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Rokkasho Reprocessing Plant:
Leakage from Storage Pool, Defective Construction Work, and Escalating Costs

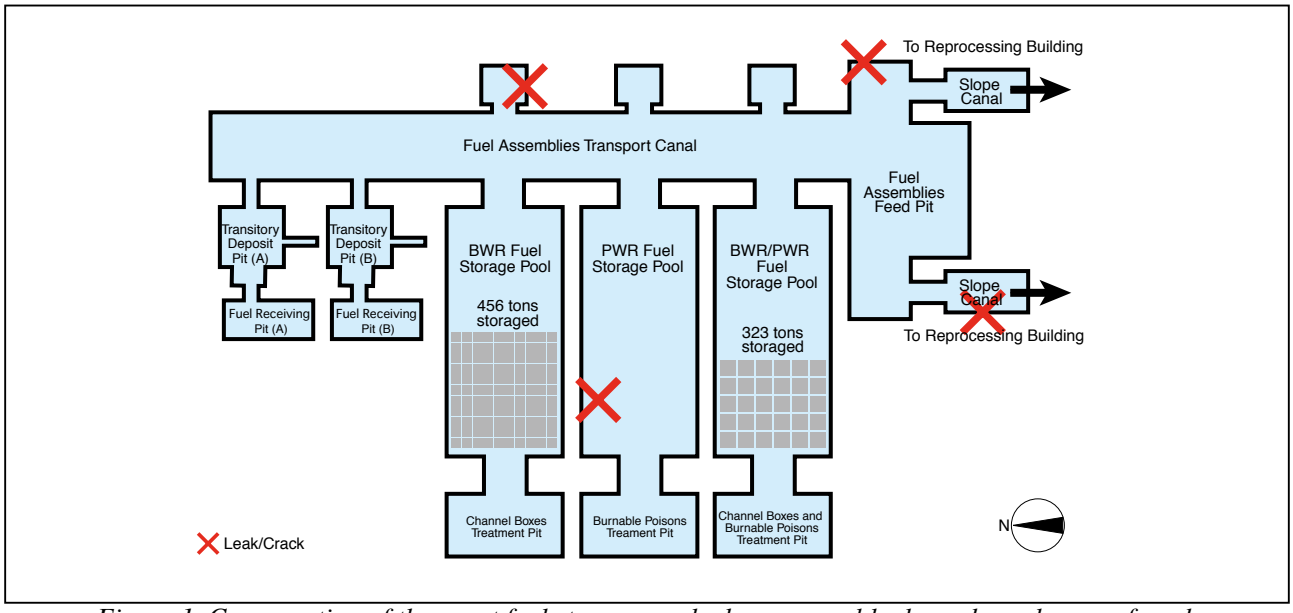


Figure 1. Cross section of the spent fuel storage pool where several leaks and cracks were found. Crosses in the figure indicate points of leakage.

At the Rokkasho Reprocessing Plant (RRP) in Aomori Prefecture, a series of accident has been discovered in the spent fuel storage pool - water leakage from the storage tank and the defective construction work on the pool since July 2001. The accidents show that the safety operation of the reprocessing plant has never been established in terms of the actual technical condition of the plant (For background information on the water leakage accident, see Nuke Info Tokyo No. 88, p. 6-7). A preliminary cost calculation was made to estimate a total cost of the reprocessing project. The result shows that the final cost required for RRP is expected to reach 16 trillion yen.

Endless leakage from spent fuel storage pool

After 16 months of slow and sluggish investigation by Japan Nuclear Fuel Limited (JNFL), the manufacturer of the storage tank, Oye Kogyo Co., was found to have carried out welding works to attach steal plates inside a storage tank and to be responsible for the accident. As figure 1 illustrates, there are three pools inside the facility where spent fuel is stored and cooled before

CONTENTS

it moves to the shearing and dissolving process. Each pool has a maximum storage capacity of 1,000 metric tons of uranium (tU) and it is connected with the others via 100 meter-long water channels. On the inner surface of the storage tank, 6mm-thick stainless steel plates cover the concrete wall to resist water pressure. Currently, a total of 779tU of spent fuels is stored in the pool. According to the JNFL press release, Oye Kogyo Co. (which filed for protection from creditors under corporate rehabilitation law on May 29, 2003) only welded the upper layer of steel plates. Such rough work eventually caused the inside of the storage pool to fail to resist water pressure. The whole area, which needs to be covered with steel plates, is quite large - 11 m (H), 27 m (W), and 13 m (D) - the total length of the welded-line adds up to 1,400 meters. So far, evidence of the leakage has been confirmed at the PWR fuel storage pool (January 2001), at the fuel assemblies transport canal (2003, February), and at the slope canal to the reprocessing building (2003, May).

The construction of the spent fuel storage facility had started prior to other core facilities, and it was completed in 1999. Because some nuclear sites no longer have enough space for storing spent fuel, the storage facility was built at an accelerated pace. In order to construct the facility quickly, the construction company had to skip normal procedures. Therefore, JNFL had to check the 1,400 meters-long welded points between steel plates, because Oye Kogyo Co. admitted that it had made illegal welding operations in other parts as well. Full investigation of the storage facility has been in progress since December 2002. Analysis and repair work for this accident is expected to take more than 6 months. Thus, transportation of spent fuel from power plants has been stopped until the inspection process is completed.

Workers' radiation exposure and the release of radioactivity to the environment

Workers' radiation exposure became an issue as a result of the water leakage accident. Although there were plans to conduct inspections of welded parts by using a remote sensing underwater camera, it was actually done by plant workers who dived into each pool and operated a crack detecting instrument while directly tracing welded line. Because of this procedure, average plant workers' annual radiation dose increased 183% from the previous year. The higher rate of radiation exposure was mainly attributed to the accident investigation of the storage tank. The annual radiation exposure involved 2,199 workers who received less than 5 mSv and 23 workers who received from 5 mSv to 15 mSv. This is the first time in this facility that the workers' radiation exposure has exceeded the value of 5 mSv.

At the same time, it was confirmed that JNFL's radiation monitor recorded an increase of tritium. According to the JNFL's measurement, an increasing value of liquid tritium has been detected after cooling water in the PWR storage pool was drained from the pipe, which was connected to the sea. (See figure 1.)

Total cost becomes 16 trillion yen!

Several media reported on May that the Federation of Electric Power Companies (FEPC) estimated that the total cost of RRP would reach 15.9 trillion yen in 40 years, in which 9.1 trillion yen was not properly financed. However, FEPC

Table 1. The total volume of spent fuel to be reprocessed; and a cost estimation for the Rokkasho Reprocessing Plant

		1996-2005	2006-2025	2026-2045	2046-2080	
Total electricity generation from nuclear		5.87 trillion kWh	8.7 trillion kWh			14.57 trillion kWh
Total volume of spent fuel generated		22,850tU (8,150tU for overseas, 14,700tU for domestic)	17,400tU			40,250tU (8,150tU for overseas)
Spent fuel to be reprocessed at RRP			14,700tU	17,400tU		32,100tU
Cost	Operation cost (to be recovered from the "reprocessing cost fund")		4.2 trillion yen	2.6 trillion yen		6.8 trillion yen
	Disposing and decommissioning cost (recovery scheme unknown)		3.3 trillion yen (TRU waste disposal, etc.)	3.2 trillion yen	2.6 trillion yen (plant decommission)	9.1 trillion yen
	Total		7.5 trillion yen	5.8 trillion yen	2.6 trillion yen	15.9 trillion yen

*Including the depreciation cost of 2.1 trillion yen

denied the existence of such preliminary cost calculation, saying, "FEPC has never conducted such a calculation as reported."

Another source reported that as the electric power market has been partly liberalized, they were pressured by business considerations. Therefore, electric power companies have demanded that the government should support them by protecting them against the risk of excess cost. In responding to this article, the electric company claimed that, "we understand that the compatibility of electricity liberalization and nuclear power is our most urgent concern for our business. We have studied the issue from various perspectives, but we do not have any concrete plans to deal with this matter."

Any prospects for cost recovery?

The RRP is intended to begin commercial operation in July 2005. With regard to the recent cost estimation, an industry magazine reported the following calculation. The amount of the "reprocessing cost fund" which has been collected from the electricity sales of nine companies, is about 4.2 trillion yen. This fund will be used for the 20 years of the plant's operation cost until 2025. The operation cost from 2025 to 2045 will be 2.6 billion yen, which will be collected and installed from the electricity sales until 2025. There is no plan, so far, regarding the financial source of the disposal of TRU and the decommissioning cost for the RRP (9.1 trillion yen).

Regarding the cost of disposing of TRU wastes and dismantling the plant's facilities, electric power companies asked the government to implement "some economic measures to share the cost of 5.9 trillion yen so as to distribute financial burden to the nation widely in small amounts. Therefore, power companies have delayed to proposing any concrete measures to recover the TRU waste disposal cost (3.2 trillion) by 2025. Nevertheless, electric power companies are concerned that the reprocessing policy will become mandatory if any government measures were implemented. Therefore, their companies maintain that they should be given more flexibility as to the business management of the company (that is, freedom to withdraw from the nuclear fuel cycle policy). The electric companies' attitude toward the government shows how the operation of Rokkasho reprocessing plant will be a financial burden.

To use freedom to cancel the reprocessing project

Electric power companies should take advantage of their freedom to withdraw from the reprocessing business. As table 1 on the RRP cost calculation shows, 800tU of spent fuel is planned to be reprocessed each year for 40 years. The assumptions they made - 40 years of plant operation and 800tU of spent fuel processing at 100% utilization factor - are all unrealistic in regard to technical feasibility and plutonium demand and supply. Even the Nuclear Future Study Group, which is composed of members of the electric power industry (representative: Kenji Yamaji, Professor at the Tokyo University; former executive chief at the Central Research Institute of Electric Power Industry) pointed out that "there was doubt about JNFL's operational management capability" and "deficiency in the regulatory authority's technical assessment and judgment capability" ("Nuclear power and nuclear fuel cycle" in *Genshiryoku Eye*, 2002; July). The Tokai reprocessing plants' utilization factor for the past 22 years was only 20% on average, given the 210tU of annual disposing capacity at the initial operation (1981 - 2003), even the utilization factor becomes 35% assuming the 120tU of annual disposing capacity.

Japan already has a surplus amount of plutonium where the MOX fuel utilization has been completely stopped. Moreover, the operation of the RRP will further produce excess plutonium, which would inevitably stimulate public criticism. It is highly likely that even if the reprocessing project were started, the volume of disposed nuclear fuel will soon drop. Thus, operation of the plant has to be stopped soon, since the operation and maintenance cost will only continue to rise.

As the construction of the reprocessing plant has been completed, several experiments have been conducted, involving water, steam, and nitric acid. If we stop this project before the planned uranium experiment, we can avoid most of the operational cost, all the TRU waste disposal cost, and the cost of dismantling the facility. The rest can be recovered from the "reprocessing cost fund." Thus, electric power companies and the Japanese government should immediately scrap the nuclear fuel reprocessing program, because there are no rational reasons to pursue the nuclear fuel cycle for the electric power companies, the government, or the society as a whole.

Masako Sawai (CNIC Staff)

'Interim' Storage Facility:

Fears that it will become a permanent disposal site

On April 11, Tokyo Power Electric Co. (TEPCO) submitted its plan to construct an interim storage facility for spent nuclear fuels in Mutsu city, Aomori Prefecture. Upon receiving TEPCO's request, Mutsu set up a discussion meeting to investigate the project. TEPCO had already finished its feasibility test for the proposed site last March, beginning the test in November 2000.

On May 26, the governor of Mutsu city, Masashi Sugiyama, formally announced that the city would invite the establishment of storage facility to the city. One study estimates that Mutsu city could receive a subsidy of approximately 12.9 billion yen in exchange for accepting nuclear fuel for next 60 years.

This is the first time a power company has sought to build an interim storage facility. However, the construction of such a facility has raised the concern of the local residents, and the Mutsu citizens oppose the plan.

Mutsu city is located in the northern part of Aomori Prefecture. The Rokkasho Reprocessing Plant is 40 km south from the city. Mutsu is known for the mass resistance movement against the mother port of the nuclear ship named "Mutsu", which was later modified into a weather ship - the nuclear reactor being removed out of the hull - after some hundred hours of experimental cruises. The reactor itself can be seen at the exhibition facility near the Mutsu port. Spent fuel from the Mutsu nuclear ship had been kept at the same place, but was later transported to the Japan Atomic Energy Research Institute (JAERI) in Tokaimura, Ibaraki Prefecture. The proposed site for the interim storage facility partly overlaps the spent fuel storage facility for the reactor ship.

According to TEPCO's press release, the storage capacity of the facility is around 5,000 to 6,000 metric tons of uranium (tU) and there will be two buildings, each accommodating 3,000tU. TEPCO expects to store the fuels for up to 50 years, and it plans to begin full operation from 2010. The spent fuel is stored in a cask, which will never open in the interim storage facility. The casks are to be shipped by the long route to the reprocessing plant. The storage facility will share the port of the "Mutsu" weather ship. The spent nuclear fuel is stored in metal casks, using a dry storage method. The casks will be shipped directly from TEPCO's reactor sites to the port of Mutsu.

TEPCO had told the city that several other electric companies, such as Tohoku Electric Power Co. and Japan Atomic Power Co., would jointly use the storage facility, and then it received a preliminary agreement from the city authority to go ahead with the project. (Officially, however, the Tohoku Electric Power has denied plans to use the facility.) The project also includes a plan to set up a joint venture company to manage the storage facility. The revision of the law was made in June 2000 to allow private companies to conduct business by storing spent nuclear fuels.

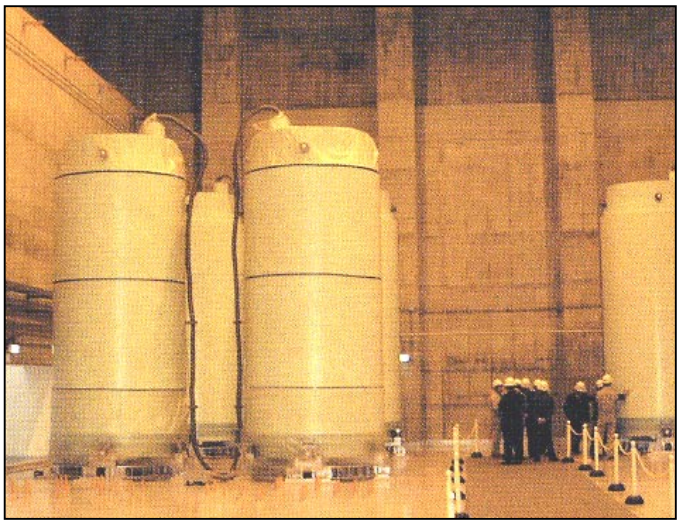
Shortly after TEPCO's announcement, on February 21 2003, it was revealed that Kansai Electric Power Co. also considered building an interim storage facility in Gobo city, Wakayama Prefecture, where the company has planned to construct a thermal power plant (Gobo No.1) on reclaimed land. (Contrary to the claim, the Kansai Electric Power says that it has not made any approaches.) However, the company had to extend its plan every year due to declining demand for electricity - thus the power company has investigated an alteration of the plan to construct the storage facility. With regard to the city's proposal, Wakayama prefectural governor expressed his opposition to Kansai Electric's plan, saying that he would stick to the

construction of a thermal power plant. Assuming that a storage facility will be build at Gobo city, spent nuclear fuels from reactors, which are typically located along the Japan Sea coast - e.g. Tsuruga, Mihama, and Takahama - would need to take a long journey from the Japan Sea to the Pacific Coast, which almost equals the length of Japan Island. This is not a logical strategy for transporting highly radioactive materials. Another source indicates that Kansai Electric is also targeting Obama city in Fukui Prefecture as a candidate site for the interim storage facility, and it is more certain that this will be the case.

Other electric companies have not produced any initiatives for siting an "interim" storage facility; however, every company will have to face the issue of disposing of spent fuel sooner or later. In this regard, Kashiwazaki-city (Niigata Prefecture) and Sendai-city (Kagoshima Prefecture) set up municipal laws to levy nuclear fuels that are stored at the reactor site. TEPCO and Kyushu Electric Power Co. both had to accept such an imposition from the local government. It is also possible that more on-site storage facilities would be built, because it will cost less than constructing an interim storage site. The reason behind recent movements concerning the interim storage facility is that many of the existing storage facilities (all of which are located within the site of nuclear reactors) are reaching their storage capacity, and some of them will not be able to maintain operation unless a new storage site is built. Fukushima No. 2 reactor and Mihama nuclear power plant (owned by Kansai Electric Power Co.) have already exceeded 90 per cent of their spent fuel storage space.

In the Japanese context, "interim storage" for spent fuels means the temporary storage space used before the fuel reprocessing to extract plutonium. In this perspective, the meaning of the term is different from the one used overseas, where the facility's name is given as "recycled fuel storage center." Japan maintains nuclear fuel reprocessing as a pillar of its nuclear policy. The construction of the Rokkasho Reprocessing Plant has been plagued with delays and the permission for adding the second reprocessing plant will not be given in the foreseeable future. The total amount of spent fuels produced from Japan's 52 nuclear reactors reaches 1,000tU to 1,200tU annually. The Rokkasho Reprocessing Plant could handle 800tU per year at best, meaning that the plant could not reprocess all the spent fuels. Therefore, the government says that the storage facility will be constructed to store the spent fuels for several tens of years (40 to 50 years) until they are ready to be reprocessed. However, the actual operation of the Rokkasho Reprocessing Plant is still uncertain. It is possible that the plant will not be able to begin its operation. Therefore, the interim storage facility could become a permanent disposal site. In such a case, the agreement with local government to remove the stored spent fuels could easily be neglected. Local residents are particularly fearful about this. The radioactive materials could be left forever, no matter what the electric power company and the government say. This seems most likely, since research has only been conducted on the disposal of vitrified high-level radioactive waste in Japan, and no study has been done on the direct disposal of spent fuel option in this country.

By Hideyuki Ban (CNIC, Co-director)



Picture 1. Some spent fuels are stored in nuclear power plants (Tokai Daini power plants),
Source: Ministry of Economy, Trade and Industry

June 7, National Gathering Meeting to Give Up Nuclear Energy

Citizens and laborers, who have fought against nuclear power throughout the nation, gathered June 7 to appeal the halting of nuclear power. The "Give up nuclear 2003 meeting," was held at the Tokyo Yoyogi Park, and a total of 5,000 people participated. The meeting was organized by an executive committee of the "Give Up Nuclear 2003 meeting," and it was endorsed by 483 individuals and 218 organizations at the event (the number of endorsements is still increasing). There have been hardly any blackouts without power from nuclear energy. We should walk toward a no nukes society! (pictures: Akira Imai)

Above: CNIC's event booth, selling our publications.
Below: Wind and Photo Voltaic hybrid power generator

Top: Demonstration of canisters for the high level nuclear waste.
Middle: The scene of demonstration walk in the center of city, the banner reads" Give up Nuclear Power -- No Nuclear Power Plants and No Nuclear Weapons for Our Future and Our Children"

Left and Right: Citizens group around the nation performing at the stage of Yoyogi Park

Significant Incidents at Nuclear Power Plants and Nuclear Fuel Facilities in 2002

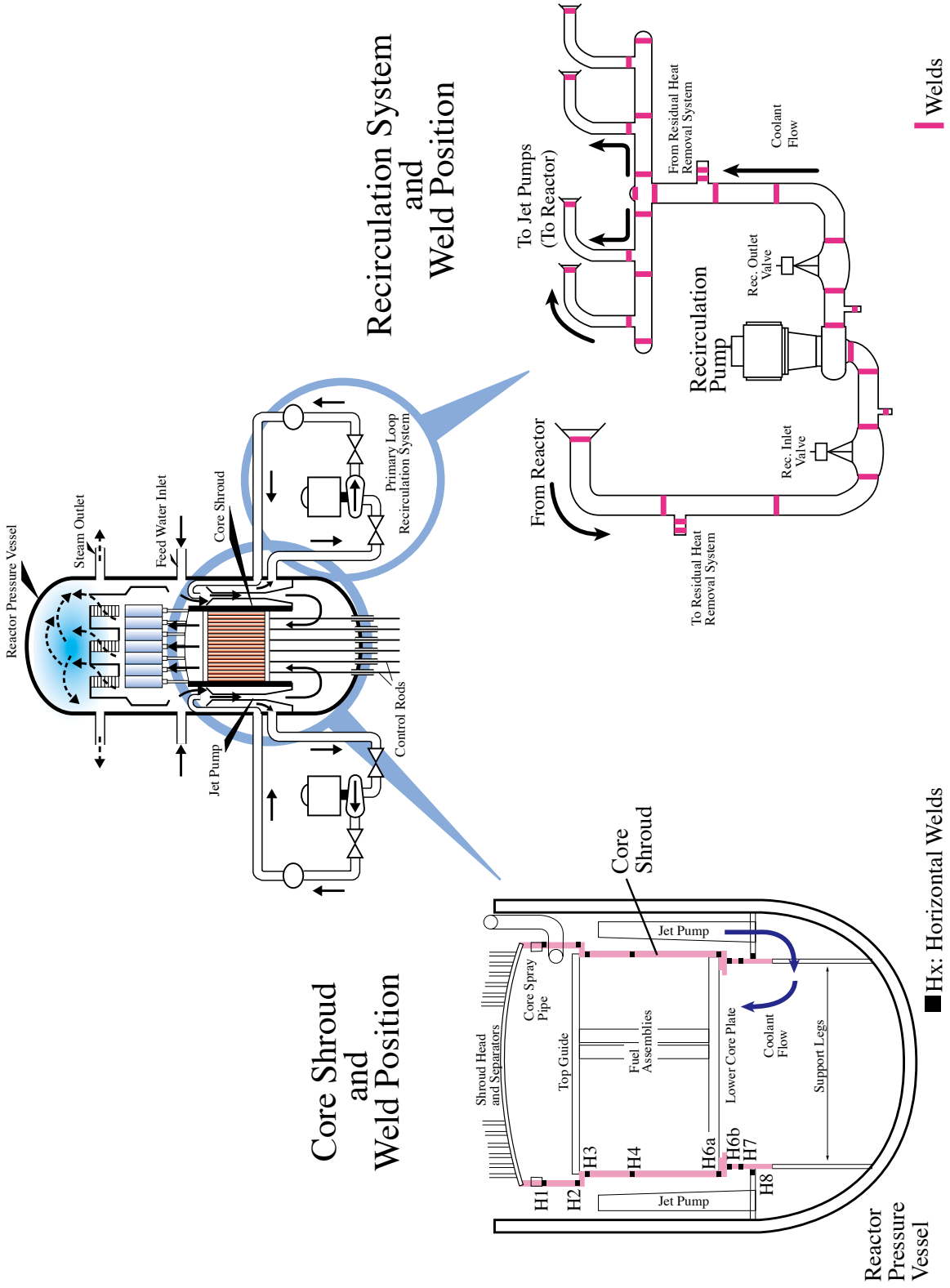
Date	Operator / Owner	Facility Name	Type	Short Description of Events
Jan. 30	KEPCO	Takahama 4	PWR	Damage to steam generator tube found during periodic inspection.
Mar. 4	TEPCO	Kashiwazaki-Kariwa 1	BWR	Reactor manually shut down due to coolant leak found caused by crack in shaft seal ring of recirculation pump motor
Mar. 7	Tohoku-EPCO	Onagawa 2	BWR	Coolant leak detected at condenser coolant flux measurement pipe during periodic inspection; 8cm crack found in welds of two measurement pipes.
Mar. 31	JAPCO	Tokai II	BWR	Reactor automatically shut down due to transmission line stoppage caused by lightning; one of 185 control rods failed to insert into reactor core.
Apr. 2	Hokuriku-EPCO	Shika 1	BWR	Reactor manually shut down due to recirculation pump shaft oscillation during test operation.
Apr. 3	JAPCO	Tokai II	BWR	Reactor manually shut down due to feedwater stopped during test operation; one control rod failed to insert into reactor core.
Apr. 18	Shikoku-EPCO	Ikata 1	PWR	Primary coolant pump shut down due to reactor containment sump water level increased alarm followed primary coolant pump shaft oscillation increased alarm during periodic inspection.
Apr. 21	JNC	Fugen	ATR	Reactor manually shut down due to level of noble gasses storage equipment monitoring system and level of off-gasses chimney monitoring system during test operation; leak found at two special fuel assemblies.
Apr. 26	TEPCO	Kashiwazaki-Kariwa 7	BWR	Radioactive leak found at two fuel assemblies during periodic inspection.
May 5	TEPCO	Kashiwazaki-Kariwa 3	BWR	Reactor power manually reduced due to condenser vacuum rate lowered caused by turbine control equipment failed.
May 14	TEPCO	Kashiwazaki-Kariwa 7	BWR	Cracks found at reactor internal recirculation pump propeller during periodic inspection.
May 25	Chubu-EPCO	Hamaoka 2	BWR	Reactor manually shut down due to water leak from residual heat removal system low pressure injection pipe isolation valve drain piping weld during reactor start-up operation.
May 31	Shikoku-EPCO	Ikata 3	PWR	Leak found at heat exchange tube of feedwater heater during periodic inspection.
Jun. 4	JNC	Tokai site	PFFF	Workers exposed to plutonium during glove exchange operation of glove box at plutonium fuel processing facility.
Jun. 20	Tohoku-EPCO	Onagawa 2	BWR	Reactor manually shut down due to increased water leak from recirculation pump mechanical seal.
Jun. 20	Shikoku-EPCO	Ikata 2	PWR	Containment vessel off-gasses monitoring system stopped due to filtration system being stuck.
Aug. 22	TEPCO	Fukushima I-3	BWR	Cracks found at control rod drive pressurized water system piping around contaiment vessel penetration area.
Aug. 23	TEPCO	Kashiwazaki-Kariwa 3	BWR	Cracks found at welds of core shroud on (made of SUS316L) lower region during periodic inspection; 360 degree crack found at outside surface of H6a position, and at inside surface of H7a position each.
Sep. 2	TEPCO	Fukushima II-2	BWR	Reactor manually shut down due to level of off-gasses radiation monitoring system increased.
Sep. 13	JNFL	Rokkasho Repro.	Repro.	Mistake found at connection of piping in ventilation system.
Sep. 19	Chubu-EPCO	Hamaoka 4	BWR	Cracks found at welds of core shroud (made of SUS316L) lower region during periodic inspection; 360 degree crack found at outside surface of H6a position, and at inside surface of H7a position each.
Sep. 20	Tohoku-EPCO	Onagawa 1	BWR	Cracks found at welds of primary loop recirculation system piping(made of SUS316L) during periodic inspection.
Sep. 20	Chubu-EPCO	Hamaoka 1/3	BWR	Incident not available until Sep. 20, 2003; cracks found at welds of primary loop recirculation system piping (made of SUS316L) during former periodic inspection at Unit 1 and at Unit 3.
Sep. 20	TEPCO	Kashiwazaki-Kariwa 1	BWR	Cracks found at welds of primary loop recirculation system piping (made of SUS316L) during inspection outage.
Sep. 23	Tohoku-EPCO	Onagawa 1	BWR	Cracks found at welds of core shroud (made of SUS304L) middle and lower region during periodic inspection; cracks found at outside surface of H2 position and at outside surface of H6a position.
Sep. 30	Hokkaido-EPCO	Tomari 1/2	PWR	Significant wastage found at maintenance boiler tubes.
Sep. 30	Tohoku-EPCO	Onagawa 1	BWR	Wastage found at residual heat removal system welds during periodic inspection.

Date	Operator / Owner	Facility Name	Type	Short Description of Events
Oct. 3	TEPCO	Fukushima II-2	BWR	Cracks found at welds of core shroud (made of SUS316L) middle region during planned inspection; cracks found at inside surface of H3 position and at inside and outside surface of H4 position.
Oct. 5	TEPCO	Kashiwazaki-Kariwa 1	BWR	Cracks found at welds of core shroud (made of SUS316L) middle region during periodic inspection; cracks found at inside and outside surface of H3 position and at inside surface of H4 position.
Oct. 11	TEPCO	Fukushima I-4	BWR	Cracks found at control rod drive pressurized water system piping around contaiment vessel penetration area.
Oct. 13	TEPCO	Fukushima I-4	BWR	Cracks found at welds of core shroud (made of SUS316L) middle region during inspection outage; cracks found at inside surface of H4 position.
Oct. 21	Tohoku-EPCO	Onagawa 1	BWR	Cracks found at core spray nozzles during periodic inspection.
Oct. 23	TEPCO	Fukushima II-3	BWR	Cracks found at welds of core shroud (made of SUS316L) middle region during inspection outage; cracks found at inside surface of H3 position and at inside surface of H4 position.
Oct. 23	JAPCO	Tokai II	BWR	recirculation flux control valve component lapsed and missed.
Oct. 24	JNFL	Rokkasho Repro.	Repro.	Leaks and cracks found at spent fuel storage pool welds.
Oct. 30	Chubu-EPCO	Hamaoka 4	BWR	Cracks found at welds of primary loop recirculation system piping (made of SUS316L) during periodic inspection.
Oct. 31	TEPCO	Fukushima II-4	BWR	Cracks found at welds of core shroud (made of SUS316L) middle region during inspection outage; cracks found at inside surface of H3 position and at inside and outside surface of H4 position.
Nov. 15	KEPCO	Mihama 1	PWR	Reactor manually shut down due to primary coolant valve leak rate increased; cracks found at sea water drain pipes.
Nov. 25	JNFL	Rokkasho Uranium Enrichment Plant	Enrich.	Homogenizing operation automatically stopped due to anti-overheat interlock system triggered by uranium hexafluoride cylinder temparature increased at RE-1 line homogeneous vessel.
Nov. 26	TEPCO	Fukushima II-4	BWR	Cracks found at welds of primary loop recirculation system piping (made of SUS316L) during inspection outage.
Dec. 3	TEPCO	Kashiwazaki-Kariwa 2	BWR	Cracks found at welds of primary loop recirculation system piping (made of SUS316L) during inspection outage.
Dec. 5	TEPCO	Kashiwazaki-Kariwa 2	BWR	Cracks found at welds of core shroud (made of SUS316L) top, middle and lower region during planned outage; cracks found at outside surface of H1 position and 360 degree crack found at outside surface of H6a position and at inside surface of H7a position.
Dec. 12	JAPCO	Turuga 2	PWR	Rector manually shut down due to fire at turbine building; pipe insulation substace fired.
Dec. 14	Tohoku-EPCO	Onagawa 1	BWR	Leak found at insturmentaion nozzle during periodic inspection.
Dec. 18	TEPCO	Fukushima II-3	BWR	Cracks found at welds of primary loop recirculation system piping (made of SUS316L) during inspection outage.
Dec. 26	TEPCO	Fukushima II-2	BWR	Cracks found at welds of primary loop recirculation system piping (made of SUS316L) during inspection outage.

TEPCO: Tokyo Electric Power Co.
JNC: Japan Nuclear Cycle Developent Institute
KEPCO: Kansai Electric Power Co.
Tohoku-EPCO: Tohoku Electric Power Co.
JAPCO: Japan Atomic Power Co.
Hokuriku-EPCO: Hokuriku Electric Power Co.
JNFL: Japan Nuclear Fuel Limited
Shikoku-EPCO: Shikoku Electric Power Co.
Chubu-EPCO: Chubu Electric Power Co.
Hokkaido-EPCO: Hokkaido Electric Power Co.

ATR: Advanced Thermal Reactor
BWR: Boiling Water Reactor
PWR: Pressurized Water Reactor
PFFF: Plutonium Fuel Fabrication Facility
Repro.: Spent Fuel Reprocessing Plant
Enrich.: Uranium Enrichment Plant

Typical Boiling Water Reactor Structure



Anti-Nuke Who's Who

Yoko Nozaka

Representative of "Citizens against the interim storage facility in Shimokita"

By Midori Inaba

"Citizens against the interim storage facility in Shimokita" is a group of farmers, social workers, and kindergarten teachers whose aim is to make Mutsu and Shimokita a better area. This summer, we will start our third year of a campaign against the city's decision to build a storage facility for spent fuel.

Shimokita peninsula began its history as a nuclear peninsula by becoming a mother port for the nuclear ship called Mutsu. Although Mutsu was retired, after its retirement, the reactor that was on the ship was displayed for the public at the Museum of Science in the city. By an international standard it is quite unusual to place such a reactor in a public place since it emits radiation and this small amount of radiation may affect children who visit the museum as a part of their social studies.

Our representative, Yoko Nozaka is an experienced kindergarten teacher and also known as the best expert on children's in Mutsu. Our group won local support thanks to her presence in the local community. Until her retirement to prepare for the local referendum, she was a director of a local commission on children and a trainer in the Mutsu municipal for youth education. Currently, she is a director of recreational associations in Mutsu and also a staff member of an international support group on raising children called "Hugging mothers" (*Dakko-no-kai*) and "the toy library". Moreover, she is a volunteer for a group who read stories to the children and often appears on local FM radio to talk about issues concerning children.

Her writings are very effective because they are written simply enough for everyone to understand the problems of the interim storage facility for spent fuel. Readers can relate to this issue as an extension of their daily conversations.

She is a mother of four girls and has had a second grandchild this past spring. She expresses her strong opposition to the nuclear facility— " not for our children!" Her words reach out to many people as a powerful and sincere statement. She is studying counseling to further develop her career in children's issues. Her presence is truly irreplaceable.

The city mayor pushed the city council to decide to accept the invitation to set up such facilities last June. Our point of view on this matter is that it is now necessary to get rid of all nuclear facilities so we can keep our hope for the future. We also believe that everyone uses nuclear power is responsible for its waste. With Yoko Nozaka's leadership we will continue our campaign to put an end to the interim storage facility planned for Mutsu.

Midori Inaba is a member of the" Citizens Against the Interim Storage Facility in Shimokita"

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NEWS WATCH

TEPCO (Tokyo Electric Power Co.) Seeks to Reactivate Nuclear Power Reactors

As of June 15, a total of 16 out of 17 nuclear reactors in three plant sites have been shut down. TEPCO is planning to reactivate eight power reactors this coming August.

Uppermost in TEPCO's mind is that it wants to restart Fukushima Daiich unit 6 (BWR, 1100MW), located across Okuma town and Futaba town in Fukushima Prefecture, and Kashiwazaki-Kariwa unit 7(ABWR, 1356MW), located across Kashiwazaki city and Kariwa village in Niigata Prefecture. On May 15, the Energy Policy Promotion Council in Futaba region, whose members are from eight neighboring towns and villages, requested ANIS (Agency for Nuclear Industrial Safety) and TEPCO to reactivate nuclear reactors soon. On May 23, the Council also approached the Governor of Fukushima Prefecture and a chairman of Fukushima Prefectural assembly, seeking the resumption of operations in its earliest stage. Although the Governor of Eisaku Sato shows a careful attitude to reactivating the reactors, the Prefecture assembly agreed on June 9 to accept the resumption of Fukushima Daiich 6 unit. However, the result of a survey by Fukushima Prefecture inquiring about the opinion of 82 communities (cities, towns, and villages), excluding the eight communities near the plant, showed that many residents wanted local government and the Prefectural assembly to respond to the current situation in a more careful manner. Those who voted against the quick resumption were twice as many as those who agreed.

At the Niigata Prefecture, the Minister of METI (Ministry of Economy, Trade and Industry) visited Kashiwazaki city and apologized to the city, village, and local assembly for the accidents in which problems were concealed from the public. He also expressed his apologies to local people at the meeting organized by ANIS that night. During the local meeting, ANIS emphasized that reactivating the unit 7 would have no problems. The mayors of Kashiwazaki city and Kariwa village notified the Prefecture that they would approve the reactivation of the reactors. Kashiwazaki-Kariwa 7 unit restarted on June 20 and Fukushima Daiich 1 unit restarted on July 14, respectively.

The Cost of Dismantling JAERI and JNC's Facility will be 2 Trillion Yen

On May 23, MEXT (Ministry of Education, Culture, Sports, Science and Technology) held a preparatory meeting for the merger of JAERI (Japan Atomic Energy Research Institute) and JNC (Japan Nuclear Cycle Development Institute). At the meeting, MEXT reported a test calculation that about 80 years and 2 trillion yen would be required to dismantle and dispose of all the facilities that JAERI and JNC own and operate.

This calculation covers 186 facilities' dismantling cost. Those include, to name a few, the Fast Breeder Reactor, "Monju"; the Advanced Thermal Reactor "Fugen"; the Tokai reprocessing plant; the High Temperature Engineering Test Reactor owned by JAERI; and the Japan Material Testing Reactor. The breakdown in the cost is as follows: 30 billion yen for the operation and the maintenance before dismantling the facilities, 600 billion yen for dismantling, 550 billion yen for the treatment of nuclear wastes, 600 billion yen for the disposing of wastes, and 240 billion yen for the transporting of the waste. This all adds up to 2 trillion and 20 billion yen.

Annual expenditure will be between 10 to 30 billion yen, which accounts for only 5% to 15% of 230 billion yen of the annual business budget for JAERI and JNC. Therefore, MEXT explained that the decommissioning cost can

be recovered without creating any special financial measures. Committee members at the meeting responded to the MEXT's rationalization, "the establishment of a budget for the cost recovery should be made clear," and others commented "a new corporate body should be created for the disposal plan."

Kagoshima Prefecture Accepts a Survey to be Conducted for the Construction of Sendai 3 unit

Kagoshima Prefectural Governor, Ryutaro Suga, announced at a press conference held on May 16 that the prefectural government has approved an environmental survey to be conducted for the proposed construction of Kyushu Electric Power Co.'s Sendai 3 (APWR, 1500 MW class). In September 2000 Kyushu Electric asked Kagoshima Prefecture to allow the survey, and the governor sent his response to KEPCO in April 2001 that the Prefecture would suspend its decision, citing that the power demand growth was slowing down and that neighboring municipalities had split opinions on the project. He stated then that "suspension was the final answer to the electric power company," implying a virtual refusal. Therefore his recent announcement to accept the proposal of a survey has made citizens angry and disappointed.

The situations he cited as reasons for the suspension have not changed. The power demand has not grown, and the opinions of the neighboring municipalities remain divided: 4 in favor, 4 against and 1 withholding its judgment. In spite of this, the governor accepted the survey, saying that the survey and the construction are different matters, adding that he didn't approve or accept the construction.

Onagawa 3 Automatic Shutdown due to an Earthquake

On May 26 a strong earthquake hit the Tohoku region, and it was named "the Sanriku Minami Earthquake." Due to this event, Tohoku Electric Power Co.'s Onagawa 3 (BWR, 825 MW), located in Onagawa, Miyagi Prefecture, was automatically shut down, because an acceleration detector recorded an excessive value beyond the set point. The maximum acceleration of the reactor is said to have been 225 Gal, which was recorded by the detector installed in the second basement of the reactor. Reactors 1 and 2 were stopped because they were under regular inspections.

There have been four cases, in which reactors in Japan have automatically shut down due to earthquakes. Of these, two shutdowns were caused by higher vibration of turbines, and the other two by abnormal power ramps. It was the first time that a reactor has shut down because of high acceleration. There were another two cases in which a reactor was manually shut down.

As a result of an inspection of Onagawa 3 after the shutdown, a leakage of a small amount of cooling water was found from a joint part of a filter attached to the main steam piping.

Decision Made on the Decommissioning of Musashi Institute of Technology (MIT)'s Reactor

On May 20, a board of directors of the Goto Educational Association, which runs MIT, decided to decommission the MIT's Research Reactor (MITRR), located in Kawasaki-city, Kanagawa Prefecture. Since December 12, 1989, the reactor has suspended its operation due to the leakage accident of cooling water from holes found in a reactor tank. The decision was made after considering the following factors: the cost of reactivating MITRR will be several times more costly than decommissioning; and the United States will no longer accept spent fuel after 2009; Consideration was also given to the feelings of local residents, where the construction of houses are rapidly going on in the vicinity of this area. The reactor's thermal output is 100kW, and it was used for research and educational purposes such as research on radiation therapy.

On May 3, the chief of the nuclear reactor research facilities of Kyoto University made an announcement that the KUR (Kyoto University Reactor) of 500kW thermal output, located at Kumatori-town in Osaka, will "pause" in its operation in March 2006 as the U.S. will stop accepting spent fuel.

For more updated information, please viste our website at www.cnic.or.jp/english or contact us via E-mail : cnic-jp@poiijnet.or.jp

Citizens' Nuclear Information Center