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A series of fatalities and injuries occur at TEPCO's three nuclear plants

Safety management capabilities questioned

Introduction

Work-related fatalities and injuries have been occurring at Tokyo Electric Power Company's (TEPCO) Fukushima Daiichi Nuclear Power Station (FDNPS) frequently since 2014. The total number of such accidents in FY2014, ending in March 2015, is likely to more than double that in FY2013. On January 16, the Fukushima Labor Bureau requested TEPCO to take thorough and sufficient measures to prevent accidents at its nuclear power plants. Despite this request, three accidents occurred in close succession at FDNPS, the Fukushima Daini plant, and the Kashiwazaki-Kariwa plant in Niigata Prefecture during the period January 19 to 20, resulting in two deaths and one serious injury.

In March 2014, an FDNPS worker engaged in repairing the foundation of the radioactive-waste storage facility died when he was buried under collapsed earth. Since then, fatal and serious accidents have occurred successively at nuclear power plants. All of the accidents could have been prevented if the workers had observed basic safety rules, and if sufficient safety measures had been in place at the workplaces. Although we have previously questioned the plant operator's safety management capabilities and their attitude towards worker safety, we would like to do so once again.

A series of fatalities and injuries

On January 19, an employee of a prime contractor died at FDNPS after he fell into an 11m-deep water tank, which was empty at the time. He was inspecting the container with two other workers at the top of the tank. He was said to have been wearing a harness, but the hook was not connected to the life rope.

Water storage tanks (Photo by TEPCO)

At the Fukushima Daini nuclear plant, a subcontractor employee preparing for an inspection in a radioactive-waste processing facility on January 20 died when his head was caught between the 700 kg steel container and its supporting steel frame. When the workers remove the bolts from the equipment, it is required that more than three people jointly secure the equipment firmly in advance using a crane. However, this process was not mentioned in the operating procedures manual, and the workers did not do so.

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At the Kashiwazaki-Kariwa NPP, a worker was performing an inspection and taking photos in a facility outside the Unit 2 turbine building on January 19 when he fell from the 3.5-meter-high passageway and sustained serious injuries to several parts of his body, including broken legs. He was not wearing a safety harness at that time.

In TEPCO's news conference on January 20, Managing Executive Officer Takafumi Anegawa said with a dazed look that he had come to realize that his company's policies for improvements lacked effective measures. He said the common factor behind the three serious accidents that occurred at TEPCO's three nuclear power plants at almost the same time was that there was something within his company which was obstructing its efforts to prevent such accidents.

On January 22, the Health, Labor and Welfare Minister called on the TEPCO president to take every possible measure to prevent work-related accidents at NPPs. In response, the plant operator temporarily suspended operations at the three nuclear plants and launched safety inspections. At FDNPS, all operations were suspended except the water processing and sampling.

On February 3, plant operations were resumed at the facilities as soon as the two-week safety inspections were completed. The results of the inspections were quite amazing. Of the 436 inspected operations, as many as 392, or 90 percent of the total, showed deficiencies in terms of safety management. New safety measures were therefore added to the working procedures, such as measures to prevent worker fall accidents.

Contractor files sent to prosecutors in connection with a worker killed in mudslide in Fukushima NPP last March

On March 28, 2014, an FDNPS worker engaged in excavation work to repair a debris storage facility died when he was buried in a mudslide. On February 5, 2015, the Tomioka Labor Standards Inspection Office sent the files of Tokyo-based first-tier subcontractor, Kenso Kogyo Co., which was the subcontractor for the repair work, to the Fukushima District prosecutors, along with files of the construction site supervisor, on suspicion of violating the Industrial Safety and Health Law.

The subcontractor and the construction-site supervisor are suspected of having failed to take mudslide prevention measures, such as installing a wooden barrier in front of the piles of mud, when the worker was in the 2-meter-deep hole to repair cracks in the concrete foundation of the storage facility. They are also suspected of having failed to appoint a supervisor for the excavation work, as required by the law.

This means that measures that are normally taken at other construction sites were not implemented at the NPP site. The construction-site supervisor claimed that he failed to take the mudslide prevention measures because the repair work had to be completed by the end of March 2014, and the excavation work was required to be done in a big hurry.

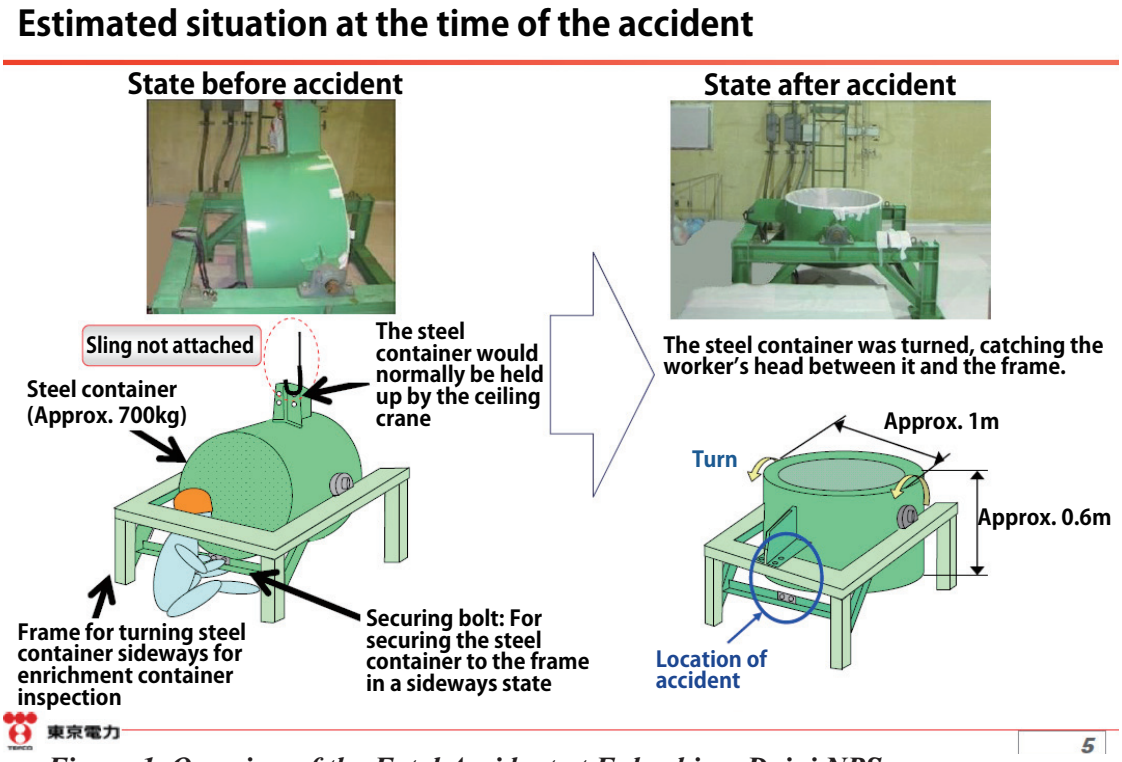


Figure 1. Overview of the Fatal Accident at Fukushima Daini NPS

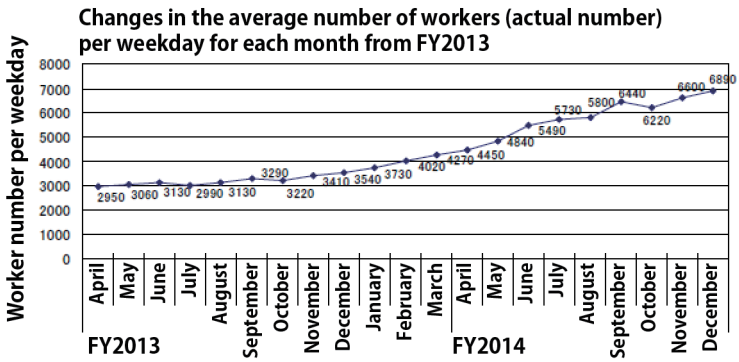


Figure 2. Changes in Worker Number at FDNPS

The graph above show the changes in the number of workers (actual number) per weekday.The forecast for the number (workers in cooperating companies and TEPCO staff) for February work calls for around 6,770 workers per weekday.

Extremely difficult working conditions at Fukushima NPP

Since 2014, the number of the various types of operations for containing highly-radioactive water has been increasing sharply at FDNPS. These include work to build more contaminated-water storage tanks, reinforcement of the advanced liquid processing system (ALPS) designed to purify contaminated water, and the operation to block the water flow in the section connecting the underground tunnel on the sea side of the turbine building with the building itself. At the plant, a great amount of underground water is running under the premises and flowing into the turbine building. As soon as the water touches the molten fuel, it becomes highly contaminated. The water then flows into the underground tunnel, and accumulates there.

In addition, the construction of large facilities are currently underway. These include, for example, a new office building, the entry/exit management facility, and a facility for incineration of workers' protective clothing and other radioactive contaminated refuse. The number of workers entering the FDNPS site each day totaled 3,400 as of December 2013, but in December 2014 this total more than doubled to nearly 7,000.

Amid this situation, after the afore-mentioned fatal accident in March 2014, a series of worker fall accidents occurred in the May-June period due to poor footing and scaffolding. There were frequent accidents involving workers falling from ladders or make-shift hatchways and sustaining serious injuries. On September 30, a worker handling a high-voltage power cable was seriously injured when he received an electric shock. On November 7, two workers engaged in construction of a contaminated-water storage tank were hit by a 390 kg steel rail falling from the top of the tank. One of the workers suffered serious damage to his spinal cord and the other also suffered serious injuries. On January 13, 2015, another worker sustained serious injuries while performing decontamination work. A steel sheet being lifted by a crane hit him in the head.

It is now about four years since the nuclear accident occurred at FDNPS. Despite this fact, there still remain severely contaminated debris that cannot be touched due to strong radiation, and highly contaminated "hot spots" areas at the plant. The forest of contaminated-water storage tanks is also posing a great threat. Workers are being forced to expose themselves to high-level radiation from the tanks. At FDNPS, workers are required to do many kinds of work that were previously unexpected and are not mentioned in the manual. Such work is totally different from the maintenance and inspection work that is routinely conducted at the plants under normal conditions. The workers are thus having to adjust to new types of technology, unfamiliar working procedures, and unprecedented methods for the planning and management of work plans. This is an extremely difficult task for workers.

TEPCO's report on measures for preventing work-related accidents

On February 16, TEPCO released the report on measures for preventing recurrences of work-related accidents requested by the Ministry of Health, Labor and Welfare and the Fukushima Prefectural Labor Standards Office. In this report, however, TEPCO presented only ordinary and predictable measures, for example, making efforts to enhance safety awareness by the prime contractors through sufficient communication with them about methods of supervision of daily construction work. Another measure included was to coordinate the period and areas of work in the work process adjustment committee and carry out thorough safety management. For the sake of inexperienced workers, TEPCO said it plans to set up an experience-based educational facility, placing emphasis on newcomer training and improvements in their ability to predict risks. Nevertheless, TEPCO has yet to formulate any drastic or fundamental countermeasures against work-related accidents.

Workers' complaints and opinions not taken into account

TEPCO has conducted questionnaire surveys on working conditions at Fukushima Daiichi NPS five times thus far. (The first survey was carried out in May 2012, the second in September-October 2012, the third in February-March 2013, the fourth in October-November 2013 and the fifth in August-September 2014.) Serious complaints about work were submitted to the survey by plant workers. Here are some examples of their complaints.

"We want to know exactly which parts of the construction site are dangerous," "We need more detailed information about the plant's premises, such as when, where and what sort of injuries occurred, or which equipment is out of order or broken," "We are worried about accidents and injuries at work sites," "The order of work priorities should be set and work adjustment should be made in advance so that workers can proceed with their work more smoothly. TEPCO gives priority to construction speed over safety. The work process adjustment committee has already become a meeting in which the company presses workers to speed up their work schedules." "The construction work periods are too short."

If TEPCO had listened to their voices seriously and had taken the necessary countermeasures, it could have prevented most of the accidents that have taken place during the past weeks. Even now, however, TEPCO does not seem to be willing to lend an ear to the voices of the workers.

We will seek effective measures to be taken jointly by the government and TEPCO

TEPCO's recent surveys on nuclear plant workers have revealed that the problems of many labor brokers disguised as subcontractors as well as illegal dispatching arrangements remain rampant. Another problem that has been disclosed is that the danger allowances are not paid properly.

In August 2014, this writer provided consultation services directly to nuclear plant workers in Hiroshima, jointly with the "We don't want nuclear power plants Hiroshima citizens group." At that time, we discovered that some workers faced serious work-related problems, such as deductions from their salaries for mandatory health check-up fees, and compensation for the victims of work-related traffic accidents. Some other workers complained of the employer's unilateral decision to change part of the labor contract. We reported on these illegal cases to the government officials in the negotiations held on January 26 between the citizens' group and the government. This effort has successfully paved the way for an official investigation on these cases, as well as provision of guidance on corrective measures, by the Labor Standards Inspection Office.

Moreover, some workers, engaged in emergency operations at the FDNPS and decontamination work in many parts of Fukushima Prefecture, complained of similar problems. They claimed that they were forced to pay for health examination fees, that their employers did not subscribe to the employment insurance scheme, that the compensation for the victims of work-related traffic accidents was deducted from their salaries, and that the danger allowances were not paid to the workers.

Without employment security and the guarantee of payment of legitimate salary amounts, it will be impossible to improve the working environment in nuclear power plants. In view of this situation, we are determined to support nuclear plant workers through consultation services, in collaboration with the National Occupational Safety and Health Center, the National Network for the Concerns of Workers Exposed to Radiation, and other related organizations and groups.

At the 13th negotiation meeting held on February 19 between the government and the National Occupational Safety and Health Center, in which this writer and other people concerned also participated, discussions were held on such issues as how to prevent disguised subcontracting, illegal dispatching arrangements and violation of labor laws. We demanded that the Labor Standards Inspection Office collect data on the FDNPS workers who had faced problems involving the Labor Standards Law, the Employment Security Law or Worker Dispatch Law, and the Industrial Safety and Health Law. To achieve this, we also demanded that a system of collaboration be established between the Ministry of Health, Labor, and Welfare and the Nuclear Accident Response Office of the Ministry of Economy, Trade and Industry's Natural Resources and Energy Agency.

In the same negotiations, we made two additional demands concerning prevention of work-related accidents at FDNPS.

One of these was that a provision be added to the Industrial Safety and Health Law to the effect that the nuclear plant operator is responsible for management of the plant workers' radiation doses and other matters related to their health and safety. On January 22, 2015, the Health and Welfare Minister called on TEPCO to be aware that the company is not only the contractor but also the owner of the nuclear power plant and the party responsible for the 2011 nuclear accident. With this awareness, the utility should take all possible measures to prevent work-related accidents, said the minister. However, TEPCO has no responsibility for the matters provided for in the Industrial Safety and Health Law, and no matter how strongly the minister demands that the firm gain the required awareness, there is a limit to the effect of his request.

The second demand was that the government office in charge of supervising nuclear power plants station officials at FDNPS at all times and, jointly with the plant operator, make best efforts to prevent work-related accidents at workplaces. TEPCO totally lacks a sense of responsibility for work-related accidents, and does not have the ability, experience, nor technology to prevent such accidents. Given this situation, if TEPCO is left in complete charge of this matter, it will be impossible to prevent further accidents.

We will, therefore, maintain steady efforts to negotiate with the government and request that TEPCO take effective measures.

It is impermissible to raise the emergency workers' exposure limit at the sacrifice of their health

The radiation exposure dose limit for emergency workers at the FDNPS has been raised from 100 mSv to 250 mSv due to a concern over great difficulties in carrying out the nuclear accident cleanup operations. The higher official limit on emergency workers' effective exposure doses was put into effect on March 14, three days after the Great Tohoku Earthquake occurred. On that day, a Nuclear Emergency Situation declaration was issued, and the higher exposure limit has been imposed whenever it was absolutely necessary since that time. Although the declaration has yet to be lifted even now, four years after the nuclear accident, the 250 mSv limit was lowered on December 16, 2011 when former Prime Minister Yoshihiko Noda declared an end to the most critical phase of the accident at FDNPS.

At present, the Nuclear Regulation Authority (NRA) is considering raising the maximum radiation exposure limit for emergency nuclear workers again. This is planned for the purpose of maintaining nuclear power on the assumption that severe accidents may occur at nuclear plants, and sacrifices the health of exposed workers for that purpose.

At its meeting on December 10, 2014, NRA expressed its intention to study plans to raise the exposure limit for emergency workers to 250 mSv and to manage emergency workers' exposure doses separately from those of non-emergency workers.

Article 3 of the law concerning technological standards for prevention of radiation hazards stipulates that the basic rule should be to set the radiation exposure limit for workers and the general public handling substances or equipment generating radiation for which the standards are applied at a level below which radiation hazards may emerge.

According to NRA, there are no existing documents that prove radiation exposure of up to 250 mSv can cause acute clinical radiation hazard symptoms. Based on this belief, the committee is discussing its plan to raise the emergency exposure limit to 250 mSv. In our negotiations with the government on January 26, we referred to this point and presented a number of cases in which radiation exposure of less than 100 mSv had caused acute radiation symptoms. One of these was a number of iridium exposure accidents that occurred in Japan in 1971. Another case we cited was that of soldiers from Kamo-gun, Hiroshima Prefecture, who entered Hiroshima City on August 6, 1945, immediately after the atomic bombing. They also developed acute symptoms after suffering radiation exposure of less than 100 mSv. We then requested that NRA study possible damage to worker health that might occur by raising the exposure limit from the current 100 mSv.

The separate management of emergency exposure doses and non-emergency exposure doses means, for example, that an emergency worker who suffered 250 mSv of exposure, did non-emergency work on other occasion because he is legally allowed to do so, and suffered 50 mSv more exposure, would have an annual exposure dose totaling 300 mSv. If he continues to do the non-emergency work in the following year, the total would reach 350 mSv. Indications are that in the future workers will be exposed to a far greater amount of radiation. The Ministry of Health, Labor and Welfare, however, issued a circular notice advising workers with exposure doses of over 100 mSv not to engage in further work involving exposure to radiation.

In the negotiations with the government, we insisted that NRA's attitude in approving separate management of emergency exposure doses and non-emergency doses without taking into consideration the Ministry of Health, Labor and Welfare's circular notice is totally unacceptable. The NRA secretariat refrained from discussing the matter, saying it would now begin to study the issue.

Workers who agree to do emergency work no matter if their annual exposure doses exceed the official limit, should do so as "volunteers". But this necessary condition does not fit with the existing labor laws. Article 25 of the Industrial Safety and Health Law stipulates that business operators are required to take necessary safety measures for their workers, such as evacuating them from their work sites. In negotiations with the government on February 19, we asked the Ministry of Health, Labor and Welfare to notify NRA and the government of the fact that business operators are not allowed to force their workers to do emergency work, because such work should be done voluntarily.

As things stand now, we will observe closely the development of future discussions on this issue at NRA and the Radiation Council.

By Mikiko Watanabe, Feb. 15, 2015

Postscript: Ministry of Health, Labour and Welfare decided a policy to raise emergency exposure dose limit from 100mSv to 250 mSv, too. At the same time, the Ministry is charged with protecting the lives and health of citizens and workers.(March 30)

Current State of Post-Accident Operations at Fukushima Daiichi Nuclear Power Station November 2014 to February 2015

State of the Plant

Many of the measuring instruments installed in the Fukushima Daiichi Nuclear Power Station (FDNPS) measuring system continue to malfunction as a result of the accident. Although there is no guarantee of the accuracy of values being measured, if the values from the measuring instruments are taken as the premise, from the water temperature in the containment vessels and the spent fuel pools, and from the releases of Xenon-135, for example, it can be estimated that the state of the reactors is stable.

From assessments made by Tokyo Electric Power Company (TEPCO) alone, even now 10 million Bq/h of radioactive substances are being released into the atmosphere. (See Figure 1)

Current State of Post-Accident Operations

1. State of Operations concerning Spent Fuel Pools

Removal of fuel assemblies from Unit 4 began in November 2013, and of the 1,535 (1,331 spent and 204 new fuels) assemblies stored in the Unit 4 spent fuel pool (SPF) at the time of the accident, 1,355 (including three damaged assemblies) have been transferred to the common pool and 180 new assemblies have been transferred to the Unit 6 SPF (December 22, 2014).

Measures are being implemented at Unit 3 to reduce the radiation dose level in preparation for the work of removing the fuel, but the level is still far above the target level of 1 mSv/h and additional measures are now being carried out. Furthermore, work to remove large pieces of debris that fell into the SPF in an accident that occurred in August 2014 had been suspended, but resumed again on December 17.

As preparatory work for the dismantling of the cover in place around the Unit 1 reactor building, application of an anti-dispersal agent to prevent dispersal of radioactive substances remaining in the building was begun on October 22, 2014. From October to December, some of the cover roof panels were removed in order to check the conditions inside. Dismantling of the cover is scheduled to begin from March 2015.

There has been no great progress in Unit 2.

2. The Problem of Contaminated Water

According to an estimate by TEPCO, roughly 800 to 1,000 m^3 of groundwater are flowing into FDNPS Units 1 to 4 per day, 300 m^3 of which is flowing into the reactor buildings. Measures taken to suppress the flow of groundwater are as follows.

1. Groundwater pumping wells have been installed on the land side of the site as a "groundwater bypass" to reduce the inflow of groundwater by pumping it up and releasing it into the ocean. (Operation begun in April 2014, 73,806 m^3 of water having been released up to January 29, 2015.) According to TEPCO, combined with the water suppression measures at the high-temperature incinerator building, groundwater inflow has been reduced by 100 m^3 per day.
2. Pumping up groundwater from the subdrains in the vicinity of the buildings and releasing the water into the ocean. (TEPCO expects that this will reduce groundwater inflow into the buildings by up to 150 m^3 per day.) TEPCO plans to release the pumped-up water into the ocean after purification. (The release criteria are 1 Bq/L for Cs-134 and Cs-137, 5 Bq/L for total beta ray emitting nuclides, and 1,500 Bq/L for Tritium.)

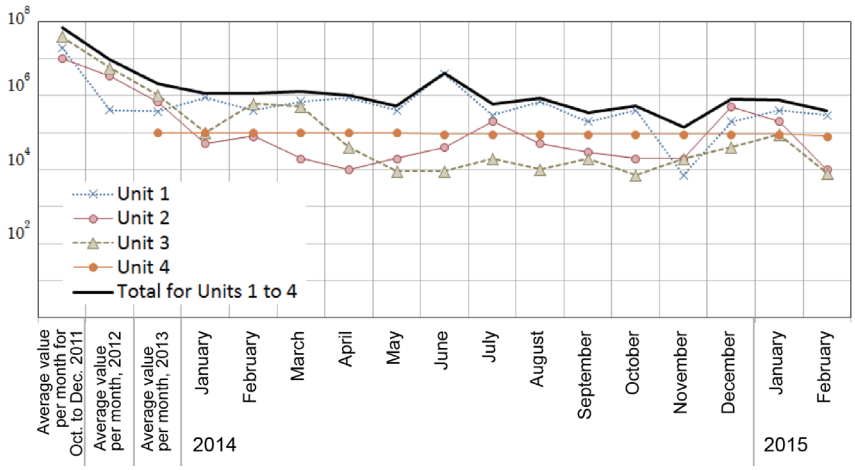


Figure 1. Releases of radioactivity from Units 1 to 4 of Fukushima Daiichi Nuclear Power Station (Bq/h)

3. Construction of an inland water barrier (creation of a frozen earth barrier by burying 1,549 refrigeration pipes and 321 temperature measuring tubes at set intervals around Units 1 to 4). Although targeted to begin operation during March 2015, the work progress rate is low, at 19.1% on the land side and 0% on the sea side, and thus achievement of the target is unlikely.
4. Removal of highly contaminated water flowing from buildings into trenches on the sea side. (Having failed to stop the water by freezing it at the junctions between the trenches and the buildings, the insertion of packing materials consisting of a mixture of concrete and other materials was begun on October 16, 2014. However, gaps occurred and it proved impossible to stop the flow of contaminated water.)
5. Operation of the Advanced Liquid Processing System (ALPS). (The three existing systems, an additional three systems and a high-performance ALPS system installed with government subsidies.) These are used to separate contaminants, including nuclides, from contaminated water, while tritium still remains in the treated water. (See Figure 2 for an overall view of state of work progress.)
6. Addition of a strontium removal function to the cesium removal equipment (KURION, SARRY), and introduction of mobile strontium removal devices (one system of the three systems being operational) and RO (reverse osmosis) concentrated water treatment equipment (January 10, 2015).

At the same time, construction of a sea side water barrier, prevention of leaks from holes punctured in the sides of buildings (scheduled to be completed in FY2017), and the increased installation of tanks is also being carried out.

TEPCO also announced on February 24 that contaminated water that had accumulated on the roof of the large hatch of the Unit 2 reactor building (Cs-137: 23,000 Bq/L, Cs-134: 6,400 Bq/L, and total beta ray emitting nuclides: 52,000 Bq/L) had been draining to a location outside the plant harbour via a drainage channel (drainage channel K) each time rain fell. TEPCO had known that the concentration of radioactive substances in the drainage channel had been rising from measurements first taken in the drainage channel in April 2014, but had neither taken any preventive measures nor reported the outflow.

3. Others

On February 12, a device making use of cosmic ray muons was installed beside Unit 1 in order to investigate the state of the molten fuel. Since muons have extremely high penetrability, it is hoped that it will be possible to use them to locate the molten fuel, which has a high mass number and density and is therefore relatively resistant to penetration. However, as far as can be determined from the results of a demonstration test carried out at the SFP at Tokai Daini Nuclear Power Plant, the resolution is low and it is thought that detailed inspection is not possible.

It has been discovered that TEPCO had diluted the anti-dispersal agent sprayed to prevent the dispersal of coarse particulate dust containing radioactive substances to one-tenth of that recommended by the maker and had also greatly reduced the number of applications of the agent. These reductions took place between August 2012 and sometime in the summer of 2013.

Industrial accidents are also rising sharply. In FY2013, the number of industrial accidents, excluding cases of heat stroke, was 23, but this had risen to 40 up to November 2014. One worker fatality occurred on January 19, 2015, and a further fatality also occurred at Fukushima Daini Nuclear Power Station on January 20.

(Hajime Matsukubo, CNIC)

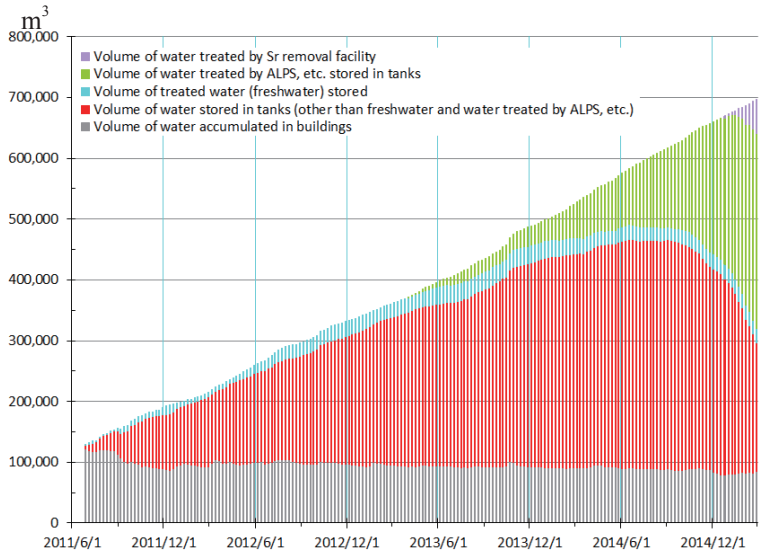
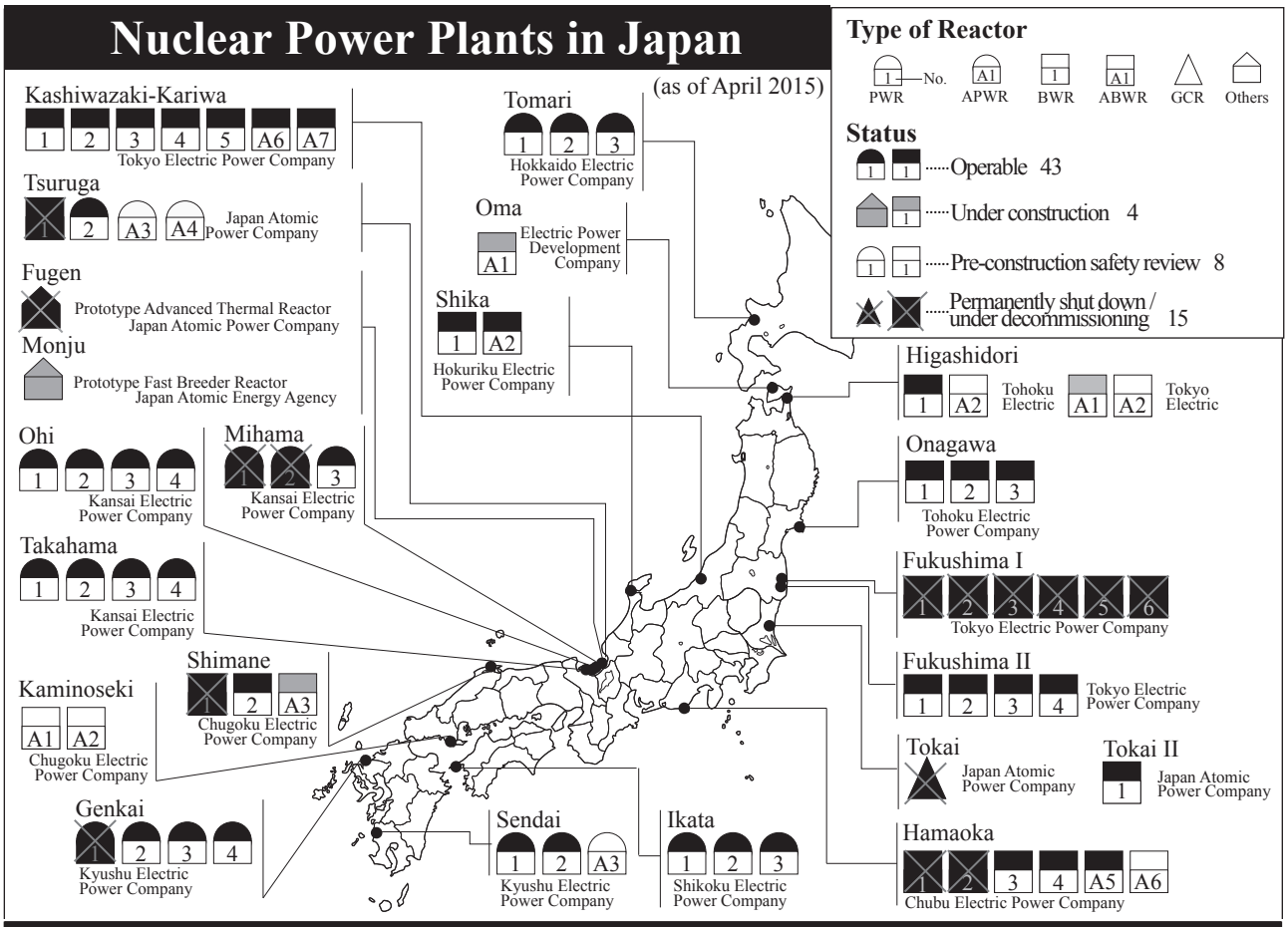
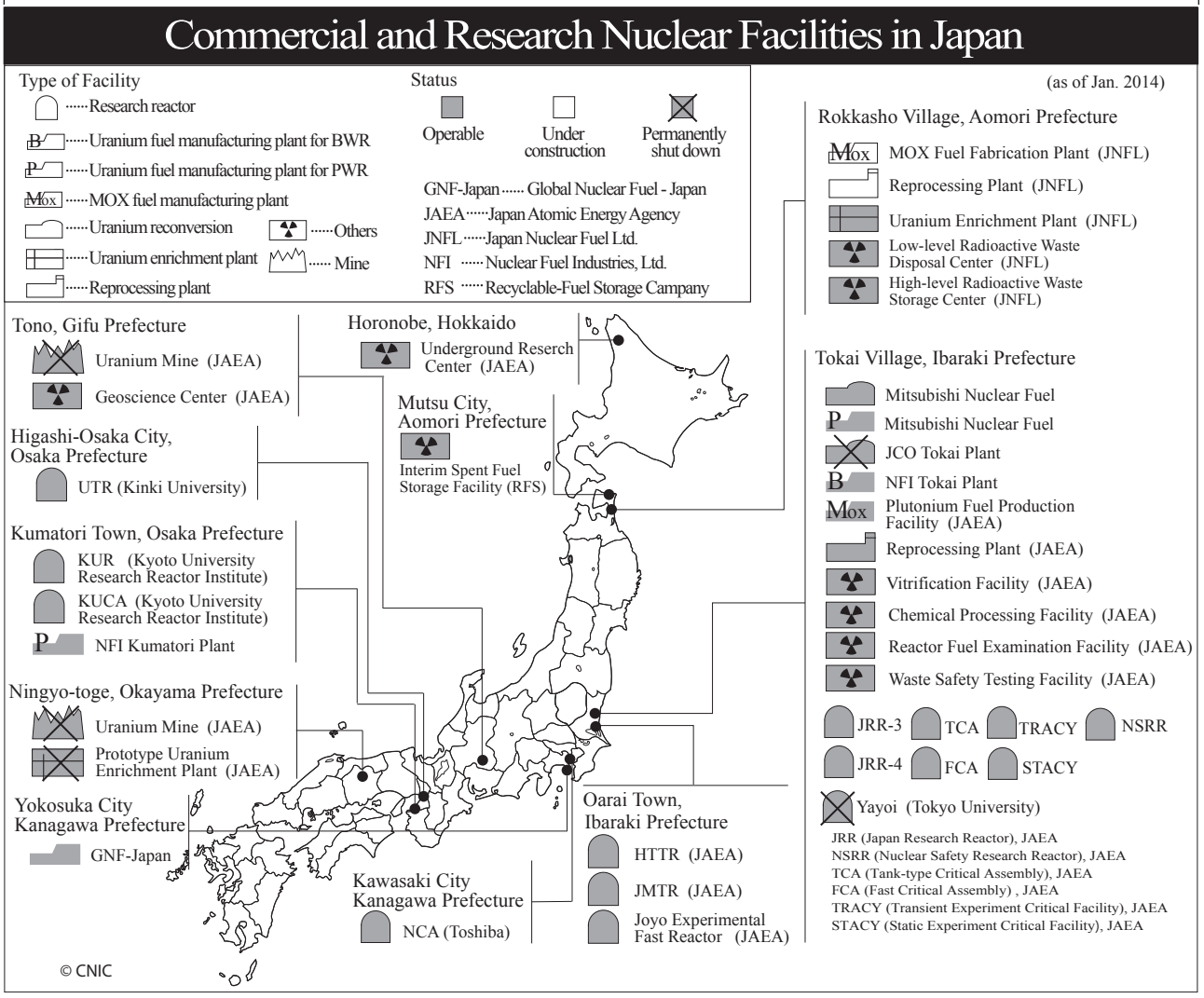


Figure 2. Total Water Volume (in Buildings and Tanks) of Contaminated and Treated Water (as of February 26, 2015)

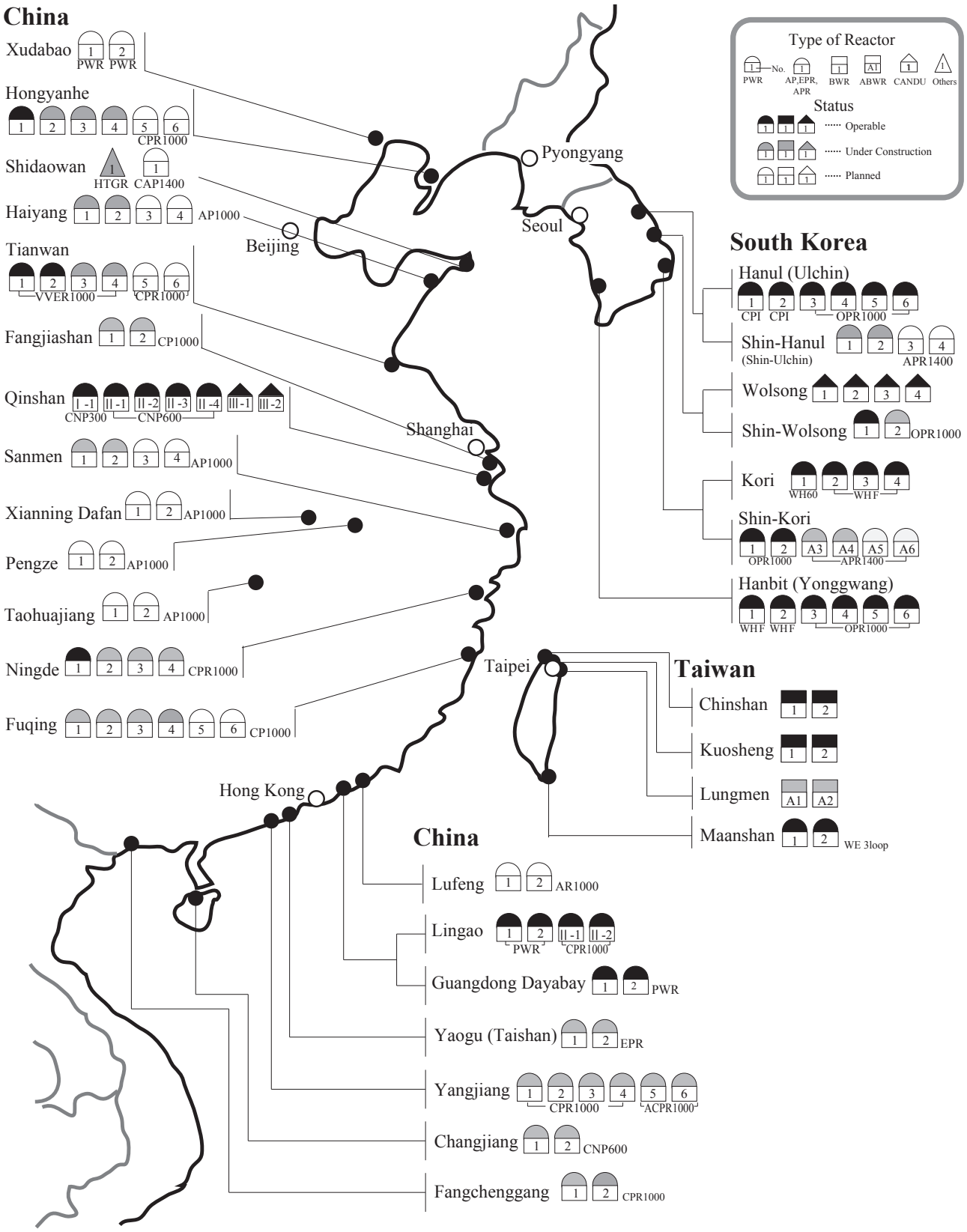




In March 2015, the electric power companies announced that Mihama 1.2, Tsuruga 1, Shimane 1 and Genkai 1 reactors were to be shut down and decommissioned.

Nuclear Power Plants in East Asia (as of Jan. 2014)

Based on Japan Atomic Industrial Forum, Inc. Report (ISSN 0915-0692)



NEWS WATCH

Green Light Given for Restarting Takahama Units 3 and 4

Japan's Nuclear Regulation Authority (NRA) announced on February 12 that Kansai Electric Power Co.'s Takahama NPP Units 3 and 4 (each PWR, 879 MW) had passed the new regulatory screening. The reactors met the new standards and authorizing modifications in the reactors' installation. Also needed for their restart will be approval of their construction plans and authorization of changes in their operational safety programs. Agreement is also being sought from the local municipalities, but they are thought to have effectively given the go ahead.

Fukui Prefecture, where the reactors are located, requested that the government meet five conditions for their restart. These five conditions are that citizen understanding be promoted; that there be active involvement in creation of interim storage facilities for spent nuclear fuel outside the prefecture; that a clear understanding be given for the realization of the ratio for nuclear power in the power supply composition, to be determined by the Advisory Committee for Natural Resources and Energy (more on this in the articles that follow); that the accident control system be enhanced and reinforced; and that consideration be given to the economy and employment in the area where the reactors are located.

Many members of the prefectural and Takahama Town assemblies favor restarting the reactors. While it is too early to say if they will approve the restarts or not, they are rejecting appeals for disapproval and accepting appeals for approval.

Taipower Initiates Public Bidding for Overseas Reprocessing Consignments

Taiwan Power Co. (Taipower) announced on February 17 that it had initiated public bidding for overseas consignment of the reprocessing of 1,200 spent fuel rods. The deadline is March 16 (postponed till April 8) and the budget is 11.25 billion Taiwanese dollars. According to Taipower, Japan, Russia, Britain and France are eligible to bid.

Taiwan currently has six nuclear reactors in operation among the Jinshan, Kuosheng and Maanshan NPPs. The spent fuel in question is from four reactors at the Jinshan and Maanshan NPPs, both of which have almost entirely filled up their spent fuel pools. Dry cask storage is impossible as well because of strong opposition from residents and municipalities. Taiwan has a fourth nuclear plant, the Lungmen NPP, for which Japanese companies have provided the main equipment, but it faces severe public opposition that may prevent it from operating. The Unit 1 reactor has been completed, but is sealed off for safekeeping, and construction has been halted on the Unit 2 reactor. For this reason, Taipower is preparing to extend the operating lives of the Jinshan and Kuosheng NPPs, whose 40-year authorized lifespans will expire between 2019 and 2023. One of the goals seems to be to ensure sufficient spent fuel pool space, so this is an extremely big problem.

The nuclear trade pact between Taiwan and the US that was extended in June 2014 prohibits enrichment or reprocessing without consent from the US, but the minutes of the pact allow for overseas reprocessing. On March 16, the economic committee of the Legislative Yuan demanded that Taipower suspend the bidding process, and this was accepted by Taipower.

New Agreement between Kyoto Pref. and KEPCO

Kyoto Pref., which has seven towns and cities within about 30 kilometers of the Takahama NPP, has been seeking an atomic energy safety agreement from the Kansai Electric Power Co. (KEPCO) similar to the one it has with Fukui Pref., where the plant is located, and an agreement was concluded on February 27. While the agreement clearly specifies the authority to express opinions on the restart of accident-stricken reactors, it does not incorporate right of consent. Also, since the above-mentioned restarts of Units 3 and 4 are not restarts of accident-stricken reactors, they would not count as targets for expressing opinions.

On the same day, Taizo Mikazuki, governor of Shiga Pref., where there are similarly two cities within about 30 kilometers of the Takahama NPP and also Lake Biwa, a source of water for the Kansai area, once again expressed his wishes for an agreement similar to that with Fukui Pref.

Prosecution of Former Management of TEPCO Dropped Again

The Complainants for Criminal Prosecution of the Fukushima Nuclear Disaster (CCFN) filed a criminal accusation in June 2012 inquiring into the responsibility for the nuclear accident at TEPCO's Fukushima Daiichi Nuclear Power Station, but the Tokyo Public Prosecutor's Office dropped the case in September 2013, and the complainants therefore petitioned the Committee for the Inquest of Prosecution. In July 2014, the Tokyo Fifth Committee for the Inquest of Prosecution concluded that three former TEPCO officials, former chairman Tsunehisa Katsumata, former vice-president Sakae Muto, and former vice-president Ichiro Takekuro, could be prosecuted. But they recognized that it was an injustice that former director Akio Komori was exempted from prosecution. The prosecutor therefore decided to handle the case through a re-investigation. As a result, the Tokyo Public Prosecutor's Office reopened the investigation, but on January 22, 2014, dropped charges against all of the defendants once again.

The Tokyo Public Prosecutor's Office explained that the reasons why the case was dropped were that, in 2008, TEPCO had run test calculations on the assumption of a tsunami of the same scale and height as that which occurred after the Great East Japan earthquake, but the actual depth of inundation in the vicinity of the reactor buildings was several times that which resulted from their calculations. Further, it was said to be hard to acknowledge conditions that would necessarily lead to recognition prior to the accident of the danger of major equipment being inundated at the plant as a result of the occurrence of a tsunami on this scale. The reason the Committee for the Inquest of Prosecution had taken predictability seriously was because there was sufficient evidence to show that it had indeed been predicted, and that the results had possibly been fudged.

With the case being dropped by the Tokyo Public Prosecutor's Office, it will be put before the Committee for the Inquest of Prosecution a second time. If it is judged again to be worthy of prosecution, a lawyer appointed by the public prosecutor will forcibly institute legal proceedings.

The CCFN filed a second criminal complaint with the Tokyo Public Prosecutor's Office on January 13 against nine people, including former members of the Nuclear and Industrial Safety Agency (NISA) and TEPCO workers. It is based on facts newly revealed at a hearing held by the government's Nuclear Accident Investigation Committee on the Fukushima disaster.

Talks Begin on Long-term Energy Demand Outlook

The Subcommittee for Long-term Energy Demand Outlook was established by the Basic Policy Subcommittee of the Advisory Committee for Natural Resources and Energy, an advisory body to the Minister of Economy, Trade and Industry (METI), and on January 30, it began drafting an energy demand outlook for 2030.

Its focus was on the proportion of nuclear energy in the electric power supply. The outlook for demand they were trying to draw up is what is called an "energy mix." This name indicates a combination of energy sources, including coal, petroleum, natural gas, nuclear, hydropower and other renewables in fixed ratios, and is a new term coined during the process of drafting the Basic Energy Plan, which was approved by the Japanese cabinet in April 2014. There are two mixes, one which considers not only electric power, but energy use overall, including heat utilization and fuel for transport, and the second, which is limited to electric power. It is the electric power energy mix that is of public concern, and is where the proportion of nuclear energy is concentrated.

Even before discussions got underway, the mass media were reporting that METI was tending toward a ratio of 20% or more. If the denominator is reduced through energy savings, even a small amount of nuclear power will boost the ratio. Nonetheless, with more than 40 years having passed since nuclear generation began operating, we hear one person after another calling for reactor decommissioning. No matter how it is promoted, a ratio of 20% or more seems unlikely.

Even so, at least three committee members have declared that 25% would be good. Thirteen members, a majority, appear to agree on 20% or more. If one ignores the realities, 20% or more is not unreasonable. From the point of view of committee members promoting nuclear energy, it doesn't matter if the ratio does not actually reach 20%. Fifteen percent would be acceptable. In any event, if such a figure is formally adopted, it can then be used to assert the need for the construction of new facilities. Nuclear proponents would find it easy, for example, to use the decommissioning of reactors as a pretext for seeking recognition of the need to build new facilities in place of those decommissioned.

FY 2015 Nuclear Power Budget Bill

Japan's nuclear power budget bill for fiscal 2015 has been drafted, and the amounts for each ministry and agency compiled by the Atomic Energy Commission plus the costs of regulatory enforcement and disaster countermeasures under the jurisdiction of the Cabinet Office and the Japan Nuclear Regulation Authority (NRA) came to about 387.5 billion yen, a 4% decrease from the previous fiscal year. Part of the requested budget, however, was moved up from the FY2014 supplementary budget. There are also projects that come under the supplementary budget each year, such as METI's reactor decommissioning and water contamination countermeasures. The budget for maintenance costs of the Ministry of the Environment's interim storage facilities, for example, is 75.8 billion yen in the FY2015 budget bill, but when combined with the carry-over from the FY2014 budget of 101.1 billion yen, it essentially amounts to about 120 billion yen. The Great East Japan Earthquake Reconstruction Budget Bill does not include appropriations for nuclear power, but it does for dealing with the aftermath of the Fukushima disaster. While it is very difficult to get a real picture of the nuclear power budget, the amount being invested is enormous.

Of the approximately 167.1 billion yen for MEXT, 85%, or 141.4 billion yen, will go to the Japan Atomic Energy Agency. About 19.7 billion yen has been allocated for the Monju prototype fast breeder reactor, about the same as for the previous fiscal year. That breaks down to 3.8 billion yen for operation and maintenance and 15.9 billion yen for equipment inspections. The total R&D budget for fast reactors is 29.5 billion yen. Another 4.6 billion yen has been allocated to METI as commissions for R&D on fast reactor technology.

Of 142.5 billion yen for METI, 88%, or 125.1 billion yen is as supportive subsidies for countermeasures in areas where electric power plants are located. The "assumed regulations," which apply to nuclear power plants that have been stopped as if they were still operating, have been in effect for three consecutive years.

As a new project, the Regional Development Grants for Specified Nuclear Power Facilities in Fukushima, being spent locally on interim storage facilities for decontamination waste from the Fukushima nuclear disaster, come to 9.3 billion yen. The budget for a project launched from FY2014 that supports local infrastructure maintenance in the vicinity of nuclear power facilities, under which the holding of product exhibitions and business meetings is entrusted to private organizations by the government, has been increased by 1.5 billion yen, nearly tripling the budget to 2.3 billion yen. The increase reflects new grants to be made under the condition that the reactors are restarted.

Of the 14.0 billion yen for the Cabinet Office, Emergency Safety Countermeasures Grants, which provide aid to local municipalities for nuclear accident countermeasures, have been increased slightly from the previous fiscal year to 12.2 billion. They have been increased by a further 9.0 billion yen in the FY2014 supplementary budget.

If the 2.8 billion yen in the FY2014 supplementary budget is added to the 57.3 billion yen for the Nuclear Regulation Authority, it comes to about the same as in the previous fiscal year. Of this, 31.6 billion yen is necessary outlays for instituting safeguards.

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