by air to Fukuoka.

A planned operation to transport Ikinoshima residents aboard an SDF ship to the port of Hakata in Fukuoka was canceled due to bad weather.

The drill was based on a scenario of a serious accident occurring at the No. 4 reactor at the Genkai plant. Some participants were evacuated to a facility with an air filtration system designed to keep out radioactive substances.

Among the participants was construction company executive Fumihito Yamauchi, 49, who was transported by helicopter from Ikinoshima.

“Nuclear accidents must not happen, but the experience from this drill will help speed up an evacuation if such a thing becomes necessary,” Yamauchi said. “I will pass my experience on to people around me.”

The drill included an operation to practice transporting heavily irradiated Genkai plant workers from a hospital in Karatsu, Saga Prefecture, to Nagasaki University Hospital in Nagasaki by helicopter.

## US wants to operate nuke plants for 80 years!

### U.S. eyes extending life of nuclear plants to 80 years

<http://www.japantimes.co.jp/news/2015/11/28/business/u-s-eyes-extending-life-nuclear-plants-80-years/>

Bloomberg

NEW YORK – The U.S. is set to become the first nation to decide whether it is safe to operate nuclear power plants for 80 years, twice as long as initially allowed.

The majority of the nation's 99 reactors have already received 20-year extensions to their original 40-year operating licenses.

Now, operators led by Dominion Resources Inc. want to expand the time frame further, potentially creating a precedent for an aging global fleet at a time when the economics of the industry are undergoing dramatic change.

Dominion said earlier this month it will request an extension from the U.S. Nuclear Regulatory Commission, which oversees the industry. The plan has already raised the ire of anti-nuclear campaigners who cite decades of wear and tear on the nation's reactors, as well as the 2011 Fukushima disaster. The NRC will release a draft report next month outlining safety measures needed to extend the time line.

"The reality of life is the risks go up" as plants age, said Dave Lochbaum, director of the nuclear safety project at the Union of Concerned Scientists, a Cambridge, Massachusetts-based advocacy group. "If you don't respond with more aggressive risk management, then you're inviting disaster."

An approval may determine the fate of the world's oldest nuclear fleet, one that's being battered by high operating costs, expensive safety upgrades and an abundance of cheap natural gas that is squeezing profits.

If allowed, Dominion's Surry plant in Virginia will be the first to outlive the average human being in the U.S. with a life span of 78.8 years. A final decision will not come before the early part of the next decade.

"We are at the forefront," Tina Taylor, a director at the Electric Power Research Institute Inc., said on Nov. 19. "As we demonstrate extending the licenses of plants and continue operating them, it sets a model for how people will do that around the world."

Global nuclear retirements of as much as 144 gigawatts are expected by 2030, about 38 percent of current capacity, according to the International Atomic Energy Agency.

"We are probably ahead in terms of the renewal process just because of the age of the fleet in the U.S.," Stephen Burns, chairman of the NRC, said last month in Washington.

Utilities are seeking extensions as some reactors shut early, unable to compete with the shale boom that has flooded the market with cheap and abundant supplies of natural gas. About 10 percent of U.S. nuclear output may be retired early, according to Moody's Investors Service. Five reactors have been closed in the last three years, and three more are due to shut down by 2019.

The U.S. is the first country to set out a path for reactors to run to 80 years, Tom Kauffman, a spokesman for the Washington-based Nuclear Energy Institute, an industry advocate, said by e-mail.

Tyson Slocum, Washington-based director of energy at Public Citizen, said by phone on Nov. 18. "You've seen a number of issues from Davis-Besse to Vermont Yankee where aging components triggered a variety of leaks."

FirstEnergy Corp. found that corrosion nearly penetrated a steel reactor cap in its Davis-Besse nuclear station in Ohio in March 2002, while Entergy Corp. reported a small radioactive leak from pipes at its Vermont Yankee plant in January 2010. The company and the NRC said at the time that the leak did not pose a health risk.

The thinning of the U.S. nuclear fleet will hamper government efforts to tackle climate change, industry supporters say, since atomic power provided 63 percent of all carbon-free electricity in the U.S. in 2014. "From a national policy standpoint, we're going to be hard pressed to decarbonize at a meaningful rate if we take 1,000 megawatts a clip out of the stack," Peter Keller, New York-based managing director at Berkeley Research Group LLC, said Nov. 3.

Lingering questions surround the durability of certain reactor materials and components, particularly the concrete and electric cables. There's also the lack of a permanent home for spent nuclear fuel, currently stored on site in cooling pools or in dry casks.

"Just like a car and plane, power reactors get old year by year," Yoshiaki Himeno, a professor at the Tokyo Institute of Technology, said by email. While owners refurbish parts and renew the systems, "the question is how long they can continue those repairs and renewals from economical and safety points of view."

November 30, 2015

## Shika No.1 should not be restarted

### **EDITORIAL: Decommissioning Shika No. 1 reactor the right thing to do**

<http://ajw.asahi.com/article/views/editorial/AJ201511300023>

#### **A nuclear reactor believed to sit above an active fault should never be restarted.**

A Nuclear Regulation Authority expert panel report that will likely be finalized says there is an undeniable possibility that an active geological fault line runs directly beneath the Shika nuclear power plant's No. 1 reactor building in Ishikawa Prefecture.

The nuclear watchdog's regulation standards do not allow key equipment, such as a nuclear reactor, to be built on an active fault.

The basic principle should be: "When in doubt, leave it out."

Hokuriku Electric Power Co., operator of the Shika nuclear plant, should take bold steps to decommission the No. 1 reactor.

However, the company, which says its own studies show the fault is not active, has angrily retorted that the NRA panel's decision cannot be called rational.

The regional utility has already filed an application with the NRA to restart the nearby No. 2 reactor, and is set to maintain its counterarguments during screenings of that application.

Even experts find it difficult to decide if a given underground fault has the potential to move.

The suspicion that the fault is active arose from geological sketches made before the Shika nuclear plant was built. But newer strata layers that could have helped provide a more accurate assessment were scraped away during construction work at the site.

**In addition to twice conducting on-site investigations, the expert panel has comprehensively examined the terrain, bedrock and other features in surrounding areas. The panel had its findings verified by third-party experts before deciding to reject Hokuriku Electric's arguments.**

The panel's decision should not be taken lightly.

Continuing to argue against the NRA would require additional survey expenses. Hokuriku Electric's work to ensure the No. 2 reactor will comply with the regulation standards is already expected to set the utility back between 150 billion yen (\$1.22 billion) and 200 billion yen.

**The No. 1 reactor has proved extremely difficult to bring back online, and continuing to spend money on such efforts could hardly win the understanding of users.**

The No. 1 and No. 2 reactors of the Shika nuclear plant have remained offline since they were halted immediately before the Fukushima No. 1 nuclear plant disaster. But the halt of their operations has never caused a major problem with supply and demand of electricity. Hokuriku Electric has mostly remained in the black even after the 2011 disaster, and its power rate levels are the lowest in Japan.

**Hydropower accounts for one-quarter of the power generated by Hokuriku Electric, which serves an area with abundant water resources from the Northern Japan Alps. That gives the company the option of making the most of its geographical advantage and being reborn as a utility without a nuclear plant.**

The shortest way to prevent a repeat of a Fukushima-like disaster is to close down nuclear reactors based on their risk levels. We do hope Hokuriku Electric will set a pioneering example.

**The Shika No. 1 reactor, in service only since 1993, is a relatively young one in Japan.**

Decommissioning it would be a tough decision for management.

The government, however, altered accounting rules in spring this year to help facilitate decommissioning procedures. For example, electric power companies are now allowed to write off decommissioning-related losses in 10-year installments to reduce the potential burden from such procedures.

Total liberalization of the power retail market is expected next spring, spelling the end of the regional monopolies of electric utilities, whose management prowess will come under more serious scrutiny.

We hope Hokuriku Electric will make a decision with an eye toward that future.

December 1, 2015

## Cable and supervision problems for TEPCO

### TEPCO reports 2,000 incorrectly installed cables at 2 nuclear complexes

<http://mainichi.jp/english/english/newsselect/news/20151201p2a00m0na013000c.html>

A total of around 2,000 cables at two nuclear complexes were installed incorrectly according to fire prevention standards, the Tokyo Electric Power Co. (TEPCO) reported on Nov. 30.

There are an additional 500 locations at the complexes where problems with cables are suspected, and TEPCO is continuing to investigate these.

Under the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, cables used for the emergency shutdown of reactors and reactor cooling must be installed separately from other cables in order to limit the risk of fire spreading between the two. However, at the No. 1 through No. 7 reactors **at the Kashiwazaki-Kariwa nuclear power plant** there were 1,745 cables found to have problems such as the two types of cables being installed together. **At the Fukushima No. 2 nuclear complex**, there were 234 such cables found at the No. 3 and No. 4 reactors.

Furthermore, there were 748 places at the Kashiwazaki-Kariwa complex and 54 at the Fukushima No. 2 plant having problems with separation plates located between the two kinds of cables, such as there being holes in the plates.

**Additionally, TEPCO revealed the results of an examination of 807 of its construction projects over the past five years, saying there were 735 cases of problems with construction supervision.** The examination was prompted by a warning from the Nuclear Regulation Authority (NRA) that safety standards under the regulation act had been broken during safety-related construction at the Kashiwazaki-Kariwa plant. TEPCO submitted both the reports on the cable problems and the supervision problems to the NRA on Nov. 30.

December 4, 2015

## **Takahama: What about evacuation?**

### **Mayor OKs reactor restarts at Takahama nuke plant; questions remain on evacuation plan**

<http://mainichi.jp/english/english/newsselect/news/20151204p2a00m0na014000c.html>

TAKAHAMA, Fukui -- The mayor of this coastal town gave consent to reactivating the No. 3 and No. 4 reactors at the Takahama nuclear plant on Dec. 3, in defiance of a landmark district court decision that barred the reactors from being restarted as well as lingering skepticism over the town's nuclear accident evacuation plan.

Mayor Yutaka Nose gave the green-light during a town assembly meeting, with the aim of reinvigorating the local economy, which depends heavily on the nuclear complex.

"After the Fukushima nuclear disaster, measures required (for nuclear facilities) changed drastically," Nose remarked at the outset of the meeting, adding, "We will respond to the matter from a comprehensive perspective while placing top priority on safety."

The town is home to the No. 3 and No. 4 reactors of Kansai Electric Power Co.'s Takahama nuclear plant. In April this year, the Fukui District Court issued a provisional injunction ordering the reactors remain suspended, and legal judgment on the case has yet to be finalized. The town's resident evacuation plan in the event of a nuclear accident is also called into question in terms of its viability.

After the town assembly meeting on Dec. 3, Nose told reporters, "The judicial branch made its decision based on the law, while I made my decision as an administrator in consideration of residents' safety and disaster prevention schemes."

All 14 town assembly members were present at the meeting, while only 15 people occupied the gallery seats. The mayor's declaration to approve the reactor restarts caused a mixed reaction among the

observers, with anti-reactivation residents sighing audibly, while a pro-restart resident questioning why it took so long for the mayor to give the go-ahead.

It's been almost three years and nine months since all four reactors at the Takahama plant were suspended.

"I haven't heard of any cases of local businesses going under due to the suspension of the plant, but its repercussions vary depending on the type of business," said a town official.

The town has financially benefited from the nuclear complex, hosting some 1,000 workers during regular inspections of the facility -- a far greater figure than usual. A man in his 80s in the construction business said, "We have a lot of civil engineering work to do thanks to the implementation of new regulatory standards (for nuclear reactors), but stores and inns that had anticipated demand from regular inspections are having a tough time."

In the meantime, anti-nuclear disaster measures are not fully in place yet. Under the town's evacuation plan, residents are supposed to flee in family cars or buses prepared by the municipal and prefectural governments to the Fukui Prefecture city of Tsuruga -- some 50 kilometers east of Takahama -- or to the Hyogo Prefecture city of Takarazuka, among other areas. Residents will be screened for radioactive materials en route to their evacuation destinations. If necessary, residents will undergo a decontamination process.

According to an estimate by the Fukui Prefectural Government, most of the approximately 55,000 residents within a 30-kilometer radius of the Takahama plant will be able to get outside that radius within 11 hours of an evacuation order. However, the escape routes include the two-lane Maizuru-Wakasa Expressway and National Route 27.

"If the news of a nuclear accident breaks, residents would panic," said Yukihiro Higashiyama, 69, head of the citizens group "Furusato o mamoru Takahama Oi no kai" (Association of Takahama and Oi for protecting our hometowns). "Because there are many narrow roads, car accidents may also happen. The evacuation plan is an armchair theory only."

## Fukushima Pref. OKs disposal site (3)

### Fukushima agrees to accept 'low-level' nuclear waste from 2011 disaster

<http://www.japantimes.co.jp/news/2015/12/04/national/two-mayors-in-fukushima-ok-final-disposal-of-low-level-nuclear-waste/#.VmHYKr8R-ot>

Jiji, Kyodo

FUKUSHIMA – Fukushima Gov. Masao Uchibori told Environment Minister Tamayo Marukawa Friday that his prefecture will accept relatively 'low-level' radioactive waste that resulted from the March 2011 nuclear disaster in Fukushima.

Fukushima is the first to give consent among six prefectures where final disposal of such waste is planned by the central government.

It follows a meeting that also included Koichi Miyamoto, mayor of the town of Tomioka, which hosts the existing facility where the waste will be disposed, and Yukiei Matsumoto, mayor of the town of Naraha, which accommodates a transportation route to the facility.



Marukawa said the government will make the utmost effort to deal with waste disposal while securing safety and implementing measures to rebuild the region.

On Thursday, both mayors accepted the national government's plan during talks with the governor, on condition that the government take measures to prevent the project from hindering reconstruction in the municipalities. They found it necessary to expedite disposal of so-called designated radioactive waste as the government is moving to lift evacuation orders still in place in the prefecture.

In talks with Miyamoto and Matsumoto, the governor said the prefecture made the difficult decision, believing that the facility was necessary to recover the prefecture's environment.

But the governor said the facility should only accept waste from Fukushima, and urged the government to maintain its policy of disposing of waste in the prefecture in which it originates.

Currently, the nation's designated radioactive waste totals some 166,000 tons across 12 prefectures.

Although local opposition remains strong, the government hopes Fukushima's decision will encourage other prefectures to follow suit.

Subject to the final disposal at the facility will be designated waste that contains up to 100,000 becquerels of radioactive substances per kilogram, such as rice straw and debris at districts evacuated after the disaster at Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant.

The facility is expected to handle some 650,000 cubic meters of such waste.

In December 2013, the national government presented the final disposal plan to the local governments and urged them to accept it. Taking into account requests from local communities, the government showed in November this year regional economic promotion measures, such as the creation of an industrial complex, and additional safety measures.

On Wednesday, the prefecture showed the two towns its plan to extend subsidies worth ¥10 billion for such measures as dealing with rumors and urged them to agree to the disposal plan.

December 5, 2015

## Spent fuel containers not strong enough for intended storage?

### Regulator probes fuel container strength at Fukushima nuclear plant

<http://mainichi.jp/english/english/newsselect/news/20151205p2g00m0dm033000c.html>

TOKYO (Kyodo) -- Japan's nuclear regulatory body said Friday it has launched an investigation into metallic spent fuel containers at Tokyo Electric Power Co.'s Fukushima Daiichi nuclear plant as they may not have sufficient strength.

Members of the Nuclear Regulation Authority raised the issue Friday at a meeting to discuss nuclear safety problems. The body will examine **whether the containers made by Kobe Steel Ltd. are safe for long-term use.**

**The nuclear regulation watchdog said it will also launch a probe at Japan Atomic Power Co.'s Tokai No. 2 nuclear power plant in Ibaraki Prefecture as the same type of fuel container may be used there.**

The fuel storages meet strength criteria set by the Japan Society of Mechanical Engineers. But **the metal plates inside them may not be strong enough for use in storing nuclear spent fuel.** TEPCO said it believes the strength of the containers meets the NRA's safety standards.

## Separation of safety cables overlooked by NRA

### NRA fails to conduct on-site checks for nuclear plant cables

<http://www.japantimes.co.jp/news/2015/12/05/national/nra-fails-to-conduct-on-site-checks-for-nuclear-plant-cables/#.VmL45r8R-ot>

JJI

**The Nuclear Regulation Authority failed to conduct on-site inspections to determine if safety equipment cables were installed separately from other cables at nuclear power plants during the safety screening process required for the restart of reactors,** it was learned Saturday.

The revelation came to light when it was recently revealed that safety cables at nuclear facilities, including Tokyo Electric Power Co.'s Kashiwazaki-Kariwa plant in Niigata Prefecture, were not separated from other cables, a violation of the new nuclear safety standards introduced in July 2013.

**The nuclear safety watchdog's oversight also includes cables installed for reactors that have already passed safety screenings, including those at Kyushu Electric Power Co.'s Sendai plant in Kagoshima Prefecture.**

At all seven reactors at the Kashiwazaki-Kariwa plant, many safety-related cables, including those used to transmit data from water meters and for water injection operations, were found combined with other cables. The seven units are all boiling-water reactors.

**The new safety standards, drawn up after the triple reactor meltdown in March 2011 at Tepco's crippled Fukushima No. 1 nuclear plant, call for the separation of safety cables from others to prevent possible fire damage.**

The NRA only became aware of the problem at the Kashiwazaki-Kariwa plant when it received a report from Tepco in September.

Similar issues were discovered at other boiling-water reactors, including the No. 3 and No. 4 reactors at Tepco's Fukushima No. 2 nuclear plant and the No. 4 reactor at Chubu Electric Power Co.'s Hamaoka plant in Shizuoka Prefecture.

According to NRA officials, **the safety of cables is confirmed through the application documentation submitted by power companies, with no visual checks conducted on the ground.**

In pre-restart reactor inspections, the NRA does not check to see if safety cables are separated, although inspections are done for fire-extinguishing and other equipment, the officials added.

At the Kashiwazaki-Kariwa plant, the problem cables were first found under the central control rooms for the No. 1 to No. 7 reactors.

The NRA then asked other power companies with boiling-water reactors to check and report if they had similar issues. Power utilities with pressurized-water reactors were also asked to report.

At the Kashiwazaki-Kariwa reactor, mixed cables were found in areas outside the central control rooms.



“At present, we can’t deny the possibility that safety and other cables are mixed at pressurized-water reactors, but how to handle the problem has yet to be decided,” an official at the NRA said. “First, we’ll analyze the report from Tepco.”

Of pressurized-water reactors in Japan, the No. 1 and the No. 2 reactors at the Sendai power plant resumed operations in August and October, respectively.

The No. 3 and No. 4 reactors at Kansai Electric Power Co.’s Takahama plant in Fukui Prefecture, central Japan, and the No. 3 reactor at Shikoku Electric Power Co.’s Ikata plant in Ehime Prefecture have also passed NRA safety screenings.

December 7, 2015

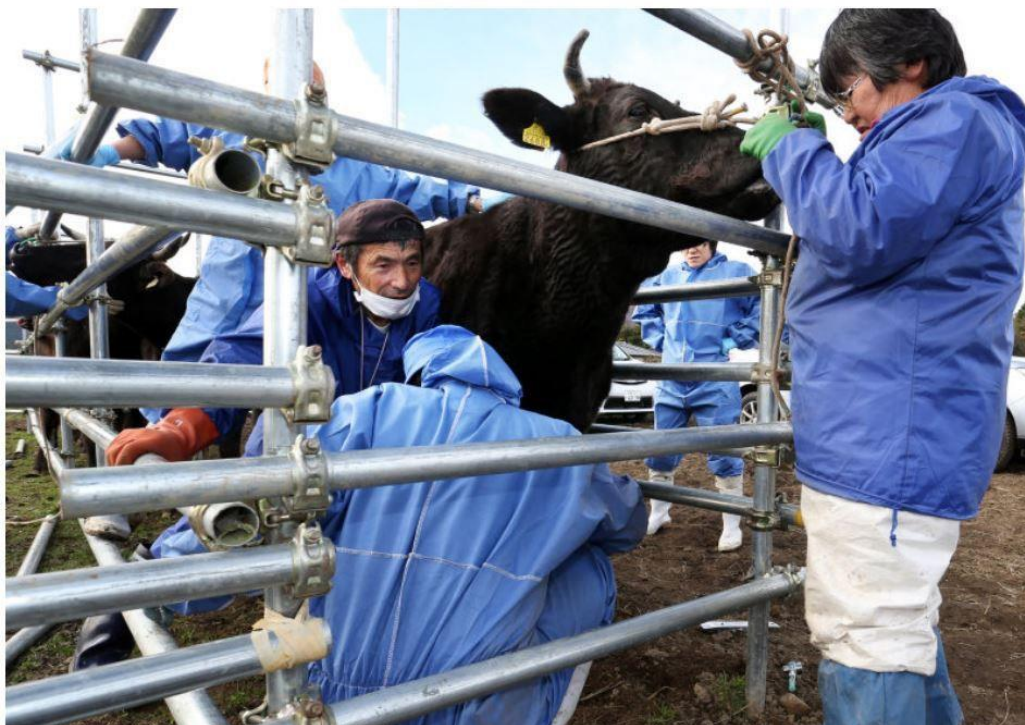
## Cows in difficult-to-return zones

### Cows tested for radiation in Fukushima 'difficult-to-return' zones

<http://mainichi.jp/english/articles/20151207/p2a/00m/0na/019000c>

December 7, 2015 (mainichi Japan)

Japanese version



Veterinarians perform blood tests and other examinations on cows in the town of Okuma, Fukushima Prefecture, on Dec. 6, 2015, in order to determine their levels of radiation exposure. (Mainichi)

FUKUSHIMA -- In an effort to determine the radiation exposure levels of cows living in "difficult-to-return" zones along coastal areas of Fukushima Prefecture following the 2011 Fukushima No. 1 Nuclear Power

Plant disaster, a local organization carried out a health survey of the animals on Dec. 6. via methods including blood sampling.

The testing was performed by the Society for Animal Refugee & Environment post-Nuclear Disaster, which is comprised of veterinary researchers from Iwate University and Kitasato University, along with local cattle farmers.

The organization has been voluntarily spearheading investigations since September 2012 into the impact of radiation exposure among cows living in evacuation zones.

At the farm of Mitsuhide Ikeda, 54, who has around 50 cows in the town of Okuma, the veterinarians soothed the cows by calling out "It's alright, it's alright," as they steadied the animals in the fenced-in enclosure. They then carried out the testing procedures, which focused primarily upon drawing the animals' blood.

After the blood samples are taken back to the universities, tests will be carried out such as measuring the concentration of radioactive cesium, as well as determining whether or not damage has occurred to the animals' DNA.

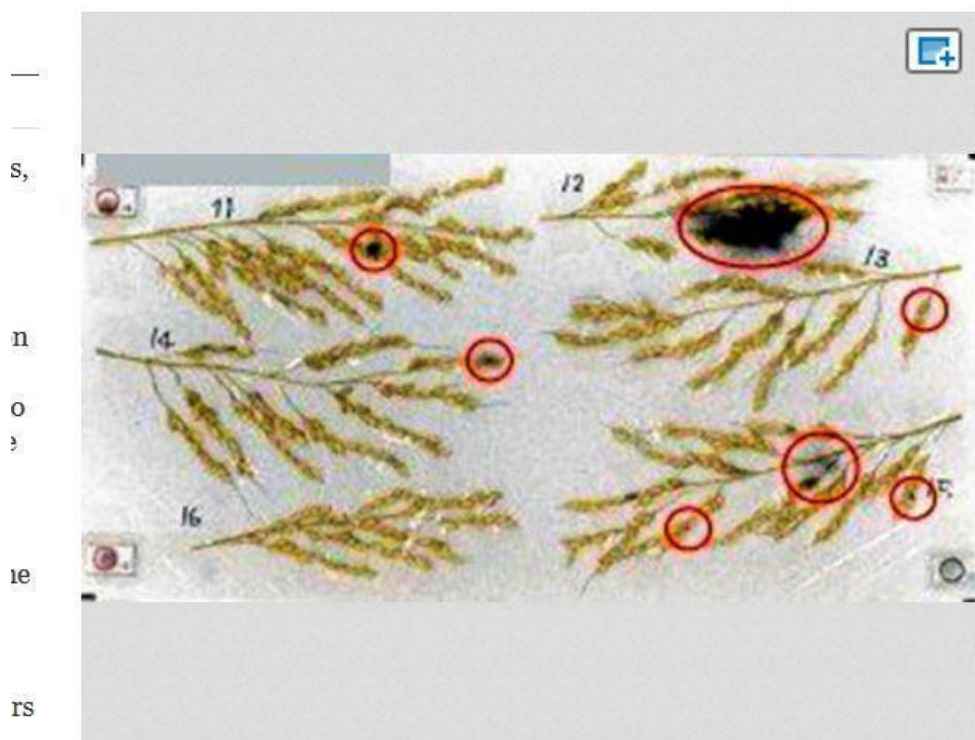
Similar testing was also carried out the previous day on Dec. 5 in the prefectural town of Namie. Over the course of the two days, a total of more than 120 cows were examined in both towns.

December 9, 2015

## Radioactive rice: Cover-up suspicions?

### **City to investigate NRA's conclusion that radioactive rice unrelated to Fukushima plant work**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512090084>



The black marks on rice stalks harvested in Minami-Soma show radioactive substances. (Provided by the Ministry of Agriculture, Forestry and Fisheries)

By MASAKAZU HONDA/ Staff Writer

MINAMI-SOMA, Fukushima Prefecture--Addressing **cover-up suspicions**, the city assembly here will investigate **how the Nuclear Regulation Authority concluded that work at the crippled Fukushima nuclear plant was not the cause of radioactive contamination of rice paddies.**

The assembly unanimously decided to investigate during a regular session that started on Dec. 2 in response to a petition submitted by a citizens group called “Genpatsu-jiko no Kanzen-baisho o Saseru Minami-Soma no Kai” (Minami-Soma’s group that requires complete compensation for the nuclear accident).

The group doubts the NRA’s assertion that the contamination of rice harvested in the city in 2013 was not related to debris-removal work at the Fukushima No. 1 nuclear plant. It has also expressed **outrage that the government has stopped trying to confirm the cause.**

“The government should continue a scientific investigation so that farmers can be engaged in rice farming without anxieties, and accurate information can be conveyed to citizens in evacuation,” the petition said. “Suspensions remain that the NRA concealed facts with the intention of reaching that conclusion.”

The agriculture ministry had raised the possibility that work to remove debris at the Fukushima plant in 2013 scattered radioactive substances that contaminated rice paddies in Minami-Soma more than 20 kilometers away.

However, **the NRA reached a different conclusion, saying that while radioactive substances were stirred up by the work, they remained within the nuclear plant compound,** south of Minami-Soma.

The NRA did not specify the likely source of the contamination, and the government discontinued the investigation.

The citizens group's petition, submitted to a regular assembly session in September, asked the city to scrutinize the process in which the NRA reached its conclusion and to gather views from several scholars. The NRA's public relations office declined to comment on the issue on Dec. 8.

"As the documents of the petition were not issued to the NRA, we cannot make a comment," the office told The Asahi Shimbun.

As for the issue of determining the cause of the contamination, NRA Chairman Shunichi Tanaka has said that it is a job for the agriculture ministry.

"I absolutely cannot accept (Tanaka's remark)," Minami-Soma Mayor Katsunobu Sakurai said.

December 9, 2015

**City to investigate NRA's conclusion that radioactive rice unrelated to Fukushima plant work**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512090084>

December 10, 2015

## High levels of radiation in tunnels

### Radiation spikes in Fukushima underground ducts

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The operator of the Fukushima Daiichi nuclear power plant says levels of radioactivity in underground tunnels have sharply risen.

Tokyo Electric Power Company has detected 482,000 becquerels per liter of radioactive cesium in water samples taken from the tunnels on December 3rd. That's 4000 times higher than data taken in December last year.

The samples also contained 500,000 becquerels of a beta-ray-emitting substance, up 4,100 times from the same period.

Around 400 to 500 tons of radioactive water, including seawater washed ashore in the March 2011 tsunami, is still pooled in the tunnels.

The tunnels lie next to a structure used to temporarily store highly radioactive water, which cooled melted nuclear fuel inside the damaged reactors.

TEPCO officials say it is unlikely the wastewater stored in the building has seeped into the tunnels.

They say the water level in the tunnels is higher than that in the building and measures are in place to stop the toxic water from leaking out.



They plan to investigate what caused the spike in radiation.

They say there has been no leakage out of the tunnels as radiation levels in underground water nearby have not risen.

## Nine million bags of radioactive waste kicking around

### Over 9 million bags of nuclear cleanup waste piled up across Fukushima Pref.

<http://mainichi.jp/english/articles/20151210/p2a/00m/0na/020000c>



Mounds of bags full of waste from the decontamination of areas around the Fukushima No. 1 nuclear plant are seen at a temporary storage site in Tomioka, Fukushima Prefecture, in this recent photo taken from a Mainichi Shimbun helicopter. (Mainichi)

The number of bags of waste from decontamination efforts around the stricken Fukushima No. 1 nuclear plant reached a little under 9.16 million as of the end of September according to Fukushima Prefecture and the Environment Ministry.

The 1-cubic-meter bags are found at some 114,700 interim storage or decontamination sites across the prefecture. In the town of Tomioka -- covered by a nuclear disaster evacuation order -- mounds of bags have grown so tall that they obscure the power shovels used to move and stack the waste, the black balls covering every sliver of landscape.

The bags of waste are typically stacked four layer high, with a fifth layer of uncontaminated soil laid on top to block radiation. Waterproof sheets are also used to stop rainwater from getting into the bags and becoming contaminated.

Negotiations with the towns of Okuma and Futaba -- both under evacuation orders -- to establish mid-term waste storage facilities there have been hard-going, and the start of construction is nowhere in sight.

## Watch this one-minute video!

### **Video : Bags of radiation-contaminated waste pile up in Fukushima**

<http://mainichi.jp/english/videos/>

December 11, 2015

## 4,000-fold radioactivity increase in Fukushima tunnels

### **Radioactivity level rises 4,000-fold in duct water at Fukushima plant**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512110041>

The concentration of radioactive materials in water in an underground duct at the Fukushima No. 1 nuclear plant soared 4,000 times from a year ago, Tokyo Electric Power Co. said.

TEPCO, operator of the crippled plant, said Dec. 9 that highly contaminated water stored at a nearby building may have leaked into the duct.

The utility said it found no increases in radioactivity levels in underground water in other areas, indicating the leak was limited to the duct.

According to TEPCO, about 420 tons of contaminated water amassed in the duct after the tsunami generated by the 2011 Great East Japan Earthquake inundated the plant with seawater.

A survey conducted on Dec. 11, 2014, found 94 becquerels of radioactive cesium-137 per liter in the underground duct. However, a survey on Dec. 3 this year found 390,000 becquerels per liter.

The cesium-137 reading in the contaminated water stored in the nearby building was 19 million becquerels per liter in a Nov. 3 survey.

TEPCO said it is considering pumping out the radioactive water in the duct and filling it with concrete.

December 14, 2015

## Terrorism & nukes

### **In the age of terrorism, disturbing questions remain on nuclear security**

[https://www.washingtonpost.com/opinions/nuclear-insecurity/2015/12/14/21a7f38a-938e-11e5-b5e4-279b4501e8a6\\_story.html](https://www.washingtonpost.com/opinions/nuclear-insecurity/2015/12/14/21a7f38a-938e-11e5-b5e4-279b4501e8a6_story.html)

By Editorial Board

THREE TIMES in the past 16 years — Bulgaria in 1999, France in 2001 and Moldova in 2011 — containers of highly enriched uranium have been seized by authorities, according to an article published online last month by the Center for Public Integrity, a nonprofit investigative news organization. In each case, the person holding the uranium said it was part of a larger cache for sale.

Such proffers have in the past been made by employees at nuclear facilities in the former Soviet Union who smuggled the material out of their plants. In 1992, a worker diverted approximately 3.3 pounds of weapons-grade uranium from a facility in Russia, taking it home bit by bit, storing it on his balcony. He was arrested at the local train station, planning to travel to Moscow to sell it.

But the three containers of highly enriched uranium have something in common that until now has been kept secret. According to the article, forensic analysis by U.S. and French nuclear scientists strongly suggests that the materials came from the same source. The analysis indicates all three samples were produced in the early 1990s at a Russian nuclear facility, the Mayak Production Association, located near the town of Ozersk in the Ural Mountains region of Chelyabinsk. The uranium could have been removed in the chaotic early years after the Soviet Union collapsed, when many such facilities were poorly guarded, and it may now be anywhere.

The theft raises the unsettling possibility that someone has tried three times since 1999 to sell highly enriched uranium that could be used for a nuclear explosion or a dirty bomb. Seven people have been arrested in the three cases, but officials described them as low-level functionaries in a shadowy international ring with Moldovan and Russian connections; the seller's identity is not known. This is the most worrisome unresolved case of illicit trafficking in such materials anywhere in the world, the article says. It is a disturbing uncertainty in the age of terrorism.

For 2½ decades, the United States has made a serious global effort to prevent nuclear materials from falling into the wrong hands. Real progress has been achieved in securing and reducing the use of civilian highly enriched uranium, but by one estimate, 61 metric tons of it remain spread across more than 100 facilities in 25 countries. **The more difficult area for action is fissile material in military facilities, with 1,300 metric tons of highly enriched uranium and 500 metric tons of plutonium remaining worldwide at the end of 2013 — enough for tens of thousands of bombs.**

President Obama launched nuclear security summits in 2010, which helped galvanize cleanup and lockdown efforts, but much remains undone as the last summit approaches next spring. Meanwhile, cooperation with Russia has collapsed. Nuclear security is too important to be neglected. It is not just in the interests of the United States, but vital to every country that nuclear materials be made safe and kept far away from terrorists.

## Murphy's Law lives in Fukushima

### Fukushima Amplifies Murphy's Law

<http://www.counterpunch.org/2015/12/14/fukushima-amplifies-murphys-law/>

by Robert Hunziker

**Murphy's Law has found a permanent home in Fukushima:** "Anything that can go wrong will go wrong."

For instance, only recently, radioactive cesium in tunnels at Fukushima suddenly spiked by more than 4,000 times similar measurements from one year ago. This spooky/huge spike in radiation levels hit 482,000 Becquerels per liter. TEPCO intends to investigate the reason behind the enormous anomalous increase, *Radiation Spikes in Fukushima Underground Ducts*, NHK World, Dec. 9, 2015. Over the course of a year, 4,000 times anything probably is not good.

Not only that but the barrier constructed at the Fukushima nuclear power plant to hopefully prevent contaminated water from leaking into the ocean is tilting and has developed a crack about 0.3 miles in length along its base. The wall is 0.5 miles long and 98 feet below ground.

An ocean barrier, indeed: "Higher levels of radiation from Japan's 2011 Fukushima nuclear accident are showing up in the ocean off the west coast of North America, scientists from the Woods Hole Oceanographic Institution reported," *Higher Levels of Fukushima Radiation Detected Off West Coast*, Statesman Journal, Dec. 3, 2015. Fortunately, so far, the detected levels still remain below U.S. government-established safety limits.

In the meantime, TEPCO battles one of the most perplexing disasters of all-time with an average number of daily workers more than 7,000. The difficulty of procuring workers at the site is beyond imagination. Homeless people are hired off the streets to do the dangerous decontamination work.

## **The Tokyo 2020 Olympics**

The situation better get better really soon because the Olympics are scheduled for 2020, which brings to mind perilous lost corium, the sizzling hot melted core in Plant #2, that hopefully, keeping one's fingers crossed, has not burrowed into the ground, spreading deadly isotopes erratically, ubiquitously throughout. Still, nobody knows where this Missing Corium-Waldo of the Nuclear World is located.

Meanwhile, Greenpeace/Japan accuses the International Atomic Energy Agency (IAEA) of downplaying the health risks of the 2011 Fukushima disaster and accuses the agency of acting in concert with Japanese Prime Minister Shinzo Abe's attempts to "normalize" the disaster, *Greenpeace Japan: IAEA Downplays Dangers of Fukushima Disaster*, Sputnik News, Feb. 9, 2015. Hurry, hurry, the Olympics is coming!

One clever approach to the problem of too much radiation is to increase the "allowable limits": "The permissible annual level of radiation exposure has been dangerously heightened in Japan after the March 11th accident. One (1) millisievert (mSv) has been elevated to 20 mSv for residents in affected areas. The government increased the annual limit for nuclear workers' radiation exposure from 100 mSv to 250 mSv in 'emergency situations,' Mitsuhei Murata (Executive Director of Japan Society for Global System and Ethics and former Japanese ambassador to Switzerland) *Nuclear Disaster and Global Ethics*, UN World Conference on Disaster Risk Reduction, March 16, 2015.

When the "permissible level" of radiation was initially moved higher, the Japan Medical Association stated: "The scientific basis for choosing the maximum amount of 20 mSv in the band of 1 to 20 mSv is not clear." Furthermore, according to Physicians for Social Responsibility, there is no safe level of radiation. Apropos the Fukushima situation: "It is unconscionable to increase the allowable dose for children to 20 millisieverts (mSv). Twenty mSv exposes an adult to a 1 in 500 risk of getting cancer; this dose for children exposes them to a 1 in 200 risk of getting cancer. And if they are exposed to this dose for two years, the risk is 1 in 100. There is no way that this level of exposure can be considered 'safe' for children." Recent studies confirm "exposure to low levels of radiation can cause cancer," specifically, "No matter whether people are exposed to protracted low doses or to high and acute doses, the observed association between dose and solid cancer risk is similar per unit of radiation dose," (Source: British Medical Journal,



Press Release, *Low Doses of Ionizing Radiation Increase Risk of Death from Solid Cancers*, International Agency for Research on Cancer, WHO, Oct. 21, 2015).

In sharp contrast to Japan's position, Chernobyl's officialdom has a different take on "permissible annual radiation exposure," specifically: "The radiation limit that excluded people from living in the 30km zone around the Chernobyl nuclear plant exclusion zone was set at 5mSV/year, five years after the nuclear accident. Over 100,000 people were evacuated from within the zone and will never return," (Greenpeace Japan). Never ever return!

Nuclear disasters don't go away easily. For example, Chernobyl is already facing a brand new crisis. The durability of the original decaying blighted sarcophagus expires within the next 12 months. However, the new replacement sarcophagus, the world's biggest-ever metallic dome, will not be accomplished in time as they are short of funds (615million EUR).

In addition to Ukraine's internal strife with pro-Russian citizens, the country has serious financial difficulties. All of this amounts to one more "spoke in the wheel" against nuclear reactor proliferation (Incidentally, China has 400 reactors on the drawing board). Who knows if and when a crippled reactor ends up in the hands of a financially strapped country? Then what?

Already, Ukraine has 15 nuclear reactors standing tall, so far, amongst whizzing bullets and powerful rockets. Dismally, Ukraine has conceivably become a nuclear holocaust tinderbox in the midst of cannon fire, rumbling tanks, and surface-to-air missiles, for example, Malaysia Airlines Flight 17 was shot down by a missile, supposedly by accident, on July 17, 2014, all 298 on board died.

Meanwhile, back in Japan, raising the level of permissible annual radiation exposure does not escape international notice. According to Dr. Ian Fairlie, former head of the Secretariat of the UK Government's CERRIE Committee on Internal Radiation Risks: "The Japanese government goes so far as to increase the public limit for radiation in Japan from 1 mSv to 20 mSv per year, while its scientists are making efforts to convince the International Commission on Radiological Protection (ICRP) to accept this enormous increase."

But, wait a moment; the Olympic Committee has already designated Tokyo 2020. Is it possible the IOC has the cart ahead of the horse, maybe way ahead?

As for the newly established higher acceptable Japanese limit for radiation: "This is not only unscientific, it is also unconscionable," Dr. Fairlie, *Unspoken Death Toll of Fukushima: Nuclear Disaster Killing Japanese Slowly*, Sputnik International, Aug. 8, 2015. After all, on a factual basis, "unscientific and unconscionable" are strong indictments.

Yet, the Olympic committee has already approved Tokyo 2020, and people from around the world will be making plans to attend. Withal, if the Olympic Committee is okay with Japan's capricious radiation conditions, then shouldn't everybody else be okay with it too? Well....

All of which brings to mind: If Fukushima's a canary in the mineshaft that exposes nuclear power's hidden dirty underbelly, meaning, once things go wrong they really go wrong, adhering to Murphy's Law, then what of the potential consequences of big ole nuke plants in war zones? How would Murphy's Law apply in a war zone? The most comfortable answer is: Don't even think about it.

Still, the world's 430 nuclear reactors are "big fat sitting ducks." According to former ambassador Murata, nuclear reactors are "the world's most serious security problem."

Thus, Fukushima may be more than the poster child of nuclear power's fragility vis a vis extreme forces of nature; it's also a surrogate poster child for lurking dangers behind and within terrorism and within war zones when "anything that can go wrong will go wrong," for example, a downed airliner over Ukraine.

### **Nuclear Reactors are as Dangerous as Nuclear Weapons (Murata)**

Rockets have been fired at nuclear facilities in Israel. " Hamas claimed responsibility for the rockets, stating that it had been attempting to hit the nuclear reactor. Militants from Hamas's Qassam Brigades said they had launched long-range M-75 rockets towards Dimona" (The Jerusalem Post, July 9, 2014). As mentioned earlier, Ukraine is home to 15 nuclear reactors in the midst of a war zone. What if a missile accidentally, or purposefully, hits a nuclear reactor? Does Fukushima provide any clues as to the consequences of such a disaster?

Assuming Fukushima is truly a harbinger of how remarkably well nuclear disasters harmonize with, in fact, cohere to Murphy's Law, it probably implies that "all bets are off."

*Postscript: "The future of the Olympic Games is at stake. It is as a believer in the spirit of the Olympic Games and the Olympic Movement that I am pleading for an honorable retreat, and this, in order for Japan to devote maximum efforts to controlling the Fukushima crisis," Mitsuhei Murata, Former Japanese Ambassador to Switzerland and Executive Director, Japan Society for Global System and Ethics, Tokyo, October 28, 2015.*

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December 16, 2015

## Takahama: Evacuation plan

### Evacuation plan compiled for residents around Takahama nuclear plant

<http://www.japantimes.co.jp/news/2015/12/16/national/evacuation-plan-compiled-residents-around-takahama-nuclear-plant/#.VnE5cL8R-ot>

Kyodo

The Cabinet Office and three western prefectures finalized an evacuation plan Wednesday for residents living within 30 kilometers of Kansai Electric Power Co.'s idled Takahama nuclear plant.

The proposal is expected to be approved on Friday by the Nuclear Emergency Preparedness Commission that is chaired by Prime Minister Shinzo Abe. **It is the first evacuation plan covering neighboring prefectures and covers 180,000 people living within the defined area.**

The No. 3 and No. 4 reactors at the Takahama plant in Fukui Prefecture have cleared new safety regulations set after the 2011 Fukushima nuclear disaster and are ready to restart operations. But a court injunction in April banned Kansai Electric from bringing them back online.

**The Fukui District Court will make a decision next week on the objection filed by the utility over the injunction.**

Industry minister Motoo Hayashi, who is in charge of the country's energy policy, is expected to meet Fukui Gov. Issei Nishikawa on Sunday. The governor has yet to announce his decision on the restart approval for the Takahama plant.

Most reactors remain offline in Japan. The government wants nuclear power generation to supply at least 20 percent of Japan's overall electricity by 2030.

The meeting between the Cabinet Office and Fukui, Kyoto and Shiga prefectures was held in Tokyo on Wednesday.

Officials from the three prefectures "confirmed the plan is reasonable," Okinobu Hirai, director general of the Cabinet Office, said.

The plan designates evacuation routes and facilities to be used as shelters as well as what measures will be taken for people who cannot escape over land. The Takahama plant, about 380 km west of Tokyo, is located at the base of the Otomi Peninsula.

## End of disaster-response radio station in Onagawa

### Disaster-response radio station set up after 2011 quake to end operations

<http://mainichi.jp/english/articles/20151216/p2a/00m/0na/011000c>

ONAGAWA, Miyagi -- A temporary disaster-response radio station set up after the 2011 Great East Japan Earthquake will cease operations in March next year, the station and the local municipal government here announced on Dec. 16.

The town of Onagawa, which had a population of around 10,000, lost 827 people as well as government buildings, shops and houses when it was hit by the post-quake tsunami. On request from the municipal government, the station, called "Onagawa Saigai FM," began broadcasting from April 21, 2011. Various locals have been involved in its programs, from junior high students to fishermen to former junior high school teachers.

The station has toured temporary housing for evacuees and broadcast the stories of the people living there, given out lifestyle information for evacuees, and passed on news stories to brighten the mood of the town.

Public broadcaster NHK created a television drama based on the station, and many celebrities such as the pop group Momoiro Clover Z have regularly come to give their support to the station. Station representatives also say that it has received a large amount of donations from around the nation due to its simultaneous Internet stream.

Tomohiro Oshima, 42, who lives in Tokyo but continues to put together shows for the station as a volunteer, says, "It is a miracle that the station has been able to continue for these five years, primarily running on donations. I want to thank the people who have supported us. I also want to use the knowledge I have gained to continue to give cheer to Onagawa."

Onagawa Mayor Yoshiaki Suda, who has himself appeared in the station's programming, said, "Onagawa Saigai FM has accomplished a lot, but our town's recovery has proceeded, and the time has come for the station to change into a new form."

As the town has recovered from the disaster, local station staff have started wanting to change jobs, and it has become difficult for the station to maintain the personnel it needs.

Other temporary disaster-response radio stations are also standing at a crossroads as the fifth anniversary of the earthquake and tsunami approaches. In Miyagi Prefecture a station for the city of Kesennuma is aiming to shift to a community station next fiscal year, while a station for the town of Yamato is looking to remain a disaster-response station for another year.

December 17, 2015

## Swans back in Fukushima

### Return of swans a welcome sight in Fukushima town emptied by nuclear disaster

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512170001>



Two former Okuma town officials feed swans at the mouth of Kumagawa river in Okuma, Fukushima Prefecture, on Dec. 12. (Satoru Semba)

By YOSHITAKA ITO/ Staff Writer

OKUMA, Fukushima Prefecture--A flock of swans have returned to this coastal Fukushima town to pass the winter, **giving hope to residents who remain evacuated from Okuma** since the disaster unfurled at the nearby Fukushima No. 1 nuclear power plant in 2011.

At the mouth of the Kumagawa River in Okuma, located just 3 kilometers from the crippled plant, 17 swans have made it their winter haven since late November.

A volunteer patrol group comprising retired Okuma town officials feed the idyllic birds as part of their daily routine in the hopes that their return will herald that of all the approximately 10,000 evacuated residents.

“It is comforting to see these birds returning to this town **as if nothing had happened here**,” said Tsunemitsu Yokoyama, 63, one of the six members of the group, which calls itself the “old men’s squad.” Dressed in protective suits, Yokoyama and another member of the group fed rice to the swans on Dec. 12 at the river’s mouth. A number of large concrete blocks from a breakwater that was wrecked by the towering tsunami triggered by the Great East Japan Earthquake on March 11, 2011, remain scattered about the area.

After the triple meltdowns at the nuclear plant, a large portion of the town, which co-hosts the crippled plant with Futaba, was designated as difficult-to-return zones, forcing all residents to scatter across the country.

“I wish the town could reward these birds with a resident certificate or something because they are eager to live here instead of all of us,” said Yokoyama, the former chief of the town’s disaster recovery section.

December 18, 2015

## Takahama evacuation plan approved

### Government OKs evacuation plan in key step for Takahama nuclear plant restart

<http://www.japantimes.co.jp/news/2015/12/18/national/government-oks-evacuation-plan-key-step-takahama-nuclear-plant-restart/#.VnPTfr8R-if>

Kyodo

The central government approved an evacuation plan Friday for residents near an idled nuclear power plant on the Sea of Japan coast, as it steps up efforts to bring more reactors back online following the 2011 Fukushima nuclear crisis.

A government commission gave the nod to an emergency plan for 180,000 people living within 30 kilometers of Kansai Electric Power Co.’s Takahama nuclear plant in Fukui Prefecture in the event of a serious accident.

The plan was presented to the Nuclear Emergency Preparedness Commission, chaired by Prime Minister Shinzo Abe, after it was finalized earlier in the week by the Cabinet Office as well as Fukui and neighboring Kyoto and Shiga prefectures.

“Should an accident occur, the government will take authority in responding to it,” Abe said at a commission meeting.

The approved evacuation plan — the first covering neighboring prefectures — includes evacuation routes and facilities to be used as shelters, as well as rescue measures for people who may be left without an overland escape route. The Takahama plant, about 380 km west of Tokyo, is located at the base of the Otomi Peninsula.

The approval is an important step forward for the power company to resume operations at the plant after its No. 3 and No. 4 reactors cleared stricter safety regulations introduced after the Fukushima disaster.

The restart of the reactors would come after two units at Kyushu Electric Power Co.'s Sendai nuclear plant in Kagoshima Prefecture went back online this year in the first nuclear power generated under the tighter safety rules.

However, a court injunction in April has banned Kansai Electric from reactivating the Takahama units over safety concerns. The Fukui District Court will make a decision next week on the utility's appeal against the decision.

Despite strong public opposition to the restarts, the government is aiming for at least 20 percent of the nation's electricity to come from nuclear power by 2030.

On Thursday, the Fukui Prefectural Assembly gave its consent to the restart of the two reactors at the Takahama plant.

Industry minister Motoo Hayashi, who in charge of the country's energy policy, will likely meet with Fukui Gov. Issei Nishikawa on Sunday, with the governor expected to later express approval for the restarts, according to a source familiar with the matter.

"We will continue to make efforts to seek (public) understanding in a cautious manner," Hayashi said at a news conference.

## **Govt. OKs evacuation plan for Takahama plant**

[http://www3.nhk.or.jp/nhkworld/english/news/20151218\\_21.html](http://www3.nhk.or.jp/nhkworld/english/news/20151218_21.html)

The Japanese government has decided on an evacuation plan for residents around the Takahama nuclear power plant in Fukui Prefecture, on the Sea of Japan.

The plan, which was approved on Friday at a meeting of the government task force on nuclear disaster preparedness, was drawn up by the central government as well as local authorities including Fukui Prefecture.

How to evacuate residents in the event of an accident poses a grave challenge to the authorities, as around 180,000 people live in the 30-kilometer zone that covers the 3 prefectures of Fukui, Kyoto and Shiga.

The plan includes securing accommodations for evacuees should they have to flee beyond prefectural boundaries.

At the meeting, Prime Minister Shinzo Abe said safety is the top priority. But he added that nuclear power is indispensable if resource-poor Japan is to secure a stable energy supply.

Fukui Governor Issei Nishikawa says he will judge whether to approve plans to restart 2 reactors at the Takahama plant after considering a final report of a prefectural panel of experts as well as the views of the central government.

Meanwhile, a court injunction has been in place since April barring the reactors from being brought online.

The Fukui District Court is expected to issue a decision on Thursday of next week on an objection filed by Kansai Electric Power Company, the operator of the Takahama plant.

## Sendai: Another 5 years to complete safety measures

### Nuclear plant to tighten anti-terror measures

[http://www3.nhk.or.jp/nhkworld/english/news/20151218\\_05.html](http://www3.nhk.or.jp/nhkworld/english/news/20151218_05.html)

The operator of the Sendai nuclear power plant has applied for **construction of a standby control room that would go into operation in the event of a terror attack**. The Sendai plant, in southwestern Japan, is the only nuclear power station online in the country.

Kyushu Electric Power Company submitted the application to the Nuclear Regulation Authority on Thursday.

One of the new regulations for nuclear plants set in 2013 requires an operator to set up a second control room at least 100 meters away from the reactor. This would allow employees to retain control of the plant even if the main room is destroyed by terrorists.

It also requires construction of an additional reactor cooling facility, also away from the reactor, for an emergency.

Kyushu Electric Power says it plans to set the second control room inside the cooling facility and that the control room will handle both the No.1 and No.2 reactors in the event of an emergency.

The regulator is requesting the operator to complete the facility **by March 2020** for the No.1 reactor, and by May in the same year for the No.2 reactor at the latest.

## Too much salt for water to be decontaminated

### Steel barrier creating more contaminated water

[http://www3.nhk.or.jp/nhkworld/english/news/20151218\\_27.html](http://www3.nhk.or.jp/nhkworld/english/news/20151218_27.html)

The operator of the Fukushima Daiichi nuclear plant says a steel barrier that it built along the plant's embankment is causing an unexpected problem.

Tokyo Electric Power Company, or TEPCO, **installed the steel piling wall in October to prevent contaminated groundwater from flowing into the sea.**

The utility had planned to pump up the blocked water, remove radioactive materials from most of it, and release it into the sea.

But on Friday, TEPCO officials told nuclear regulators that **the water has too high a salt content to be processed by decontamination equipment.**

They also said **the amount of pumped-up water was larger than expected.**  
**The officials say workers are therefore releasing the water not into the sea, but into reactor buildings. They say the amount is about 400 tons per day.**

The utility had previously been reducing the flow of water into the plant's buildings.

Workers have been pumping up groundwater from wells inside the compound, and had managed to reduce its inflow into buildings from 400 tons to 200 tons per day.

TEPCO says it plans to pump up more groundwater upstream so that less reaches the embankment.

It says it will also try to process the salty water by monitoring changes in its quality.

## Sendai: Another 5 years to complete safety measures (2)

### **Terror attack response centers for Kyushu Electric's restarted reactors announced**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201512180071](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201512180071)

By JUNICHIRO NAGASAKI/ Staff Writer

FUKUOKA--Kyushu Electric Power Co. will build off-site emergency response centers to cope with possible terrorist attacks on its two recently restarted nuclear reactors in Kagoshima Prefecture, the utility announced Dec. 17.

The company applied to the Nuclear Regulation Authority the same day for permission to establish the centers at the Sendai nuclear power plant in Satsuma-Sendai.

Kyushu Electric plans to put 95 billion yen (\$775 million) into the project. The centers' installation is required under the nuclear safety standards that took effect following the Fukushima disaster in 2011. Plans include an emergency control room from which workers can cool reactors via remote control in the event of an aircraft crashing into a nuclear facility in a terrorist attack, and other emergencies.

The project also includes the installation of a filtered vent that can lower the amount of radioactive materials spewing into the atmosphere in a nuclear accident.



Kyushu Electric plans to complete construction by **2020**. The nation's nuclear power plant operators were originally obliged to set up an emergency response center by July 2018, five years after the implementation of the safety regulations.

However, **the NRA plans to extend the deadline because of the slow progress on its screening of nuclear facilities.**

As a result, the deadline for an emergency response center for the No. 1 reactor of the Sendai plant is expected to be March 2020, and May 2020 for the No. 2 reactor.

Kyushu Electric also announced the additional construction of storage batteries, which will serve as an emergency power source.

**The company said it would not build a new quake-proof building as a nuclear accident emergency response center because an alternative that has already been set up at the plant meets safety regulations.**

However, **the company will construct a new quake-resistant building featuring accommodations and other facilities and secure functions to support the alternative emergency response center.**

The move marks the fourth time a utility has submitted such an application to the Japan's nuclear watchdog, following similar applications by others including Kansai Electric Power Co. for its No. 3 and No. 4 reactors at Takahama nuclear power plant in Fukui Prefecture.

Kyushu Electric's No. 1 reactor at the Sendai nuclear power plant became the first to be restarted in Japan under tougher safety regulations on Aug. 11, followed by the No. 2 reactor, which was brought back online on Oct. 15.

December 20, 2015

## Nuclear disaster drill near Sendai plant

### Nuclear disaster drill held near Japan's only rebooted plant

<http://mainichi.jp/english/articles/20151220/p2g/00m/0dm/018000c>

KAGOSHIMA (Kyodo) -- A nuclear disaster drill was held Sunday around the country's sole running nuclear power plant in southwestern Japan, following its reactivation earlier this year.

About 3,600 officials and residents took part in the event to prepare for the possibility of a serious accident within 30 kilometers of Kyushu Electric Power Co.'s Sendai plant in Kagoshima Prefecture. The last time a major drill was held around the plant was in October 2013.

The drill assumed that a strong earthquake of intensity upper 6 on the Japanese scale of 7 had caused the plant to lose power sources and become unable to cool its reactors. About 1,200 residents within 5 km from the plant were evacuated by bus and other vehicles.

People farther than 5 km but within 30 km were instructed to move in accordance with a prefectural-run system to determine how the wind was blowing to avoid areas with radioactive fallout.

At the two-reactor Sendai plant, located in the city of Satsumasendai, the No. 1 reactor resumed operation in August and the No. 2 unit in October. All other nuclear reactors in Japan remain offline in the aftermath of the 2011 Fukushima nuclear disaster.

## **Nuclear disaster drill held near Japan's only rebooted plant**

<http://www.japantimes.co.jp/news/2015/12/20/national/nuclear-disaster-drill-held-near-japans-rebooted-plant/#.VnbtQFIR-id>

Kyodo

KAGOSHIMA – Following its reactivation earlier this year, a nuclear disaster drill was held around the country's sole working nuclear power plant on Sunday.[...]

## **Nuclear disaster drill held in Kagoshima**

[http://www3.nhk.or.jp/nhkworld/english/news/20151220\\_20.html](http://www3.nhk.or.jp/nhkworld/english/news/20151220_20.html)

About 3,600 people took part in a nuclear disaster drill around a power plant in southwestern Japan on Sunday.

The No.1 reactor of the Sendai nuclear plant in Kagoshima Prefecture was restarted in August. It was the first one to meet the new regulations introduced after the 2011 accident in Fukushima. The plant's No.2 reactor resumed operations in October.

Sunday's drill assumed that a massive earthquake had cut off power, causing radioactive materials to leak outside the plant.

The video conferencing system at the off-site center is meant to be used for communicating with the prefectural government. But people's voices couldn't be heard for 3 minutes at the start of the drill.

Evacuation procedures were also rehearsed. Residents of a district in Satumasendai City, which is less than 5 kilometers from the plant, were given an evacuation order in the morning and gathered at a meeting point before heading for Kagoshima City.

Some people who live more than 5 kilometers from the plant were ordered to evacuate in the afternoon. Four elderly residents of a care home boarded a bus and a special vehicle, accompanied by employees, to evacuate to another facility.

The prefectural government plans to review its evacuation plan as some residents have questioned its effectiveness.

## **Nukes & terrorism**

### **Nuclear power plants feared vulnerable to terrorist groups**

<http://www.japantimes.co.jp/news/2015/12/20/national/nuclear-power-plants-feared-vulnerable-terrorist-groups/#.VnftC1IR-id>



Members of the Special Assault Team wearing radiation suits take part in a drill at the Fukushima No. 2 nuclear power plant on May 11, 2013. | KYODO

by Reiji Yoshida  
Staff Writer

Security at France's 58 nuclear power plants was purportedly raised to its highest level last month as a result of the terrorist attacks in Paris, stoking concern over the safety of Japan's nuclear facilities. After the triple meltdown in Fukushima in 2011, Japan shut down all 48 of its viable commercial reactors in light of the crisis. But attempts are now being made to bring many back online. And despite opposition from anti-nuclear activists and groups, two reactors in Sendai, Kagoshima Prefecture, were restarted this fall and summer, with applications for 26 more pending Nuclear Regulation Authority approval.

"I can understand there are concerns after terrorist attacks like the ones in Paris," said NRA Chairman Shunichi Tanaka at a news conference on Nov. 18. "For now, we will tighten security measures by asking (for the) cooperation of related organizations like the police," he said.

But the NRA's recent decision to revise its requirements to cope with terrorism has fueled fears over potential attacks on Japanese plants.

The NRA's new safety rules, introduced in July 2013 based on lessons learned from the Fukushima crisis, gave nuclear plant operators five years to set up special backup facilities to cope with possible attacks. The rules require the building of emergency backup operation rooms, backup water pumps and multiple water intake channels leading to reactor cores. If terrorists managed to cut power and paralyze the critical functions that keep the fuel rods cool, it could cause a meltdown and release a vast amount of radioactive material — just like when tsunami knocked out the cooling system of the Fukushima No. 1 power plant, triggering meltdowns at three of the six reactors there.

But at its Nov. 13 session, the NRA delayed the starting date of the five-year period, giving utilities extra time to make the deadline.

The time by which Kyushu Electric Power Co. has to build backup facilities for its two reactors recently reactivated at the Sendai nuclear plant, for example, was extended nearly two years to March 2020. Anti-nuclear activists argue that preparations to counter potential attacks should start immediately, particularly since Prime Minister Shinzo Abe's administration recently enacted a law that allows the Self-Defense Forces to feasibly take part in military operations with the United States.

"The terrorist threat to Japan has increased more than ever because of the (legalization of using the) right to collective self-defense," said Hideyuki Ban, co-representative of the Citizens' Nuclear Information Center in Tokyo.

Experts on the Middle East say the law makes Japan more visible to terrorists like the Islamic State group, which is believed to be targeting U.S. allies.

"The Islamic State has warned the pagan nation of Japan against further endangering lives of Japan's citizens through Japanese support of the American crusade," the jihadi extremist group said in the latest issue of its English-language online magazine Dabiq.

"Prior to Shinzo Abe's thoughtless pledge of support for this crusade, Japan was not on the list of priorities to be targeted by the Islamic State," the group said.

Even before the Fukushima crisis, the U.S. expressed serious concern over the apparent lack of security at Japanese nuclear plants.

In May 2011, the whistle-blower website WikiLeaks released a number of documents it claimed were cables sent from the U.S. Embassy in Tokyo to Washington in 2006 and 2007.

In one cable dated Feb. 26, 2007, the U.S. expressed concerns by reporting "armed national police are present at certain nuclear power plants . . . in Japan, but they do not guard all facilities and contract civilian guards are prevented by law from carrying weapons."

Another cable, dated Nov. 2, 2006, referred to an anti-terrorism drill held at a nuclear fuel reprocessing plant in the village of Tokai, Ibaraki Prefecture. It reported that some Japanese officials "pointed out flaws in the drill, saying it was unrealistic because participants had advance copies of the scenario."

Kevin Maher, who served as the minister-counselor for science and technologies and environmental affairs at the U.S. Embassy in Tokyo, was among the U.S. officials surprised to learn of the apparent lack of armed security guards at Japanese nuclear plants.

In a 2003 meeting in Tokyo, Maher said he and a visiting White House official at the time urged senior officials at Japan's now-defunct Nuclear and Industrial Safety Agency to deploy armed guards to tighten security.

"We were explaining that you need to be prepared for an armed terrorist attack," Maher said in a recent interview with The Japan Times. "Literally their answer was, 'No, because guns are illegal in Japan,'" he added.

Maher, however, stressed he now believes Japanese security measures at nuclear plants have been greatly strengthened under the NRA's new safety standards and the more realistic crisis-management approach taken by the Abe administration.

Maher asserted that nuclear plants are now more tightly protected and there are many other "softer" targets in Japan that would be easier for terrorists to assault, such as those attacked in Paris last month. "I think there are other targets that terrorists would probably aim for rather than nuclear power plants," he said.

The National Police Agency says it has beefed up security guards at nuclear power plants. According to NPA's report on security in 2015, special security units armed with submachine guns, rifles and specially reinforced armored vehicles have been deployed to guard nuclear-related facilities 24 hours a day.

There are a total of 1,900 such security officers across the country.

However, **neither the NPA nor the NRA disclosed the exact number assigned to guard the plants**, making it difficult to assess the plan.

For his part, Hideyuki Ban, with the Citizens' Nuclear Information Center, said **Japan should not reactivate more reactors, arguing none are designed to withstand suicidal attacks with large planes like the 9/11 attacks in New York and Washington in 2001.**

"The steel plate of the primary containment vessel is only about 3 cm, and the outside concrete layer is not very thick," Ban pointed out.

**"A large airplane would burst right through a containment vessel if it was directly hit."**

The Japan Times asked the NRA and Tokyo Electric Power Co. to comment on Ban's comments, but both declined.

December 21, 2015

## Forests won't be decontaminated

### Forests will not be decontaminated

[http://www3.nhk.or.jp/nhkworld/english/news/20151221\\_09.html](http://www3.nhk.or.jp/nhkworld/english/news/20151221_09.html)

NHK has learned the government may not conduct radioactive decontamination of forested land in Fukushima and other prefectures that is far from residential areas. Many forests in the region were polluted after the accident at the Fukushima Daiichi nuclear plant in March 2011.

Sources close to the government say it may adopt a new policy because **removing fallen leaves as part of the cleanup may have other negative effects, such as loss of top soil.**

**The government's decontamination work is now basically limited to forest areas within 20 meters of communities.** It had not made it clear what would be done with forests in wider regions.

A government panel has been studying how to decontaminate the forested land.

The sources say the panel's study of Fukushima Prefecture shows no radioactive materials that could adversely affect inhabited areas are dispersing from forests.

They say **the government is afraid that removing radiated fallen leaves in large areas will expose contaminated soil that can be washed away.**

Instead of decontamination work, the sources say, the government plans to **set up wooden fencing on steep hills to stop soil erosion and to make the forests healthier by thinning.**

The government will seek approval of such measures from experts on Monday.

## Rice-cakes from this year's test harvest

### Farmers make rice-cakes from test harvest

[http://www3.nhk.or.jp/nhkworld/english/news/20151221\\_17.html](http://www3.nhk.or.jp/nhkworld/english/news/20151221_17.html)

The residents of an area still off limits since the 2011 Fukushima Daiichi nuclear accident have produced rice cakes from this year's test harvest.

The people of Minamisoma City's Odaka district are hoping the government's evacuation order will be lifted in April of next year. At the moment they are allowed to return to their homes, but only briefly.

Sunday's event was staged by farmers who are test-growing rice there as well as volunteers supporting the residents' upcoming return to the area.

They all gathered in front of the town's railway station and pounded about 30 kilograms of steaming rice into cakes.

The sound of mallets hitting the steamed rice echoed loudly along the street. The cakes were then seasoned and served to visitors.

**The rice used in the event, like all rice shipped from Fukushima, had been cleared of radioactive materials. But farmers don't sell their test crops.**

A 5-year-old boy there with his parents said he loved rice cakes flavored with sugar and roasted soy-bean powder.

They later offered some rice cakes to a local shrine to give thanks for the harvest and to pray for a good yield next year.

One of the farmers, Koichi Nemoto, said the event made him happy and that he will continue to grow rice next year.

## Decontaminated soil to be turned into building material??

### Model biz that reuses Fukushima soil planned

[http://www3.nhk.or.jp/nhkworld/english/news/20151221\\_23.html](http://www3.nhk.or.jp/nhkworld/english/news/20151221_23.html)

The Japanese government is planning to launch a business plan to re-use decontaminated soil from Fukushima Prefecture as construction material.

The Environment Ministry disclosed the draft plan on Monday.

The 2011 nuclear accident at Fukushima Daiichi power plant tainted soil in the region with radioactive substances.

Decontaminated soil will be kept in intermediate storage facilities within Fukushima Prefecture. It will be transferred outside the prefecture within 30 years for final disposal. The government needs to **secure enough space to accommodate 22 million cubic meters of the decontaminated soil.**

An Environmental Ministry panel of experts has been discussing ways to reduce the amount of decontaminated soil.

The panel is proposing that **a project be set up to test existing technology that removes radioactive substances in soil. The soil in turn will be used as construction material for building roads and sea walls.**

Some members of the panel said it may not be easy to find construction firms that will buy materials made from decontaminated soil. They said gaining support from residents over the use of such material could also be difficult.

The re-use project is planned to start in the next fiscal year starting in April. The Environment Ministry will come up with a final plan by next March.

**State Minister of Environment Shinji Inoue says the key to the project is how to reduce the vast amount of decontaminated soil.**

He said it is the government's duty to quickly proceed with the construction of intermediate-storage facilities.

December 22, 2015

## **Decontaminated soil to be turned into building material (2)**

**Government estimate: Almost 100 percent of contaminated soil can be recycled**

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512220042>





Bags of radioactive soil that were generated from cleanup operations are seen at a temporary storage site in March 2014. (Asahi Shimbun file photo)

Up to 99.8 percent of more than 20 million cubic meters of contaminated soil generated from cleanup operations in Fukushima Prefecture can be recycled, according to an Environment Ministry estimate. The figure was presented at a ministry committee meeting discussing the use of contaminated soil on Dec. 21.

The ministry plans to use the radioactive soil generated through decontamination work following the 2011 accident at the Fukushima No. 1 nuclear power plant as construction materials for public works projects.

From the next fiscal year, which starts in April 2016, the ministry will start the development of the technology and model projects for a recycling plan of the contaminated soil.

## Forests won't be decontaminated (2)

### Gov't plans not to decontaminate Fukushima forests away from residential areas

<http://mainichi.jp/english/articles/20151222/p2a/00m/0na/012000c>



The Ministry of the Environment on Dec. 21 showed a panel of experts a policy of not decontaminating most of the forests in Fukushima Prefecture that are far from residential areas and where people do not usually enter.

The ministry came up with the policy because an increase in airborne radiation levels in residential areas brought on by the spread of radioactive materials has not been confirmed and because removing fallen leaves could have adverse effects such as the outflow of top soil. None of the panel members had objections over the policy, and the environment ministry is to revise its decontamination guidelines accordingly.

Forests account for 70 percent of Fukushima Prefecture's total area. The government was meant to remove fallen leaves and the like from forests within 20 meters from living areas as well as from areas where people routinely enter for activities such as mushroom cultivation and camping. But no decision had been made on what to do for other areas.

According to the ministry, in the areas where it plans not to decontaminate, about 80 percent of radioactive materials that adhered to leaves and branches at the time of the 2011 nuclear meltdowns have remained in surface soil and the spread of radioactive materials affecting airborne radiation levels in living areas has not been confirmed. Furthermore, the ministry said that any outflow of radioactive materials triggered by rainfall and other factors has not been confirmed.

Meanwhile, if accumulated fallen leaves and the like were to be removed from a wide area, it is feared to have adverse effects such as the outflow of top soil. Because of this, the ministry deemed it appropriate to prevent fallen leaves and top soil containing radioactive materials from flowing out by installing fences and sandbags rather than decontaminating forests. At the same time, the ministry will set out to revive forests. An environment ministry official in charge said, "It is difficult to decontaminate all of the forests and there could be adverse effects from such work. We have selected the best method for local people." The environment ministry's plan has sparked criticism and anxiety among some local residents in Fukushima Prefecture, including those in forestry cooperatives and those who are trying to return to their hometowns.

The forestry cooperative in the Fukushima Prefecture village of Iitate, whose entire population has been evacuated, has demanded the government decontaminate the forests so that it could resume its business operations after the evacuation order is lifted. Forests account for 80 percent of the total area of the village. Forestry cooperative chief Chohei Sato, 64, said, "There are places where workers cannot enter because radiation levels are high. Unless they are decontaminated, we won't be able to engage in forestry like the way we did before the nuclear accident."

Under the government policy, on the other hand, the government is to call on foresters and other relevant people to maintain forests by doing such things as thinning in areas where airborne radiation levels are 2.5 microsieverts per hour or lower -- levels that do not require controlling of radiation exposure doses. That's because if weeds and the like grow in forests, they are expected to be effective in preventing radioactive soil from flowing out to living areas.

Kimio Akimoto, 68-year-old chief of the Futaba regional forestry cooperative, said, "Workers might not come here due to anxiety over radiation. If something happens to their health, it will be the cooperative that should take responsibility for that. We do not want the government to leave it solely in the hands of people on the spot."

The Fukushima Prefecture village of Katsurao located in a mountainous area in the Abukuma Highland is seeking to have the evacuation order lifted in the spring of 2016. A 77-year-old woman, who is thinking of cultivating vegetables in the village after the evacuation order is lifted, said, "I really want the government to decontaminate so that we can live without fear. But (forgoing decontamination) cannot be helped if

time and money are needed. If that is the case, I want them instead to properly improve our living strongholds."

The government says it will install prevention fences and the like if the outflow of radioactive soil is feared to affect living areas. Hidenori Endo, 73, who serves as administrative head of the Shimokatsurao district in the Katsurao village, said, "I wonder if we can completely prevent the outflow of soil. There are limitations as mountains are extensive."

## Trying to trace cesium spread in fores

## Researchers trying to unravel spread of cesium and its impact on ecosystem after Fukushima disaster

<http://ajw.asahi.com/article/0311disaster/fukushima/AJ201512220004>



Researchers measure the concentration of radioactive cesium in rainwater at a survey point in Kawauchi, Fukushima Prefecture, in late October. (Asahi Shimbun file photo)

More than 90 percent of the fir trees in forests close to the site of Japan's 2011 nuclear disaster are showing signs of abnormality, and plant lice specimens collected in a town more than 30 kilometers from the crippled facility are missing legs or crooked.

But it remains unclear whether the mutations in plants and animals are definitively connected to the disaster at the Fukushima No. 1 nuclear power plant.

All that scientists in Japan are prepared to say is they are trying to figure out the effects of radioactive cesium caused by the release of huge amounts of radioactive materials from the triple meltdown at the Fukushima plant triggered by the Great East Japan Earthquake and tsunami.

**Scientists are seeking answers to how radioactive cesium spread in forests and the soil after the accident, along with signs of mutation in plants and animals in areas close to the stricken nuclear plant.**

**Understanding how cesium and other radioactive particles spread after the disaster is key to putting the consequences of the nation's worst nuclear accident into perspective.**

The research has major ramifications in terms of what authorities and residents living near a nuclear power plant can expect if a similar accident occurs again. It also offers valuable insight for evacuees weighing their options about rebuilding their lives near the stricken plant.

Among radioactive substances, cesium-137 is of primary concern as it has a half-life of 30 or so years. As forests were excluded from decontamination work, an undetermined amount of cesium is bound to remain in forests and lie buried in the ground for many years to come.

**Mountainous forests cover 70 percent of the Fukushima Prefecture's land space.**

The government-affiliated Japan Atomic Energy Agency (JAEA) is among research organizations studying the effects of radioactivity and the way cesium spreads in forested areas.

During a recent field trip in Kawauchi, radiation levels in the air showed 1.2 to 1.3 microsieverts per hour at a survey point.

Cesium in the soil registered between 300,000 and 400,000 becquerels of radioactivity per square meter. The survey point used to be in a "No Entry Zone," a designation covering a 20-km radius from the plant, which was evacuated soon after the nuclear accident triggered by the magnitude-9.0 earthquake and the towering tsunami it generated.

Now the survey site is designated as a "zone in preparation for the lifting of the evacuation order" in line with a government reassessment of the situation facing affected communities.

Rotting twigs and branches, along with leaf cover, blanket the steep slopes of the cedar forest. During the survey, researchers marked a 66-square-meter rectangular tract as a benchmark and collected rainwater and fallen leaves from the plot.

They also measured the radioactivity of rainwater. The researchers did this by wrapping tree trunks with a cover and collecting rainwater flowing down on to it.

Before the Fukushima disaster, the only data available to JAEA researchers on the long-term transfer of cesium in the soil was limited to work done in laboratories.

"We had to fumble our way to find out in what form cesium existed in the forest and housing areas after it was dispersed from the nuclear plant," said Kazuki Iijima, who is attached to the agency's Fukushima Environmental Safety Center.

Scientists had to gingerly examine a proposed method to decontaminate residential areas before cleanup operations got under way.

Cesium in leaves finds its way into the soil through defoliation, according to researchers.

In the case of cedar trees, for example, leaves are replaced every three to four years.

**Fallen cedar leaves from the time of the nuclear accident were riddled with cesium, which then seeped into the soil. Each new bed of fallen leaves creates more weight on the topsoil and pushes the cesium down further.**

This way, radiation levels in the air in the affected area drop faster than the natural decay of cesium over time.

Researchers' past studies of the forest showed that only 0.1 percent of the total amount of cesium in the surveyed sites spread from the area over a one-year period.

"Most of it remains on the topsoil up to 5 to 10 centimeters from the surface," Iijima said.

**Because cesium attaches itself to dirt and dissolves in water, it is easily spread. It is also deposited in riverbeds and at the bottom of lakes.**

At the Ogaki dam, almost 20 km northwest of the nuclear plant, researchers took cesium measurements of 800,000 becquerels per kilogram at a site 20 cm below the lake bed close to where the Ukedogawa river empties out.

But a reading close to the surface of the lake bed showed below 200,000 becquerels.

The difference, researchers say, is easy to explain: Dirt containing high levels of cesium flowed into the dam in the immediate aftermath of the accident, while dirt with lower radiation levels accumulated on top of it.

Researchers are still trying to figure out whether the release of radioactive materials affected the growth of plants and animals.

**Scientists have reported on mutations and abnormalities among species varying from fir trees and plant lice to Japanese monkeys, carp and frogs.**

The National Institute of Radiological Sciences (NIRS), a government-affiliated entity, said in late August that the trunks of fir trees are not growing vertically.

Fir trees are among the 44 species that the Environment Ministry asked the NIRS and other research organizations to study in trying to determine the effects of radiation on living creatures.

The NIRS reported that the frequency of these mutations corresponds to a rise in natural background radiation.

More than 90 percent of fir trees in the town of Okuma, just 3.5 kilometers from the crippled plant, showed signs of abnormal growth.

"We need to figure out cumulative radiation doses in fir trees when doing additional research," said an NIRS researcher.

Among other changes reported: the legs of plant lice collected in Kawamata, a town more than 30 km from the plant, were found to be missing or crooked and the white blood cell count of Japanese monkeys was lower in Fukushima, the prefectural capital, which is about 60 km from the plant.

Other studies by scientists who research living creatures in their field work monitored earthworms, carp, frogs, flies and gold beetles.

After the nuclear disaster, the researchers began looking at problems from a new perspective: flora and fauna affected by radiation.

Manabu Fukumoto, a professor of pathology at Tohoku University's Institute of Development, Aging and Cancer, cautioned not to jump to conclusions that nuclear fallout is the culprit behind all these findings. "We cannot conclude definitively that they have been caused by radiation until (reliable estimates for) cumulative doses are calculated," said Fukumoto, who also serves as the chief of the Japanese Radiation Research Society.

But assessing the effect on animals in the wild is proving a challenge for scientists.

Before the Fukushima disaster, most experiments designed to evaluate the impact of radiation on animals had been conducted in laboratories.

In these experiments, animals were exposed to varying intensities of radiation under the supervision of researchers.

**In the natural environment, however, estimating their external exposure is difficult as creatures roam rather than stay in one spot.**

**In addition, doses of their internal exposure can vary significantly, depending on what they preyed on when and how much.**

**There is also a possibility that some animals, even if they exhibited signs of radiation's effect, may no longer be alive for analysis.** They may have been killed by their natural enemies.

In addition, scientists cannot rule out factors such as fluctuations in temperature, the presence of farm chemicals and heavy-metal contamination behind the abnormalities.

Experts say they need to produce similar results in lab tests based on their monitoring.

“We need to continue to monitor the environment for at least five or six more years,” Fukumoto said. “And at the same time, we should start analyzing the reported phenomena.”

December 25, 2015

## Takahama restart ignores safety concerns

### **EDITORIAL: Fukui court ignores all safety lessons from Fukushima disaster**

<http://ajw.asahi.com/article/views/editorial/AJ201512250028>

A local court has handed down a ruling on a plan to restart offline nuclear reactors that harks back to the era before the Fukushima nuclear disaster in 2011.

The Fukui District Court on Dec. 24 nullified an injunction against restarting the No. 3 and No. 4 reactors at Kansai Electric Power Co.’s Takahama nuclear plant in Fukui Prefecture. The injunction was issued by the same court in April.

In its April decision, the district court said the new safety standards of the Nuclear Regulation Authority (NRA) were “far too lenient, and meeting them does not guarantee the safety of nuclear power plants.”

This time around, however, the court said, “The framework of the new safety standards for safety examinations by the NRA, which has high levels of expertise and independence, is reasonable.”

The court also endorsed the NRA’s assessment that the two reactors had cleared the safety standards, saying there are no “unreasonable elements in the judgment.”

The court also turned down local residents’ request for an injunction against the restarts of the No. 3 and No. 4 reactors at Kansai Electric’s Oi plant, also in Fukui Prefecture, saying, “It cannot be said that the restarts are imminent.”

In April, the court pointed out that as many as five earthquakes exceeding the design basis earthquake ground motion (DBEGM) levels had occurred at four nuclear plants since 2005. The DBEGM serves as a benchmark for quake-resistant design of a nuclear plant. It also referred to the fact that spent nuclear fuel stored in pools at the Takahama plant were not placed in sufficiently sturdy facilities.

The latest court decision dismissed all these safety concerns, saying, “The danger is controlled to an extent where it can be ignored in light of socially accepted standards.”

In 1992, the Supreme Court handed down a ruling that set a precedent for cases involving technical issues related to nuclear power generation. In ruling over a lawsuit concerning Shikoku Electric Power Co.’s Ikata nuclear power plant, the top court said the judiciary should respect opinions of nuclear experts and refrain from making judgments about highly technical issues that require expert knowledge unless there are clearly errors in safety checks that are too serious to be overlooked.

The Dec. 24 court decision is in line with the Supreme Court ruling.

But the meltdowns at the Fukushima plant took place while the judiciary continued making decisions on related issues under this framework.

A severe accident at a nuclear power plant could cause immeasurable damage in wide areas for a very long time.

**The latest court decision, which seems to leave the judgment to experts and be based on the assumption that serious accidents seldom occur, blatantly disregards the fact that unexpected accidents could happen.**

This has been an important viewpoint in debate on the future of nuclear power generation in this nation since the March 11 disaster.

Kansai Electric Power has argued that **each day of delay in the restarts of the two reactors at its Takahama plant costs the company about 400 million yen (\$3.27 million) in losses.**

With the removal of the judicial block to the resumption of the two reactors, the process of bringing them back online will accelerate.

But the utility should not forget that many Japanese people cast critical eyes on nuclear power generation. **When electric utilities plan to restart idled reactors, they seek consent only from the prefecture and the municipalities that host their plants.**

**But parts of Kyoto and Shiga prefectures are also located within 30 kilometers from the Takahama nuclear plant. Utilities should widen the scope of local communities from which they seek consent to restart reactors.**

There has also been **insufficient debate on the risk posed by a concentration of nuclear power plants in Fukui Prefecture.**

Neither the government nor electric utilities must be allowed to forge ahead with any plan to restart reactors without addressing all these safety concerns.

## Monju: False sodium leak alarm

### Sodium leak false alarm at Monju reactor

<http://www3.nhk.or.jp/nhkworld/english/news/nuclear.html>

The Japan Atomic Energy Agency says a sodium leak alarm went off at its Monju fast-breeder nuclear reactor in Fukui prefecture. But it says no leak has occurred at the reactor that is not in operation.

The plant operator said the alarm sounded 4 times on Friday night from a device that detects leaks of sodium, which is used as a coolant.

Agency officials said another detector in the same room indicated there was no leakage. **They now suspect a glitch in the device** and are investigating the cause of the false alarm.

Monju is designed to use recycled plutonium. In December 1995, sodium leaked from the reactor's piping, causing a fire at the facility.

In the past few years, the Monju operator has been repeatedly criticized for its lax safety management.

Last month, the Nuclear Regulation Authority asked the science minister to replace the plant's operator within about 6 months.

## Takahama restart: No guarantee of safety

### Editorial: No guarantee of safety with end to Takahama reactor restart injunction

<http://mainichi.jp/english/articles/20151225/p2a/00m/0na/019000c>

The Fukui District Court on Dec. 24 revoked a provisional injunction banning the restart of the No. 3 and 4 reactors at the Takahama Nuclear Power Plant in Fukui Prefecture. Since Kansai Electric Power Co. (KEPCO), the operator of the power station, has gained consent from the local community to restart the reactors, the utility is set to begin preparations to resume operations. The move would follow the reactivation of the No. 1 and 2 reactors at Kyushu Electric Power Co.'s Sendai plant.

The court made the decision in response to an appeal that KEPCO filed against the provisional injunction - which had been issued by another presiding judge at the same court in April this year. The point of contention during hearings was whether the green light that the Nuclear Regulation Authority (NRA) issued to the planned reactivation -- based on its inspection on the reactors under the new regulatory standards -- is rational.

The court determined that the inspection the NRA conducted on the reactors was legitimate, noting that the NRA's evaluation of the quake-resistance of the nuclear complex reflects the latest scientific and technological knowledge and that the authority has advanced expertise and is fully independent. The court thus upheld KEPCO's assertions and concluded that no problem involving the plant's safety can be found.

In contrast, the provisional injunction had stated that the new regulatory standards must be strict enough to ensure that a serious nuclear accident never occurs based on the notion that nuclear plants must not be operated if there is even a small risk of an accident.

The latest decision overturned this idea. Courts remain divided over levels of safety that nuclear plants need following the outbreak of the Fukushima nuclear crisis in March 2011.

Courts had been reluctant to evaluate of the safety of nuclear plants. A ruling that the Supreme Court handed down on a lawsuit on Shikoku Electric Power Co.'s Ikata nuclear plant in 1992 expressed its view that the evaluation of the safety of atomic power stations "requires the latest scientific, technological and comprehensive judgment, and is left to the discretion of rational judgment by the administrative branch." This framework had been maintained until the outbreak of the nuclear disaster.

**However, the accident at the tsunami-ravaged Fukushima No. 1 Nuclear Power Plant operated by Tokyo Electric Power Co. demonstrated that an accident could occur at a nuclear plant even if it passes an inspection by the national government. Courts now need to more strictly examine safety evaluations of nuclear plants by the executive branch.**

The presiding judge who issued the provisional injunction banning the restart of the No. 3 and 4 reactors at the Takahama plant also handed down a ruling in May last year prohibiting KEPCO from reactivating the No. 3 and 4 reactors at its Oi plant.

In his ruling on the lawsuit regarding the Oi plant, the presiding judge prioritized local residents' personal rights to protect their lives and stated that operations at nuclear plants "can be banned as long as there are specific risks, even if the risks are low."



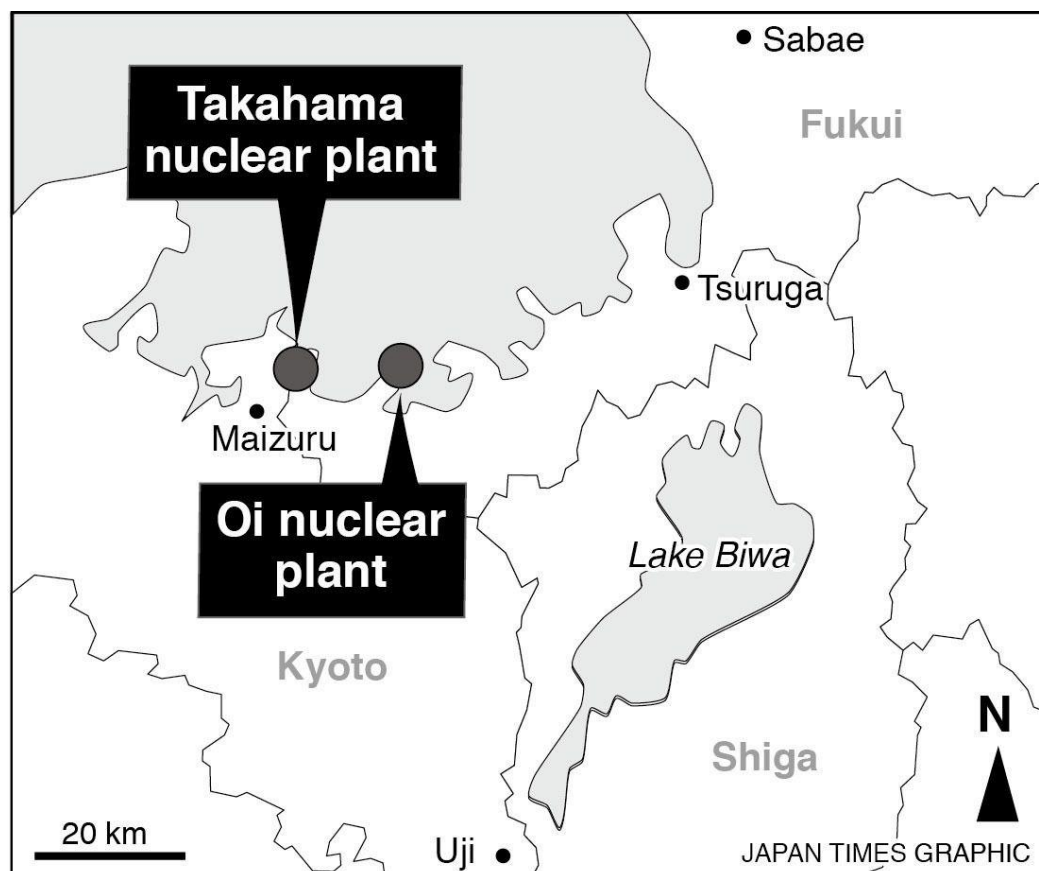
While dismissing a petition for a provisional injunction to ban operations at the Oi and Takahama plants, the Otsu District Court warned in November last year against attempts to hastily restart idled nuclear reactors. "It's impossible to restart reactors as long as no progress is made on the compilation of **evacuation plans.**"

Meanwhile, the Kagoshima District Court ruled in April this year in dismissing a petition for a ban on the restart of the Sendai nuclear plant that there is no irrationality in the new safety standards and that an inspection the NRA conducted on the plant was appropriate. The latest Fukui District Court decision also endorses the NRA's broad discretionary power. As such, courts are tending to go back to their passive attitude toward safety evaluations of nuclear plants.

Following the court's decision, KEPCO inserted nuclear fuel into the No. 3 reactor at the Takahama plant with an aim of restarting it in late January 2016. The Fukui District Court cautioned in its latest decision that the green light given by the NRA to the restart of the Takahama reactors "does not rule out the possibility that a serious accident will occur" at the power station. The court thus urged the national government and power companies to implement countermeasures against such disasters, including the compilation of evacuation plans for local residents. Without taking such steps, utilities should not be allowed to restart their idled nuclear reactors.

December 27, 2015

### Takahama restart & the challenge of evacuation



## **Fukui defies critics of nuclear evacuation plan**

Staff Writer

OSAKA – Last week's approval by Fukui Gov. Issei Nishikawa to restart two Takahama nuclear reactors, followed by the Fukui District Court's lifting of a provisional injunction, means Japan will soon fire up its third and fourth reactors since 2012.

"I made my decision after the safety aspects had been considered and approved by (the) Takahama township and prefectural assembly, and after considering the general policies of the national government and Kepco," Nishikawa said, referring to Kansai Electric Power Co.

The Fukui District Court ruled that, as there was no clear and present danger to local communities from the reactors, there was no reason for the injunction.

Both decisions came less than a week after the Cabinet Office released detailed evacuation plans for dealing with a nuclear crisis at Takahama — plans that critics warn may prove unrealistic in an actual emergency.

About 179,000 people live within 30 km of the Takahama plant, and 8,800 live within 5 km of it. Of the 179,000 total, about 54,000 reside in four Fukui towns and another 125,000 are from seven cities in neighboring Kyoto Prefecture. All would have to be evacuated in the event of a disaster.

The official evacuation plan is based on three different scenarios.

In the first scenario, known as Operational Intervention Level 1, more than 500 microsieverts of radiation per hour are detected. In the second scenario, OIL 2, between 20 and 500 microsieverts per hour are detected, with a base level of half a microsievert set for OIL 3.

In OIL 1, evacuation procedures would be put into place within hours of confirming the radiation level.

For OIL 2, the time frame is within a day. The plans call for sending more than 46,000 Fukui residents within 5 km to 30 km of Takahama northeast, toward the towns of Tsuruga, Sabae, or Echizen.

Roughly 125,000 residents in seven Kyoto cities also live between 5 km and 30 km of the plant, and would have to be evacuated. Within the prefecture, the flow would be directed south and southwest to Kyoto, Uji and other cities, as well as to Kobe and 18 other towns and cities in Hyogo, and to Naruto and two towns in Tokushima on Shikoku.

Most of the roughly 8,800 residents living within 5 km of Takahama would be evacuated to Tsuruga, as well as to Sanda and Takarazuka in neighboring Hyogo. About 640 people living in areas of Maizuru, Kyoto Prefecture, within 5 km of the Takahama plant would be evacuated to Kobe.

A key concern local officials have is how the central government will initially respond to the next nuclear disaster. The plan for delivering first responders and relief goods from Tokyo calls for Air Self-Defense Force transport planes at Iruma Air Base in Saitama to fly to Komatsu Air Base in Ishikawa Prefecture (a one hour flight), where their cargo will be transferred to helicopters and ferried to Takahama, 30 minutes away.

Yet all the detailed plans are all based on the assumption that the roads leading out of Takahama — which lies in a remote area on the Sea of Japan coast — to the evacuation zones in other parts of Fukui, as well as Kyoto and Hyogo, will not have been damaged; that there will not be mass panic that clogs the roads; and that there will be enough time for residents within 30 km of the plant to get to safety.

But what happens if the nuclear incident has been triggered by an earthquake or other natural disaster that has destroyed the roads? Or, what happens if an accident occurs in the midst of a blizzard, where icy roads and hazardous driving conditions can lead to accidents that block them and create long traffic jams?

The Cabinet Office's plans state that, in the event of a natural disaster that makes fleeing by road impossible, residents will be evacuated by ship from the neighboring port city of Maizuru, which has a Maritime Self-Defense Force base. Helicopters will land at about a dozen designated areas along the main roads in Fukui and northern Kyoto that lie within the 30-km evacuation radius.

Again, the above assumptions are that the port facilities will be working after a disaster and that residents will be able to get to a dozen locations that have been designated as helicopter landing spots, most of which are in Maizuru.

For some local politicians outside Fukui, the evacuation plans represent a challenge and an opportunity. Kyoto Gov. Keiji Yamada met with Vice Minister Yosuke Takagi of the Ministry of Economy, Trade, and Industry earlier this month and asked Tokyo to provide funding in next year's fiscal budget for improving roads.

"There are a lot of issues in regards to infrastructure for areas of evacuation and evacuation routes," Yamada said, pointing out that funding for road improvements had yet to be guaranteed.

However, Shiga Prefecture, which could find itself deluged with panicked evacuees, is also the home of Lake Biwa, the main source of water for 14 million people. A disaster at the Takahama plant could contaminate drinking water sources for not only those towns and cities named in the evacuation plans, but also for those as far away as Osaka.

"If there's an accident, there will be a long-term effect over a wide area of Lake Biwa," said Shiga Gov. Daizo Mikazuki last Tuesday after Fukui Gov. Nishikawa granted approval for reactor restarts.

*Kansai Perspective appears on the fourth Monday of each month, focusing on Kansai-area developments and events of national importance with a Kansai connection.*

December 28, 2015

## Takahama restart based on "unmet conditions, weak promises"

### **EDITORIAL: Approval to restart Takahama reactors based on unmet conditions, weak promises**

<http://ajw.asahi.com/article/views/editorial/AJ201512280015>

The Fukui District Court recently nullified its earlier injunction against reactivating the No. 3 and No. 4 reactors of the Takahama nuclear power plant in Fukui Prefecture.

Kansai Electric Power Co., operator of the nuclear plant in the town of Takahama, is expected to restart one of the two reactors as early as late January.

But the procedure for obtaining the approval of the hosting government of Fukui Prefecture, which was completed immediately before the court decision, was laden with problems. We oppose moves to press ahead with the planned restarts under the current circumstances.

**Fifteen nuclear reactors are concentrated in Fukui Prefecture**, including some for which decisions have been made for decommissioning.

Fukui Governor Issei Nishikawa set five conditions for his approval, calling on the central government and Kansai Electric to clearly pinpoint their responsibilities.

Public opinion has consistently been cautious about restarting nuclear reactors following the 2011 disaster at the Fukushima No. 1 nuclear plant. Nishikawa called strongly on the central government to “promote public understanding,” and he obtained Prime Minister Shinzo Abe’s assurances that he will ensure that meetings with residents will be held across Japan for that purpose.

The governor called on Kansai Electric to precisely explain when it plans to build an interim storage facility outside Fukui Prefecture for spent nuclear fuel. The utility said in November that it will locate the site for the facility around 2020 and have it operational around 2030.

Nishikawa said he believes that all his conditions have been met. But the substantiality of those commitments remains questionable.

Kansai Electric has said it hopes to install an interim storage facility somewhere in the Kansai region, and it has long been canvassing local governments for their understanding. But resistance to hosting such a facility remains strong, and the building site is not likely to be selected any time soon. There is no denying suspicions that the plan could end up as an empty promise.

Questions also remain on the extent to which Nishikawa has fulfilled his own responsibilities.

He has never had the prefectural government organize meetings with local residents, saying it is up to the central government and the plant operators to explain the safety and necessity of nuclear plants.

An emergency evacuation plan for areas within a 30-kilometer radius of the Takahama nuclear plant was only worked out earlier this month. That zone contains parts of Kyoto and Shiga prefectures and has a total population of about 180,000.

But Nishikawa approved the planned restarts without waiting for a drill held across prefectural borders, arguing that working out an emergency evacuation plan is not a legal requisite for restarting a nuclear reactor.

**Obtaining the host communities’ approval for a reactor restart should primarily be a process to enhance the safety and peace of mind of local residents.**

It is all too regretful that another undesirable example has been set, following the earlier approvals to restart the Sendai nuclear power plant in Kagoshima Prefecture and the Ikata nuclear power plant in Ehime Prefecture.

**The central government was also quite candid in postulating that restarting nuclear reactors is a foregone conclusion.** Industry minister Motoo Hayashi visited Fukui, the capital of Fukui Prefecture, four days before the court decision to ask Nishikawa for his approval.

**The local governments and residents of communities adjacent to nuclear plants are strongly dissatisfied that they have no say in decisions on reactor restarts.** Kansai Electric has rejected the demands of the Kyoto and Shiga prefectural governments for inclusion on the list of “hosting communities,” whose approvals are required for restarting reactors of the Takahama nuclear plant. The central government has only been looking on, arguing that approvals of the hosting communities are not a legal requirement.

Abe has said he will provide explanations to gain the public’s understanding of the importance of nuclear power generation. That leads us to believe that he should also be presenting guidelines on the extent and coverage of the “hosting communities,” whose approvals are necessary for nuclear restarts.

## Tsunami wall at Hamaoka plant

## Wall to protect against tsunami built at Hamaoka nuclear plant

<http://mainichi.jp/english/articles/20151228/p2a/00m/0na/008000c>



A protective wall at the Hamaoka nuclear complex is seen in Omaezaki, Shizuoka Prefecture, on Dec. 26, 2015. (Mainichi)

OMAEZAKI, Shizuoka -- Chubu Electric Power Co. finished the main part of a wall to protect against tsunami at Hamaoka nuclear power station here on Dec. 26.

Soil embankments on both ends of the wall are scheduled to be finished in March 2016, which will mark the end of the work. The wall has been under construction since 2011.

The Hamaoka nuclear complex is within the estimated hypocenter region of a major earthquake in the Nankai Trough. **The wall is 22 meters above sea level and 1.6 kilometers long.** The wall was planned to be 18 meters above sea level when work began after the Great East Japan Earthquake. However, as the tsunami estimated by the national government for a major Nankai Trough quake overtopped this, the wall height was boosted by 4 meters.

Chubu Electric is aiming to restart its No. 3 and 4 reactors at the nuclear complex, and has applied to the Nuclear Regulation Authority for the necessary safety checks. The utility plans to finish safety-boosting construction at the No. 4 reactor in September 2016 and at the No. 3 reactor in September 2017. The total construction costs for work at the plant to boost its resistance to disasters are expected to be between 350 billion and 400 billion yen.

However, **talks between the utility and municipalities situated within 30 kilometers of the plant to establish a safety agreement related to reactivation of the plant have struggled to make progress,** and there is no sign of when such an agreement might be reached.



December 29, 2015

## Fox finds its way into No.2 reactor building



A fox is seen inside the Fukushima No. 1 nuclear plant's No. 2 reactor building in this video frame grab provided by Tokyo Electric Power Co.

## Fox finds way into highly radioactive reactor building at Fukushima plant

<http://mainichi.jp/english/articles/20151229/p2a/00m/0na/007000c>

A camera at the Fukushima No. 1 nuclear plant has captured video of a fox poking around a very dangerous place: inside the No. 2 reactor building, where radiation levels can reach more than 10 sieverts per hour.

An animal believed to be a fox was seen outside the No. 2 reactor containment vessel, plant operator Tokyo Electric Power Co. (TEPCO) said. Despite the likely high radiation dose the fox was absorbing, the utility said the animal did not show any signs of weakness on the video.

The fox is about 1.3 meters long, and appeared on-camera on the morning of Dec. 21. It spent 7 to 8 minutes walking around within view before disappearing. TEPCO staff do not know how the animal got into the reactor building, and there was no sign of the fox on any of the walking or driving routes at the plant.

In 2013, the cooling system for a spent fuel pool stopped temporarily when a mouse found its way into an electrical switchboard and caused a power outage. A TEPCO representative said, however, that the

company is "moving ahead with replacing electrical cables and plumbing, and there would be little damage even if they were chewed on."



Security camera footage shows the animal inside the No. 2 reactor building of the Fukushima No. 1 nuclear power plant on Dec. 21. The circular door in the background is the carry-in entrance to the reactor's containment vessel. (Provided by Tokyo Electric Power Co.)

### **Animal spotted prowling inside Fukushima nuclear plant's reactor building**

[http://ajw.asahi.com/article/behind\\_news/social\\_affairs/AJ201512290056](http://ajw.asahi.com/article/behind_news/social_affairs/AJ201512290056)

By KOJI KITABAYASHI/ Staff Writer

A fox appears to have been traipsing around a highly radioactive area inside a reactor building at the crippled Fukushima No. 1 nuclear power plant, Tokyo Electric Power Co. said Dec. 28.

The plant operator said a security camera mounted at a section **next to the containment vessel** of the No. 2 reactor captured footage of the animal around 6 a.m. on Dec. 21. It said the creature appeared intermittently for seven to eight minutes.

Although the animal's den and current whereabouts remain unknown, a TEPCO official said the intrusion is unlikely to adversely affect work being done in preparation for decommissioning the reactor.

According to TEPCO, the security camera showed the 1.3-meter-long animal wandering back and forth near the carry-in entrance to the reactor's containment vessel.

The area where the animal was spotted is highly radioactive, with a maximum of 10 sieverts of radiation per hour being detected. Entry by humans is strictly restricted.

Decontamination work in the area is being done using robots.

Although **the infiltration route has not yet been determined**, the official said: "It is possible the animal entered via a gap through which cables are passed or a damaged door which has remained unrepaired since the Fukushima nuclear disaster (in 2011)."

December 30, 2015

## **Fox seen in no2. reactor building (2)**

### **Fox seen in dangerously radioactive reactor 2 building at Fukushima No. 1 before vanishing from view**

<http://www.japantimes.co.jp/news/2015/12/30/national/fox-seen-dangerously-radioactive-reactor-2-building-fukushima-no-1-vanishing-view/#.Vo00mVIR-id>

JJI

FUKUSHIMA – A fox has been found inside the heavily contaminated reactor 2 building at Tokyo Electric Power Co.'s Fukushima No. 1 plant, Tepco said.

It is the first time that an animal has been discovered in any of the reactor buildings at the power plant, including the reactors 1 and 3, which experienced core meltdowns following the March 2011 earthquake and tsunami.

On Dec. 21, the image of the fox was captured by a camera inside the unit 2 building, Tepco said on Monday, adding that the current whereabouts of the fox was unknown.

According to Tepco, the fox was found near pipes connected to reactor 2's containment vessel. **Aerial radiation levels at the site were around 300 millisieverts per hour, while radiation levels on the floor reached 7 sieverts.**

The fox may have entered the reactor 2 building through an opening created by the tsunami, Tepco said. In March 2013, cooling equipment for a spent nuclear fuel pool at the power plant stopped briefly due to a power failure caused by a rat.

## **"Shakiness" of legal judgements on nuke safety**

### **No endorsement of nuclear safety**

<http://www.japantimes.co.jp/opinion/2015/12/30/editorials/no-endorsement-nuclear-safety/#.VoOPAFIR-id>



Power companies and the government should not be under the illusion that the safety of nuclear power plants under the new standards of the Nuclear Regulation Authority has been endorsed by the judiciary. While last week's decision by the Fukui District Court paves the way for Kansai Electric Power Co. to restart reactors No. 3 and 4 at its Takahama Nuclear Power Plant as early as next month, **the court urged the utility and the NRA to make constant efforts to aim higher for safety in the operation of nuclear plants.** The Abe administration has pushed for restarting nuclear power plants idled in the wake of the March 2011 meltdowns at Tokyo Electric Power Co.'s Fukushima No.1 plant once they clear the new safety regulation introduced by the NRA — which the government has touted as the “world's most stringent.” But as the court said last week, **there is no “absolute safety” in nuclear power** — as the Fukushima disaster has proven. The court decision does not rule out the risk of severe accidents at nuclear power plants. Fukui court reversed the decision given by the same court eight months ago under a different judge, who has since been transferred to another court. In April, the court ordered an injunction banning the restart of the Takahama plant on the Sea of Japan coast in Fukui Prefecture on the grounds that the NRA's plant safety regulations, tightened after the Tepco plant meltdowns to make nuclear power plants resilient against bigger quakes and tsunami as well as severe accidents, were too lax to secure the plant's safety. If the logic behind the decision was to be upheld, it would have dealt a crushing blow to the restart bid by the power industry and the administration because it negates the validity of the NRA regulation itself. In its Dec. 24 decision on a complaint filed by Kepco against the April decision, the Fukui court said the NRA's regulations are based on the latest scientific and technological knowledge and therefore rational. There's nothing irrational in the NRA's approval of Kepco's plans to restart the Takahama plant, the court said in lifting the ban on reactivating the reactors that have cleared the NRA's safety screening. **The two opposite decisions by the same court appear to symbolize the shakiness of legal judgments on the safety of nuclear power plant operation just four years after the nation experienced the world's worst nuclear disaster since Chernobyl.** Residents in areas around the Takahama plant who sought the injunction banning its restart plan to take the case to a higher court, but Kepco, which started loading nuclear fuel to the No. 3 Takahama reactor the day after the court decision, is ready to reactivate it as early as next month. Takahama is now set to be the second nuclear power plant to restart under the new NRA standard, following the Sendai plant of Kyushu Electric Power in Kagoshima Prefecture, which reactivated two of its reactors since last summer. The NRA has also given the go ahead for restarting operation at Shikoku Electric's Ikata plant in Ehime Prefecture. It has nearly finished the examinations of two reactors at Kepco's Oi plant, also in Fukui Prefecture, and those of Kyushu Electric's Genkai plant in Saga Prefecture, while 17 reactors at 12 other plants are still being screened. Along with the Abe administration, many of the local governments that host the nuclear power plants support reactivation of the plants. Fukui Gov. Issei Nishikawa gave his consent to restarting the Takahama plant two days before the Fukui court lifted the ban. **For Kepco, restarting its nuclear power plants is a crucial importance for its finances**, since it has incurred losses for four years in a row under the weight of the heavy cost of imported fuel to run the thermal power plants that are covering for the lost capacity of the idled reactors. Meanwhile, public concern over the safety of nuclear power remains strong. **Media surveys show that a majority of the respondents were opposed when the Sendai plant was restarted in August, many of them citing safety fears and concern over insufficient preparedness for evacuating local residents in the event of severe accidents.** The lessons of the Tepco disaster, which spread radioactive fallout to extensive areas around the plant, prompted the government to require municipalities within 30 km of nuclear power plants to draw up evacuation plans. Doubts raised as to whether such plans compiled by the

municipalities — over which the NRA has no control — are practical in ensuring the residents' safety in case of nuclear emergencies often go unheeded. In the case of the Sendai plant, a drill involving the residents to test the evacuation plans was held in late December — four months after the first reactor was reactivated.

In lifting the ban on the Takahama plant's restart, the Fukui court urged the utility, the national and local governments involved to take multi-layered measures to protect against severe accidents at nuclear power plants, including more effective evacuation plans. **The court decision should serve as a reminder that merely clearing the NRA standard does not vouch for the safety of a nuclear power plant.**

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