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Citizens' Nuclear Information Center

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Report on the struggle of a Nuclear Power Subcommittee member: Government's ban on release of video of deliberations and forceful subcommittee management policy



*The struggle with contaminated water.
See "Contaminated Water Woes at Fukushima Daiichi"
on page 8 (Photo by TEPCO)*

The nuclear Power Subcommittee¹⁾ convened on June 19. As this writer was nominated as a member, I accepted the post with the intention of continuing to assert my anti-nuclear position at the committee meetings. The government organized this subcommittee to discuss and devise necessary measures in accordance with the Basic Energy Plan endorsed by the Cabinet in April 2014. Our Citizens' Nuclear Information Center (CNIC), however, does not approve the contents of the

Contents

Report on the Nuclear Subcommittee	1 - 3
Public Comments for Sendai NPS	4 - 6
World Conference against A & H bombs	7
Contaminated Water Woes at Fukushima	8 - 9
Who's Who: Yoshitaka Mukohara	10
News Watch	11 - 12

1) Nuclear Energy Subcommittee of the Electricity and Gas Industry Committee under the Advisory Committee for Natural Resources and Energy

basic plan. Hence, I became a subcommittee member after I notified the secretariat in the Ministry of Economy, Trade and Industry (METI) that my acceptance of the post did not mean that I had changed my mind and would support the basic energy plan. I reiterated this point at the first subcommittee meeting.

The subcommittee is comprised of 27 members, many of whom are uncompromising proponents of nuclear power generation, such as Koji Okamoto, Akira Yamaguchi and Hajimu Yamana. Some of the other members are experts on investment and business management, probably because the current government has already announced a policy to reduce Japan's dependence on nuclear power.

Selection of the members was conducted behind closed doors at METI, just as on previous occasions. Due to the lack of transparency in the selection process, it remains uncertain for what purpose and with what kind of intention the selection was carried out. This writer thus called on the ministry to improve and enhance the transparency of the selection process by following the example of Britain's Commissioner for Public Appointments system.

In this system, committee members are chosen through an open recruitment system and a panel independent of the government's ministries and agencies selects members from the applicants. The minister appoints the successful candidates to the post. However, citizens are allowed to raise objections to appointments.

My demand for the improvement of the current selection system was ignored and this issue was not taken up in the committee discussions. Nevertheless, I think that the British system should be introduced into Japan sooner or later.

The secretariat has presented to the subcommittee eight issues to be deliberated on:

- 1) Efforts for reconstruction and restoration of Fukushima,
- 2) Problems to be resolved for reduction in the dependence on nuclear power (e.g. decommissioning of nuclear reactors),
- 3) Consistent efforts to enhance safety,
- 4) Development and maintenance of nuclear technologies and personnel,
- 5) Nuclear power business in a competitive environment,
- 6) Efforts to solve the problems of spent nuclear fuel and promotion of the nuclear fuel cycle policy,
- 7) Establishment of a relationship of trust with the public and local communities, and
- 8) Contribution to the peaceful use of nuclear power and nuclear non-proliferation worldwide.

Up to the end of July, the subcommittee held two meetings. In the second meeting, it decided on the order in which the eight issues would be discussed by giving priority to those where there is a need to reach a conclusion as promptly as possible. Issues 2), 5) and 6) were classified as those that should be discussed as soon as possible. Issues 4), 6), 7) and 8) were categorized as those that need to be implemented continuously, and 2) (development of alternative power sources) and 6), as those to be tackled on a mid-term and long-term basis. Issues 1) and 3) were not mentioned in the materials of the second meeting.

Two guest speakers gave presentations at the second meeting. One of them was former Deputy Secretary of the U.S. Department of Energy, William Martin. He admitted that renewable energy is important for Japan, but added that nuclear power generation is indispensable when considering national energy security. The other speaker was Chairman of the National Diet of Japan Fukushima Nuclear Accident Independent Investigation Commission Kiyoshi Kurokawa. He repeatedly emphasized the need to increase transparency of the government's entire administrative processes involving nuclear power generation by saying that this was the lesson we must learn from the 2011 nuclear accident.

In the first meeting, mass media were allowed to film only the outset of the meeting. It was at this time that this writer came to know that the video of the meeting would not be made public. The reason for this decision was allegedly that some of the members would hesitate to express their views fully at the meeting if the video were to be released. This reason seemed to be totally unconvincing to me.

According to my experience, it is hardly likely that some members accepted the job on condition that the video of the deliberations

would not be published. Therefore, it is certain that all the members would have accepted the policy to publish the video, if the secretariat had announced it in advance. This probably means that the closed-door policy was decided at the discretion of the secretariat.

However, the release of the video of the deliberations is generally considered to be a matter of course and should be carried out for the following three reasons. Firstly, it is necessary for securing transparency of the deliberation process. Although it is regrettable that Mr. Kurokawa did not make direct comments to support the video release, he insisted that the lack of transparency in nuclear power administrative processes was the fundamental cause of the Fukushima nuclear accident, and this is true.

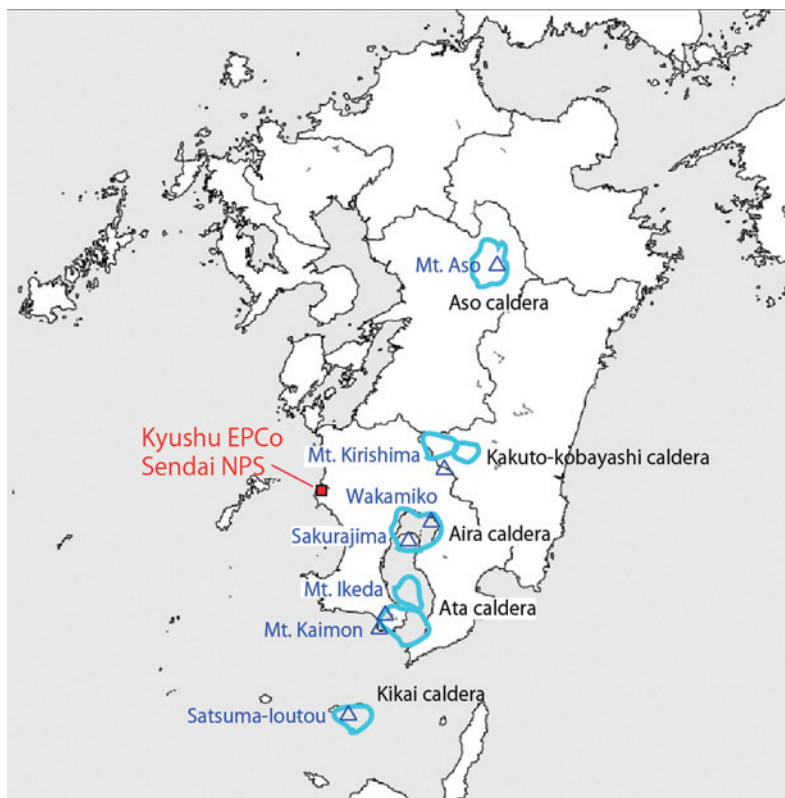
Secondly, the atmosphere of the meeting cannot be conveyed to the public through written documents alone. Thirdly, the subcommittee deliberations should be reported to the public as quickly as possible and the release of the video is a very effective way to do this. The minutes of the meeting are to be released within one month, and the meeting is expected to be held twice a month.

The secretariat claims that they are writing the summary of the minutes carefully, and that the document will be released within a week. But the names of the speakers are not written in the summary because the secretariat is the credited writer. (The secretariat must obtain the approval of speakers in order to disclose their names.) This means that no reader will be able to trace the deliberation process unless he or she attended the meeting as an observer. Under the current circumstances, this writer is determined to continue to demand release of the video of the deliberations, but it would be more effective if many other people would also voice similar demands.

Another problem emerged. When one of the members, Hitoshi Yoshioka, deputy chairperson of the Citizens' Commission on Nuclear Energy (CCNE), sought permission to distribute a report by CCNE, titled "Opinion: The Restart of the Sendai Nuclear Power Station should be Suspended Indefinitely," the secretariat refused to comply. Eventually it was decided that the secretariat would notify the participating members of the report and have them take a copy home if they so wished. Nevertheless, the secretariat's notification was extremely sloppy and did not even mention the title of the report. Mr. Yoshioka tried to add his own comments, but Chairperson Itaru Yasui rejected his demand. This was an extremely inappropriate way of conducting a session, and we must say that Mr. Yasui is ill-qualified for the post.

These questionable actions are likely to nullify the subcommittee's target to build up a relationship of trust between the government, on one side, and the public and local communities on the other. Former Fukushima prefectural governor Eisaku Sato criticized the government's forceful way of implementing nuclear energy policy, saying it is like a tank crushing local governments. It seems that the situation has deteriorated and the government has begun to use the tank to crush the public as well.

(Hideyuki Ban, Co-Director of CNIC)



Volcanoes in the region of Kyushu EPCo Sendai Nuclear Power Station

Public Comments for the Draft Report on Compliance of Sendai Nuclear Power Station with the New Regulatory Requirements

The Nuclear Regulation Authority (NRA) implemented a “Call for Scientific and Technical Comments for the Draft Report on the Application for Permission to Alter Installed Kyushu Electric Power Company (Kyushu EPCo) Sendai Nuclear Power Station Units 1 and 2 Power Generating Nuclear Reactors” from July 17 to August 15, 2014. More than 17,000 public comments were submitted, but the citizens' opinions were ignored in the NRA's decision to evaluate the Sendai reactors as passing the new safety requirements.

This was an important call for public opinions in the moves to prevent the restart of the Sendai Nuclear Power Station, and CNIC also submitted comments. Here we summarize the main comments submitted by CNIC.

1. Negligent screening

Under the former nuclear power administration system in Japan, the Nuclear and Industrial Safety Agency (NISA) existed under the Ministry of Economy, Trade and Industry. NISA was responsible for screening nuclear reactor construction and alteration permit applications and had the power to approve such applications. At the same time the Advisory Committee on Reactor Safeguards (ACRS) of the former Nuclear Safety Commission (NSC) also carried out double-check screenings on applications. However, this has not been carried out in the current inquiry even though the ARCS still exists under the NRA.

Until now, when verifying the validity of the analytical materials submitted by power companies, the Japan Nuclear Energy Safety Organization (JNES) also carried out its own analysis as a part of the screening process. However, this has been limited to a partial analysis in the current screening “because we are validating (some of the materials) by a separate analysis” (April 3, NRA Chairperson Shunichi Tanaka in reply to a question in the House of Representatives special committee on the study of nuclear power issues).

This deficiency in the screening system is an extremely serious issue. The NRA should have crosschecks carried out by both organizations.

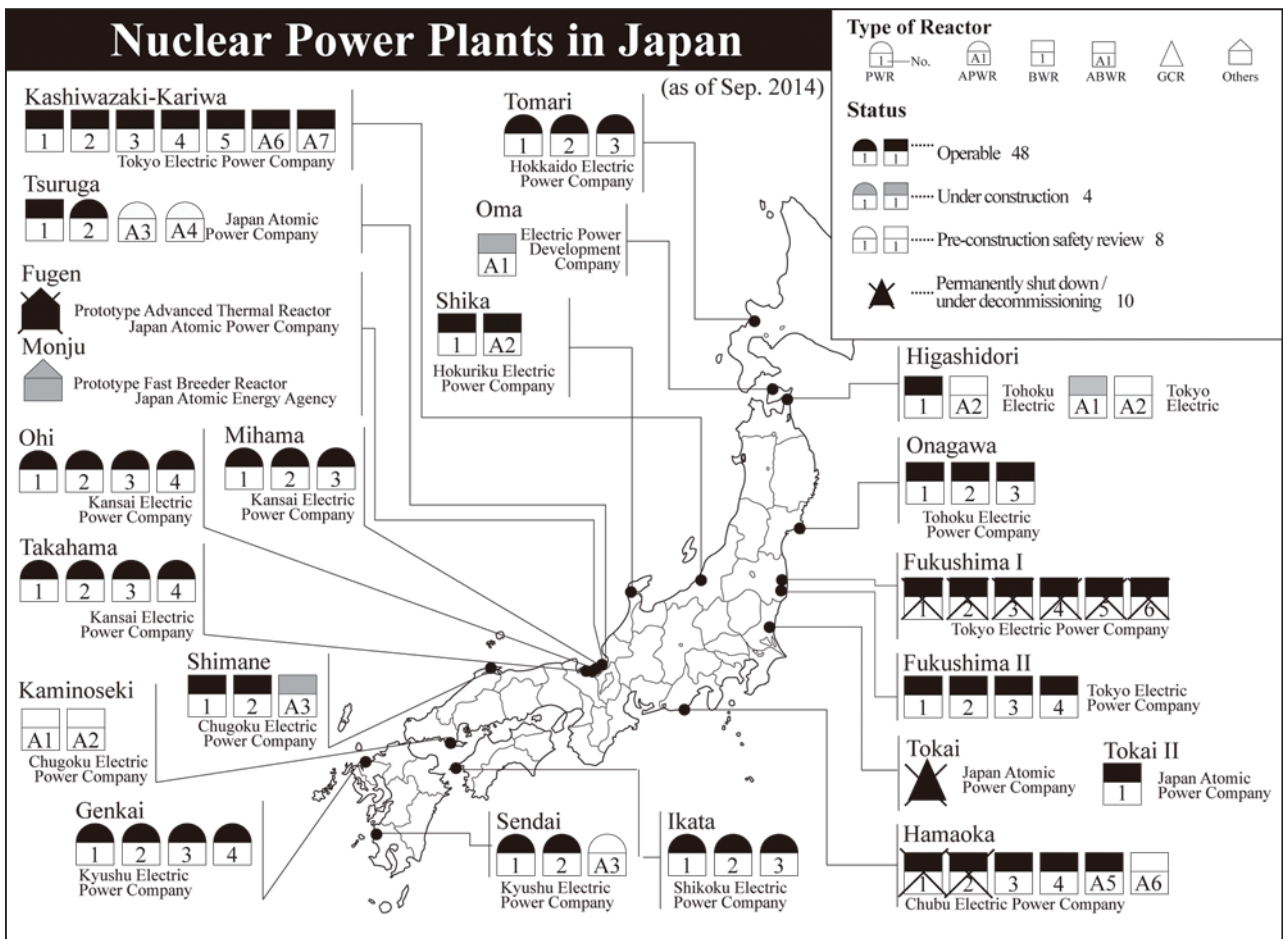
In addition, the “guarantee of peaceful use” of nuclear materials, as in the past, has been confirmed only through a formalistic check that assumes the materials are for use in commercial power generation and that there is no change in the policies of storage and reprocessing of spent nuclear fuel. Japan's nuclear materials, however, especially the amounts of plutonium in storage,

have aroused strong international concern. Since the NRA is carrying out screening for the first time, we feel that it should indicate a direction toward reform that would result in the implementation of a more meaningful screening process.

As well as the above, there are also numerous statements in the report which simply accept the viewpoint of the applicant (the power company), and with regard to human-induced accidents (so-called ‘terror’ incidents) there are many instances where insufficient consideration is notable. We think that these matters should be given more substantive deliberation.

2. Probabilistic risk assessment (PRA)

The “Interpretation of Regulations Stipulating Standards for the Location, Structure and Equipment of Commercial Power Generating Nuclear Reactors and their Auxiliary Facilities” requires that the accident sequence group (the combination of occurrence of contributing factors and the loss of the various safety functions that lead to reactor core damage, etc.) should be assessed by the use of probabilistic risk assessment (PRA) and other methods. The applicant has used PRA to carry out the assessment and the NRA has judged this assessment as appropriate. However, the Recommendations for Autonomous and Continual Safety Improvements in Nuclear Power, published by the Ministry of Economy, Trade and Industry (METI) Advisory Committee for Natural Resources and Energy's Working Group on Voluntary Efforts and Continuous Improvements of Nuclear Power on May 30, 2014, points out that “PRA, especially with respect to external factors, has thus far not necessarily been put to use in an active manner in Japan.”



On the premise that all nuclear power businesses position PRA as a part of their risk management programs, the same Recommendations suggests several procedural reforms for quality improvement, but we can see no evidence that these have been referred to in the drafting of the report.

Thus both experience of the implementation of and screening for PRA are shallow, and knowhow concerning implementation and screening are insufficient.

In addition, the NRA takes single equipment failure as the premise, as in the past, assuming only a concomitant loss of power, but this is inadequate. We think that a probabilistic calculation that fully incorporates the simultaneous failure of multiple pieces of equipment (common cause failures) should be required.

3. Earthquakes

The applicant altered the reference seismic motion from 540 cm/s² to 620 cm/s² in the screening panel meeting held on March 5, 2014. This alteration was said to have been “evaluated by the NRA member responsible as ‘Kyushu EPCo has a high level of awareness’”

(Mainichi Shinbun, July 16, 2014), but it was also reported in the Yomiuri Shinbun of March 14, 2014 that “Kyushu EPCo said that ‘If we oppose everything, the restart will be delayed’ (top official) ... and regarding the hike in the reference seismic motion, (the official) said that ‘in a sense, some parts were raised by a horrifying amount.’” This alteration thus appears to have been the result of a profit-and-loss calculation on the part of the applicant, and is neither scientific nor meaningful from the viewpoint of constructing a culture of safety. This is exactly the same as the “attitude of attempting to seek out the minimum values that will fulfil the new standards” (by NRA) that was criticized in the “Current Assessment of the State of Ohi Units 3 and 4” in July 2013.

In addition, of the 16 earthquakes required by the NRA, the applicant excluded the top two earthquakes, citing differences in geological structure. However, this should not be accepted since, based on the 2010 Nationwide Seismic Motion Forecast Map, the reference seismic motion should be set at M7.1 as the baseline for the “greatest magnitude of an earthquake for a land area where the seismic source fault cannot be easily specified in advance.”

4. Volcanoes

A Cumulative volume-time diagram¹, from which the frequency of eruptions can be deduced, can be drawn up with a certain degree of confidence if eruptions are repeated frequently and are observed, but when only extremely poor observational records are available, the method is not reliable. The applicant prepared an average diagram for the five volcanoes that have shown Ultra Plinian² eruptions in the Quaternary Era (the period from roughly 2,600,000 years ago to today) claiming that the eruption occurrence risk was low, but this is exceedingly unscientific and should not be adopted as evidence in favor of a restart.

The applicant has also set up countermeasures against the potential accumulation of volcanic ash from eruptions of Sakurajima, but this not set up in a way that matches with forecasts of the timing of eruptions. At the same time, the ability to predict the timing of eruptions is a premise for Ultra Plinian eruptions, for which countermeasures are very difficult to establish. It is contradictory to accept that eruption forecasts are difficult to make with regard to cases where countermeasures can be taken and that it is possible to deal with situations using forecasts in cases where countermeasures are not possible. We believe Ultra Plinian eruptions should also be treated as unforeseeable.

Additionally, since it is also conceivable that magma could accumulate rapidly over a period of around ten years, a plan should be submitted stipulating that when the stage is reached where monitoring shows the applicant should begin to take countermeasures (GPS expansion 5cm/year), the nuclear reactors should be stopped and the process to remove nuclear fuel set in motion.

5. Evacuation

The evacuation plan was one issue that was not considered in the current screening, and since the NRA has already prepared a guideline on countermeasures for nuclear disasters, it is irresponsible that there should be no screening to test for compliance with the guideline.

6. Inflammation

The applicant claims that “the possibility of the occurrence of a steam explosion is exceedingly small,” and the NRA has judged

that this claim is “reasonable.” However, the occurrence of an explosion involves a large number of factors, such as the proportion and uniformity of contaminants. If the conditions for an explosion exist, then there is the potential for an explosion to occur quite easily, and therefore it should be a requirement that the possible occurrence of steam explosions be taken into account and countermeasures be taken against them.

7. Others

The applicant has cited a management review as part of quality assurance, but the idea that safety measures should not prioritize economic efficiency over safety is one of the important lessons of the Fukushima Daiichi Nuclear Power Station accident. We believe it is necessary to devise a process whereby the conflict between safety measures and management issues can be resolved.

Further, a large number of other deficiencies are seen in various parts of the report, including worker's radiation exposure at the time of accidents, measures for groundwater issues, the reliability of measuring instruments, the problem of aging of facilities, and so on.

8. Upcoming procedures

Following the end of the period for public comments, having received approval for the construction plan and changes in the safety regulations, the procedures call for a pre-operational inspection of the installations and improvements that have actually been implemented. The approval of the governor of Kagoshima Prefecture, where the Sendai nuclear plant is located, and the mayor of Satsuma Sendai City, as well as the assemblies of both the prefecture and city, are also required.

Finally, calls for comments by administrative government agencies are of two types, one which is based on the Administrative Procedure Act and one where the agency implements the call at its own discretion. The call for comments described in this article is of the latter type. In the future, it will be necessary to maintain vigilance with regard to whether or not public comments are appropriately called for in the case of new standard compliance screenings for other nuclear power plants.

(Hajime Matsukubo, CNIC)

1. A chronological chart of a volcano's cumulative discharge showing cumulative discharged material on the Y-axis and time on the X-axis.

2. A catastrophic eruption in which underground magma rises to the surface in a single burst.

2014 World Conference against A & H bombs marks the 69th anniversary of the atomic bombing of Japan

The 2014 World Conference against A & H bombs was held in Hiroshima on August 4-6, and in Nagasaki, on August 7-9, to mark the 69th anniversary of the 1945 atomic bombing of the two cities. Six members of our Citizen's Nuclear Information Center (CNIC) took part in this event. Of these, Baku Nishio, Hideyuki Ban, Masako Sawai, and Hajime Matsukubo acted as lecturer or moderator in session meetings in both the Hiroshima and Nagasaki conferences.



Screening of "Nuclear Savage – The Islands of Secret Project 4.1"

This is a report on the screening of the movie produced to mark the 60th anniversary of the nuclear test at Bikini Atoll in the Marshall Islands. The film was shown at both conference venues.

Sixty years have passed since the hydrogen bomb test Bravo was held at the Bikini Atoll in 1954.

We have recently had the opportunity to hold a screening of a film titled *Nuclear Savage – The Islands of Secret Project 4.1*, directed by Adam Jonas Horowitz, because Adam himself contacted us to ask us if we would show his film in Japan. I was responsible for adding Japanese subtitles to the film. The H-bomb test at the Bikini Atoll is one of the incidents that spurred the movement against A & H bombs. In the wake of the test, the crew of the Japanese tuna fishing boat, the No.5 Fukuryu-maru, was exposed to radiation and the boat's chief radioman Aikichi Kuboyama died on September 23. At that time, people in Japan were alarmed that tuna fish were possibly contaminated with radioactive substances and were too dangerous to eat. Consumers refrained from buying the fish and fishermen were forced to dispose of the unsold fish by burying them in the ground.

The film showed some of the nuclear tests in the Marshall Islands, which were carried out 67 times in total, including the Bravo H-bomb test. It also revealed the confidential Project 4.1, in which radiation exposure experiments were conducted on the bodies of the islanders.

We are confident that showing this film at the 2014 World Conference against A & H bombs was extremely meaningful.

This film proves that the U.S. paid no heed to the human rights of the residents of the Marshall Islands and treated them as something akin to laboratory rats. In the film, an elderly female resident who suffered radiation exposure said very sadly that her first baby had a body that resembled a cluster of grapes and did not look like a human being at all. She also said her second baby looked like a jellyfish, without any bones, and died a few days later. However, her grown-up third child appeared on the screen and said he was healthy, at least up to now.

Photojournalist Hiromitsu Toyosaki (c.f. Who's who 107) gave a talk to explain the contents of the film at the screening. He is an expert on radiation exposure problems, and for more than 25 years has covered the residents of the Marshall Islands and surrounding areas that were irradiated by nuclear weapons tests. He has also studied other people who have been exposed to radiation due to nuclear power generation, uranium mining, and other causes. His Japanese-language book publications on these problems total more than 1,000 pages.

While giving his talk, Mr. Toyosaki presented a number of declassified documents regarding Project 4.1 and other related references, which seemed to have been a great help in deepening the audience's understanding of the film.

We plan to hold a screening of the film in Tokyo on November 16, 2014.

(Hajime Matsukubo, CNIC)

Contaminated Water Woes at Fukushima Daiichi Is Seepage Control Possible Using a “Frozen Earth Barrier”?

The Battle to Contain Contaminated Water

The Fukushima Daiichi Nuclear Power Station (FDNPS) has serious water contamination problems. Water injected to cool the nuclear fuel has picked up radioactive contaminants, and continues to increase in volume due to intrusion of groundwater. About 1,000 tons per day of groundwater flows into Fukushima Daiichi Units 1 to 4 reactors, of which about 400 tons enters the buildings. Part of the other 600 tons comes into contact with sources of pollution in the trenches, but is released into the ocean as polluted water. Under current circumstances, continually increasing amounts of polluted water are being stored in above-ground tanks. At present, the tanks' capacity is 550,000 tons, but there are plans to ensure a future capacity of one million tons.

The Japanese government and TEPCO have stated three fundamental principles for dealing with the contaminated water.

1. Remove the sources of contamination
2. Prevent water from approaching the sources of contamination
3. Prevent contaminated water from leaking

Under the second principle, in May 2014, they began using a new “groundwater bypass” system, in which they collect groundwater from the inland side of the site (the west side), test it for radioactivity, and then release it into the ocean so as to reduce the amount of groundwater entering the buildings. However, even if the groundwater bypass system works well, it only reduces the amount of water entering the buildings by 10 to 100 tons/day.

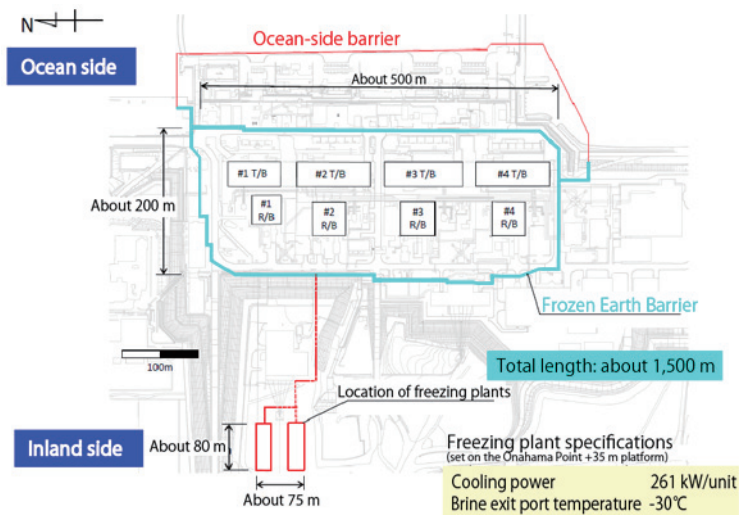


Fig. 1 Position of impervious Frozen Earth Barrier on the inland side.

Frozen Earth Barrier Establishment and Problems

The chief countermeasure under the second and third principles is the establishment of an impervious wall by means of freezing the soil, the “frozen earth barrier” in the title of this article. The plans for this frozen earth barrier, which the government and TEPCO are expecting to be effective, involve burying cooling pipes to a depth of 30 m and at intervals of 1 m so as to surround the Unit 1 to 4 reactor buildings, and freezing the groundwater together with the soil. The total length of the wall will be about 1,500 meters, and to freeze the soil, 30 freezing plants are to be established, each consuming 261 kW of electric power. Construction began in June 2014.

As Fig. 1 shows, even if they try to surround the underground parts of the buildings with a barrier, there are still trenches (tunnels) passing between the buildings with plumbing and cables connecting them. In the trenches of Units 2 and 3, water has accumulated with high concentrations of radioactive contaminants, and this has been called the biggest danger at the FDNPS. TEPCO considers that this radioactive material accumulated at the time of the nuclear accident, so the total amount is about 11,000 tons (5,000 tons at Unit 2 and 6,000 tons at Unit 3), and it is reported to contain cesium 137 plus 134 isotope concentrations totaling 10^9 Bq/L. It goes without saying that it also contains various other radionuclides in addition to cesium.

In order to isolate the buildings by surrounding them with a frozen earth barrier, the contaminated water in the trenches needs to be removed. The government and TEPCO are using the following procedures to try to remove the contaminated water from the trenches.

- I Freezing the junctions of the trenches with the buildings to stop the water
- II Transferring out the contaminated water in the trenches
- III Filling the trenches and shafts by packing them with a mixture of gravel, plastic mortar, grouting and concrete.
- IV Thawing and filling in the junctions of the trenches with the buildings

The method used for procedure I is to introduce cooling pipes and packers (watertight barriers) through a hole in the upper part of the trench, fill the packer with coolant and freeze it (Fig. 2). The temperature of the coolant reaches as

low as minus 30 - 40°C. At present, TEPCO is trying to stop the flow of water by freezing it in the junction between the Unit 2 turbine building and the trench, but it is not going well. For example, for the cross section area of 4.4 m by 5.7 m of the junction of Trench A with the Unit 2 reactor, they have installed 19 cooling pipes and are trying to freeze it, but as of the end of August, changes have been observed in the level of contaminated water within the turbine building. In other words, the contaminated water is not completely frozen.

The method originally involved freezing the interstitial water in the ground, and it was clear even prior to implementing this strategy that there was no proof that the water itself would freeze, so there were doubts about the ability to freeze large amounts of contaminated water in the trenches using this method.

TEPCO compared the demonstration tests with the actual execution and identified two factors in the failure of the latter to freeze the water. Firstly, fluctuations were occurring in the water level in the trench due to fluctuating water levels in the building, and secondly, insufficient adhesion of the packers with each other due to issues with drilling precision in the on-site execution.

From the end of July, TEPCO started injecting ice and dry ice into the trench. As of August 26, they had injected about 558 tons of ice and about 12 tons of dry ice. A temperature decrease in the trench is confirmed to have occurred as a result, so a certain degree of effectiveness has been recognized, but problems have arisen, such as condensation freezing in the observation port, blocking the hole and making it impossible to insert the observation camera. In addition to these measures, they have begun considering increasing the number of cooling pipes and introducing sealant into the gaps to restrict the flow of water. The goal is to remove the contaminated water and complete filling operations by the end of fiscal 2014 by implementing these countermeasures.

Why Did They Choose a Frozen Earth Barrier?

A comparison was made of three means of creating an impervious barrier: frozen earth, clay, and gravel (macadam) diaphragm walls, and the frozen earth barrier was selected on that basis. Tatsuya Shinkawa, head of METI's Nuclear Accident Response Office at the Agency for Natural Resources and Energy, explained, "Our decision was based on the high degree of impermeability and effectiveness at restricting underground water flow, the short construction time, high feasibility, space considerations of width of the impervious barrier needed to surround the buildings, and the fact that the amount of underground water to be handled was small, making it relatively easy to control water levels underground."

While extolling the superiority of the frozen earth barrier, METI sources state, "These efforts to surround the buildings on the inland side over a long period with an impervious barrier using the frozen earth method are a challenge with no precedent anywhere in the world, and involve many technological problems. This should therefore not be left to the company alone, but the government should take the initiative, consider aiding R&D, including that of other means of control, and support its actualization." This indicates active support from the government.

The government is justifying financial aid to TEPCO using the pretext of a need to support R&D because frozen earth barriers constitute an incomplete technology. If the company had chosen a proven method, there would have been no pretext for financial assistance. Could this have been the decisive reason for their choice of the unproven frozen earth barrier method?

The government is bearing the 32 billion yen cost of the frozen earth barrier as the showpiece of its water contamination countermeasures. To invest lots of tax money and energy in an ineffective enterprise, while pointlessly increasing workers' exposure to radioactivity, is unforgivable.

(Nobuko Tanimura, CNIC)

Outline of Freezing Method to Stop Water Flow

A water-tight barrier using the freezing method is created by opening a hole in the top slab of the trench, inserting cooling pipes and packers, and filling the packers with coolant to freeze the water.

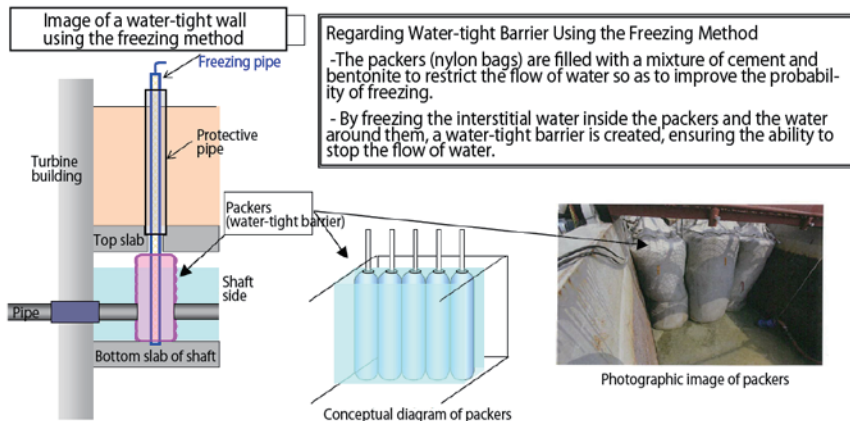


Fig. 2 Measures to remove contaminated water - outline of freezing method to stop water flow

Who's who

Yoshitaka Mukohara, A person who lives with nature and who stands against nuclear power plants with an easy-going style

*Hiroharu Tsuzuki**

Yoshitaka Mukohara was born in 1957 in Hiyoshi-cho, Hioki City, Kagoshima Prefecture. After graduating from the Faculty of Agriculture of Kyoto University and working in Tokyo, he returned to Kagoshima in 1992. At the age of 36, he established Nanpō Shinsha Co., Ltd., a publishing company, in Kagoshima, and became its representative director. While running the business, he organized a group against nuclear power generation, the Kagoshima Anti-Nuclear Network, in 1996. As the former secretary-general of the group, he has been leading the anti-nuke movement and bravely struggling against the pro-nuclear energy national government and electric power capital, with the slogan: "We don't need nuclear power plants in our pleasant hometowns." Today he is the president of the Network and operates

as the core of the local anti-nuclear movement, which consists of different political parties and groups, to prevent the restart of Kyushu Electric Power Company's Sendai Nuclear Power Station, now being given a higher priority than the restart of any other NPS in Japan.

Mr. Mukohara is tall, 184 cm. Unshaven, with a towel around his neck, and wearing rubber-soled workers' shoes, he may look rustic at first glance. However, Nanpō Shinsha, which he runs, has shown an outstanding capability to plan and publish books compared with other rurally-based publishers in this country. In spite of the rustic appearance, Mr. Mukohara is an intellectual. While being a leader in the anti-nuclear movement, he maintains a relaxed atmosphere, which attracts men as well as women. On holidays he labors in the fields, raising potatoes, sweet potatoes, ginger, mustard spinach, and potherb mustard. He is also engaged in rice and duck farming. Such a lifestyle is reflected in his appearance. Let me add that Mr. Mukohara loves *shochu* (a Japanese distilled beverage).

The severe accident at the Fukushima Daiichi Nuclear Power Station, which followed the great earthquake on March 11, 2011, revealed that if an accident occurs at the Sendai NPS, it will spread radioactive fallout over a large area, covering all of Kagoshima Prefecture, far beyond the boundaries of Satsuma Sendai City, where the NPS is based. The NPS thus poses the threat of completely destroying the entire regional community. Mr. Mukohara stood as a candidate in the election for the Kagoshima prefectural governor in July 2012. At that time, pressure for the restart of Sendai NPS Units 1 and 2 was building and voices clamoring for a new Sendai Unit 3 reactor were being heard. Mr. Mukohara's idea was that winning the election and kicking out the incumbent governor would stop the construction of the new reactor and prevent the restart of the existing ones.

Ever since the end of the Second World War, Kagoshima prefectural governors have long been former



Mr. Mukohara is top left. The sign says, "We cannot coexist with nuclear power"

high-level governmental officials (from the now-defunct Ministry of Home Affairs). The top-down political atmosphere is deeply entrenched here, as an old proverb says, "Just let people follow you; no need to keep them informed." Mr. Mukohara was not supported by any vote-gathering bodies, but his resolution and wish, which was to prevent the restart of the Sendai NPS and to create a nuclear-free Kagoshima, impressed existing progressive political parties and organizations, as well as women and conventionally nonpolitical young people. He had only an extremely short period of two months for his campaign, but being supported by citizens opposed to NPSs nationwide, he carried out the campaign with the aid of citizen volunteers and donations.

He was not elected, but more than two hundred thousand people voted for him, responding to his call: "It is you who decides on an NPS-free Kagoshima. You and I, together, will make a move to protect our children's future and the fertile land, and create a future vision of Kagoshima that is full of hope." It was a truly landmark event in Kagoshima, a traditionally conservative area. His election campaign team has today turned into the basis of the movement to resist the Nuclear Regulation Authority, national government, and electric power companies, who are trying to restart the Sendai NPS ahead of other NPSs.

Since March 2011, the Sayonara Nukes March 11 Kagoshima Rally planning committee has organized annual events where all the individuals, groups, and organizations opposed to NPSs and wishing for freedom from them gather from all over Kagoshima. Yoshitaka Mukohara is a central figure on the committee. Without his character and previous actions against NPSs, this committee might be inoperable.

The anti-nuke protest in Kagoshima is now facing a crucial period, but we intend to expand the movement to create a nuclear-free society with Mr. Mukohara, who protests against electric power capital and NPSs with an easy-going style.

*Secretariat of the Group of Plaintiffs against the Kyushu Sendai NPS and Kagoshima Anti-Nuclear Network

NEWS WATCH

Designated Waste Accepted for Interim Storage in Fukushima

On September 1, Governor Yuhei Sato of Fukushima Prefecture told Prime Minister Shinzo Abe that he would accept the government's plans to build interim storage facilities in the towns of Okuma and Futaba in his prefecture for storing wastes such as soils contaminated with radioactivity as a result of the accident at the Fukushima Daiichi Nuclear Power Station and collected in decontamination efforts. One condition is that permanent disposal facilities be built outside the prefecture within 30 years, but there are no prospective sites whatsoever for such facilities.

There is a large amount of contaminated waste within the prefecture, and furthermore, there are no temporary storage sites, with no small amount of it being kept locally at individual houses, offices, school districts, children's facilities, parks, etc. For the prefecture, accepting storage facilities was a painful choice. Upon accepting them, it received a total of 301 billion yen from the government designated for regional development plans.

Nuclear Damage Compensation and Decommissioning Facilitation Corp. Launched

The Nuclear Damage Compensation Facilitation Corporation, which was established after the accident at the Fukushima Daiichi Nuclear Power Station and has taken over management of TEPCO's compensation fund, exceeding 5 trillion yen, has had another mechanism to support TEPCO's decommissioning measures added to it, and was relaunched on August 18 as the Nuclear Damage Compensation and Decommissioning Facilitation Corporation (NDF). The first meeting of Decommissioning Strategy Board, which plays a core role in the NDF's decommissioning section, was held on August 21, and Shunsuke Kondo, director of NUMO and former chairperson of the Japan Atomic Energy Commission, was elected chairperson.

Electric Power Companies Considering Decommissioning Old Reactors

On September 5, Nihon Keizai Shimbun reported that the Kansai Electric Power Co. has begun considering decommissioning Unit 1 (PWR, 340 MW) and Unit 2 (PWR, 500 MW) at its Mihama Nuclear Power Plant. On the same day, Kyodo News sent a release that the Kyushu Electric Power Co. was also considering decommissioning Unit 1 (PWR, 550 MW) at its Genkai Nuclear Power Station. More than 40 years have passed since the Mihama NPP Units 1 and 2 passed their pre-operation inspections, and the Genkai Unit 1 reaches the 40-year mark this year.

Petitions to the Nuclear Regulatory Authority for approval of extended operation of nuclear reactors that have been in operation for more than 40 years and those that will exceed 40 years by July 2015 must be filed between April and July of 2015. A total of seven reactors falls into that category, including Tsuruga Unit 1 (BWR, 357 MW), Takahama Units 1 and 2 (both PWR, 826 MW) and Shimane Unit 1 (BWR, 460 MW), in addition to Mihama Units 1 and 2 and Genkai Unit 1. It was announced on March 27 at a press conference with the president of the Chugoku Electric Power Co. that decommissioning of the Shimane Unit 1 reactor was under consideration.

One reactor after another is reaching the 40-year mark. Each of Japan's electric power companies is facing decisions on whether to decommission or not.

Application for Review of Compatibility of Shika Unit 2 with New Regulatory Requirements

On August 12, the Hokuriku Electric Power Co. filed an application with the Nuclear Regulatory Commission for reviewing the compatibility of Shika Unit 2 (ABWR, 1358 MW) with the new regulatory requirements as a prerequisite for renewed operation. It has also proposed consultation with Ishikawa Prefecture and the town of Shika to gain their consent to changes to facilities based on safety conventions.

Nuclear Disaster Prevention Drills in Fukui

On August 31, Fukui Prefecture conducted nuclear disaster prevention drills at Takahama Unit 3 (PWR, 870 MW), on the supposition that a reactor core damage accident had occurred. There was a record high participation of 2,083 prefectural residents in the drill, and for the first time, evacuation of residents was tested in two stages, from the zone within about five kilometers from the nuclear power plant, followed by evacuation from the zone of five to 30 kilometers from the plant. Participants expressed the view that in the event of a real accident, if residents living outside the five-kilometer zone were trying to evacuate at the same time that directions to evacuate the five-kilometer zone were issued, evacuation of the five-kilometer zone would not proceed smoothly.

Japan and Kazakhstan Sign Nuclear Power Cooperation Memorandum

On August 8, Toshimitsu Motegi, at that time Minister of Economy, Trade and Industry, visited Kazakhstan, where he signed a memorandum on cooperation in the nuclear power field with Minister of Energy Shkolnik. At the same time, he also confirmed future cooperation in the resources and energy field, including construction of a nuclear power plant, with Prime Minister Massimov.

JAEA to Cooperate with Indonesian Agency to Develop High-Temperature Gas-Cooled Reactor

On August 4, JAEA announced that it had entered an agreement with Indonesia's National Atomic Energy Agency (BATAN; *Badan Tenaga Nuklir Nasional*) for R&D cooperation on a high-temperature gas-cooled reactor. JAEA has also concluded a similar cooperative agreement with the National Nuclear Center RK (NNC) in Kazakhstan.

Hitachi to Conduct Joint Research with Three American Universities

On August 28, Hitachi announced it had embarked on joint research with three American universities on the use of transuranium elements (TRU) as a fuel for resource-renewable boiling water reactors (RBWR). One attribute said to distinguish RBWR from fast reactors is that they can be developed on the basis of boiling water reactor technology, which has proven successful in current commercial reactors.

Hitachi's joint research partners are the Massachusetts Institute of Technology, University of Michigan and University of California, Berkeley. The research began in July and will continue until March 2016.

Judgment Recognizing Causality of Nuclear Accident in Suicide Binding

On August 26, in a case brought by the family of a Fukushima woman (58 at the time) who committed suicide after being compelled to evacuate due to the accident at TEPCO's Fukushima Daiichi, the Fukushima District Court recognized the causality of the nuclear accident in the woman's suicide, and passed judgment ordering TEPCO to pay damages of 49 million yen. TEPCO made clear that it would not appeal the judgment, apologizing directly to the woman's family on September 8.



"Goodbye to Nuclear" Rally in Tokyo on Sept. 23, 2014.

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