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Citizens' Nuclear Information Center

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Tossed about by an Earthquake, Tsunami and Nuclear Disaster Fukushima Daiichi Nuclear Power Station. Government Investigation Committee Releases Interim Report



Photo by TEPCO released March 21, 2011

to “to carry out a multifaceted investigation and verification from the point of view of the people” and “to present policy recommendations for preventing the spread of damages caused by the accident and the reoccurrence of similar accidents.” (Quotes taken from the Prime Minister and Cabinet website on June 7, 2011.)

Professor Yotaro Hatamura, renowned for his study of the mechanisms of “failure,” was chosen to chair

Background

The “Fukushima Daiichi Investigation Committee on the Accident at the Tokyo Electric Power Company Fukushima Nuclear Power Station” released an interim report on December 26, 2011, over nine months after the March 11 Great East Japan Earthquake. The main report spans 507 pages with a further 212 pages of attachments. There is also a 22 page English translation of the Executive Summary. The Committee aims to produce a final report around summer 2012. (Website addresses Japanese <http://icanps.go.jp/post-1.html>, English <http://icanps.go.jp/eng/interim-report.html>)

The Investigation Committee was established by the May 24, 2011 Cabinet Decision for the purpose of ascertaining “the causes of the accident and the causes of the damages inflicted by the accident.” The Committee was asked

the Committee, which has ten members in all. The Chairman appointed two technical advisors and the secretariat included bureaucrats from various ministries, along with eight other people with expertise in areas including society and technology, analysis of severe nuclear accidents,

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and evacuation. The following three teams were formed under the leadership of experts in the respective fields: Social System Investigation Team, Accident Causes Investigation Team, Damage Expansion Prevention Measures Investigation Team.

Special features of this Committee include its independence from the nuclear bureaucracy and the fact that it was tasked with carrying out a comprehensive investigation that focused not only on technical issues, but also on systemic issues.

The Commission based its investigation on the following eight principles:

1. The investigation will be conducted based on the approach of the Chairman, Prof. Hatamura;
2. The investigation should produce a result that is capable of standing up to critical evaluation even in 100 years' time in consideration of the responsibility we have to our descendants;
3. The investigation should properly answer all questions asked by Japanese citizens;
4. The investigation should properly answer all the questions held by people all over the world;
5. The investigation will not seek to hold any particular person or organization responsible;
6. The investigation should correctly grasp the precise phenomena of the accident that occurred;
7. The investigation should uncover the background to the phenomena that occurred;
8. The investigation should, as far as is feasible, conduct replicate experiments and preserve the objects in working condition.

(Extracted from "Remarks by the Chairperson Dr. Yotaro Hatamura at the First Meeting of the Investigation Committee on the Accident at the Fukushima Nuclear Power Station on June 7, 2011")

As of December 16, the Committee had interviewed 456 people, representing a total of 900 hours of hearings. Based on these hearings, the Committee investigated in considerable detail the course of events that took place in the responses of the Central Government, Fukushima Prefecture and Tokyo Electric Power Company (TEPCO) to the accident, the evacuation of residents and their exposure to radiation. This aspect of the report should be particularly noted.

Content of the Report

In a nutshell, it became clear that a group of people who believed that human beings could control and use this immensely powerful energy turned out to be almost powerless when it came to the crunch. The following specific examples illustrate the point.

- They were unable to grasp what had happened inside the reactor after it was shaken by the earthquake and the lower parts of the buildings were flooded by the tsunami. They did not realize that the Isolation Condenser (IC) in Unit 1 was not operating properly and were unable to quickly inject water into the core.
- Confusion increased as a result of a hydrogen explosion that occurred in the Unit 1 reactor building on March 12.
- Because they were acting on guesswork about the situation and made operational errors, their responses were always too late.
- Due to the jumble of information, they were unable to respond appropriately and neither TEPCO's nor the government's command systems operated in a coordinated fashion.
- The initial radiation monitoring required to prevent damage escalation failed.
- SPEEDI (System for Predicting Environmental Emergency Dose Information) was not used. As a consequence great sacrifice was inflicted on residents.
- The Offsite Center did not function. The report shows the resulting state of confusion.

The Fukushima Daiichi accident has not yet been brought under control. The crisis is ongoing, and so the report identified issues and made recommendations on an interim basis. The main points are listed below.

Issues identified

- Measures to protect against tsunamis and severe accidents were insufficient due to the lax judgment of TEPCO, the Nuclear and Industrial Safety Agency and academia.
- This laxity arose from the limitations of voluntary safety measures, the insufficient organizational capabilities of regulatory bodies, and negative effects of specialization and divisions of labor.
- It is a paradox that efforts to improve and search for higher safety are met with negative reactions by others, because such effort may be interpreted as disallowing past practices.

Recommendations

- The operations of the nuclear safety regulatory body should be transparent and it should be made independent of agencies that promote nuclear power.
- Competent human resources with high professional expertise should be secured.

Lessons related to the Unit 1 Isolation Condenser

The first hydrogen explosion occurred at Unit 1. Unit 1 had an item of equipment, called an Isolation Condenser (IC), that was not fitted to the other reactors. When the core pressure rises to dangerous levels the IC is supposed to

begin operating automatically, remove high pressure steam from inside the core, condense the steam with heat exchangers, and thus reduce the pressure in the reactor core. The Investigation Committee considered in detail how the operators and TEPCO's emergency response headquarters dealt with the IC. It concluded that no rupture interfered with the operation of the IC. Rather, it lost functionality as a result of the loss of electric power when the plant was flooded by the tsunami.

However, the Commission said in relation to this item of equipment, "There was no one at the nuclear power plant with many years experience in the operation, including training and inspection, of the IC. Apparently the operators had only exchanged oral accounts amongst themselves about limited operating experiences. Furthermore, although there was some training on the function and operation of the IC, judging from the series of responses on this occasion, we cannot believe this was effective."

In an emergency, cooling is the highest priority in order to prevent core damage. It can only be concluded that the state of understanding and training in regard to the function and operation of the IC was extremely inappropriate. As the operator of the nuclear power plant TEPCO stands condemned.

An essential condition for maintenance of the integrity of technology is that relevant knowhow be properly passed on to the next generation of operators. People dealing with a technology that is so intrinsically dangerous as nuclear energy must be especially aware of this. At the same time, this should be confirmed at multiple levels by the regulatory body. The lessons from the Unit 1 IC are, therefore, particularly significant.

Impact of the Earthquake

References in the Interim Report to the impact of the massive M9.0 earthquake on the nuclear reactor system are very inadequate. The maximum acceleration in the east-west direction for Units 2, 3 and 5 exceeded the Design Basis Earthquake Ground Motion (S_s^{*1}). The figures recorded in Gals (design basis shown in brackets for comparison) were respectively: 550 (438), 507 (441), 548 (452). I would like to wait for the results of future reports and inspections before commenting in detail on this matter, but based on the experience of the Kashiwazaki-Kariwa Nuclear Power Station after the July 16, 2007 Chuetsu-Oki Earthquake, very careful investigations are called for.

The report mentions a perfunctory analysis carried out by TEPCO for Unit 2. According to this analysis, the load on major equipment and structural components, including the reactor pressure vessel, the containment vessel, and main steam pipes, was within the assessment criteria.*2 However, if the parameters

are only slightly altered in this type of calculation totally different figures are derived. Unit 2 was an aging reactor that had been operating for 37 years. I wonder how that fact was considered in the calculation.

Standing up to an evaluation in 100 years time: an ethical issue for engineers and scientists

In its recommendations, the report refers to the need for competent human resources with high professional expertise. However that alone is not enough to prevent the formation of a "nuclear village." The English version of the Executive Summary uses the word "competent" to translate the Japanese word "yuushuu." However, "yuushuu" is more commonly translated as "excellent," or "superior." Over and above technical or scientific "competence," it is important that a sense of excellent ethical standards be understood. But how can we expect excellent nuclear safety regulation from Japan's "nuclear village," a clique that has demonstrated its lack of ethical standards?

The Interim Report makes the following comment.

"Management of human resources and personnel planning are necessary to enable ... staff to formulate [a] consistent career path. Specific steps to this end should include: improved conditions [for] securing competent staff with high professional expertise; enlarged opportunities for ... staff to experience long-term training and practical study; personnel exchanges with other administrative authorities or research institutions including those for nuclear and radiation activities." (Executive Summary, page 20)

But the problem is of a totally different order than this.

If the Investigation Committee wants to produce a report that will stand up to critical evaluation in 100 years' time, it needs to come up with insightful recommendations and principles addressing this problem. In my opinion, it is necessary to do much more than just educate experts in universities and the like. It is necessary to go back to the elementary and middle school years and reconsider the essence of what education is all about.

I am looking forward to reading the final report, which is due this summer.

(Yukio Yamaguchi, Co-Director)

*1. A ground motion postulated to occur extremely rarely, but which would have a serious impact on facilities if it did occur.

*2. Determined under Japanese seismic design code for nuclear power plants JEAC 4601-2008. The safety requirement for ultimate shear strain is twice that of seismically reinforced concrete walls.

Rallies against the Monju Reactor



During the three days from December 1 to 3, the Japanese organizations opposing nuclear power took various actions to demand decommissioning of the “Monju” reactor. The organizations included Fukui Prefecture Citizens Against Nuclear Power, Stop The Monju, Fukui Prefecture Citizens Against Atomic and Hydrogen Bombs, the All Japan Anti-nuclear Liaison Association and Citizens’ Nuclear Information Center (CNIC).

Monju is a prototype fast-breeder reactor designed to produce 280 MWe from 714 MWt. The construction of the reactor began in 1985. Comprehensive function testing was carried out in the 1991-1992 period. The reactor achieved criticality for the first time on April 5, 1994 and generated electricity for the first time on August 29, 1995. On December 8, 1995, about three months later, a sodium coolant leak occurred during trial operation at 40% power, causing a fire. After the accident, the reactor was shut down until May 2010.

The reasons for the reactor being shut down for such a long period of time are twofold. The first is that the release of the manipulated video taken at the accident scene caused public distrust of the government’s nuclear energy policy, making it impossible to win consent of the local people for resumption of the reactor’s operation. The other reason is that the high court judged that permission by the authorities for restarting operation of the reactor was illegal because of serious oversights made in the safety analysis procedures. The Supreme Court, however, reversed the decision in 2005.

Since the accident in 1995, the five organizations mentioned above have organized a gathering of people from all parts of the nation every December to hold a rally at the accident site. Currently the operation of Monju is suspended due to a series of problems that occurred after the trial operation in May 2010.

In the wake of the Fukushima nuclear accident, the areas in which residents are required to evacuate or take other measures

in the event of a nuclear accident were expanded from a 10 kilometer radius of the nuclear power plant to a 30 kilometer radius. As a result, Kyoto and Shiga Prefectures were added to the list of administrative regions required to formulate anti-nuclear-disaster measures. At the same time, it was decided that many municipalities in Fukui Prefecture should take necessary anti-disaster measures. (See map below) In response to this move, we decided to ask more municipalities to join our efforts to urge the government to decommission the Monju reactor.

On December 1, members of our organizations met the prefectural governors and the mayors of cities, towns and villages in Kyoto and Shiga Prefectures to ask them to urge the government to decommission the Monju reactor. On December 2, meetings were also held with the governor of Fukui Prefecture, the mayor of Tsuruga city and the chiefs of neighboring municipalities for the same purpose. It seems that each municipality is taking possible anti-nuclear-disaster measures, such as the stockpiling of potassium iodide pills. All the municipalities sought conclusion of a safety agreement similar to those the municipalities in which nuclear power plants are located have signed with the electric power companies. The agreement would not only enable those municipalities to receive information related to nearby nuclear power plants, but would also give them the right to refuse construction or expansion of plant facilities and the right to make on-site inspections in case of a nuclear accident. The agreement, however, places very strict conditions on the power companies and is a hard pill for them to swallow. The reluctance of the power companies to accept expanded application of the agreement is allegedly slowing the progress of the negotiations with the municipalities.

Another noteworthy event that occurred in Fukui Prefecture after the Fukushima nuclear accident is that on June 9, 2011 the Obama City assembly unanimously passed a resolution calling for Japan to phase out nuclear power. In Obama, all the residents are living within a 20 km radius of the Ohi nuclear power plant. The resolution calls on the government to set a deadline for full withdrawal from nuclear power and not to operate any nuclear power plant for more than 30 years. It also demands construction of roads necessary for local people to use for evacuation. Unfortunately, however, Obama is the only city in Japan that has passed such a resolution thus far.

We held a rally on the morning of December 3 in Shirakihama, Tsuruga City, where Monju is located, and submitted a petition to the head of the Monju plant calling for decommissioning of the reactor. We held another meeting and marched in Tsuruga City

in protest against Monju later in the day. The number of participants at the meeting and the protest march topped 1,000, which was higher than that of previous years.

At the meeting, former Fukushima Prefectural governor Eisaku Sato delivered a speech. Based on his own experience during his tenure as governor, Sato criticized the government for forcing municipalities to accept its policies, and emphasized the need to change the government's current nuclear energy policy. Sato established a study group in the prefectural government office in 2001, during his governorship, and embarked on a review of the government's nuclear energy policy. In September 2002, he proposed a review of the government's policy related to nuclear fuel, including the MOX pluthermal project (the use of plutonium in thermal reactors). Sato also promoted measures against nuclear power, such as revitalization of the primary industries in his prefecture and active promotion of renewable energy, under the slogan of "Utsukushima Fukushima (Beautiful Fukushima)." In his speech, Sato blamed the nuclear disaster in Fukushima on government failure to correctly implement nuclear energy policy and called for Japan's withdrawal from nuclear power.

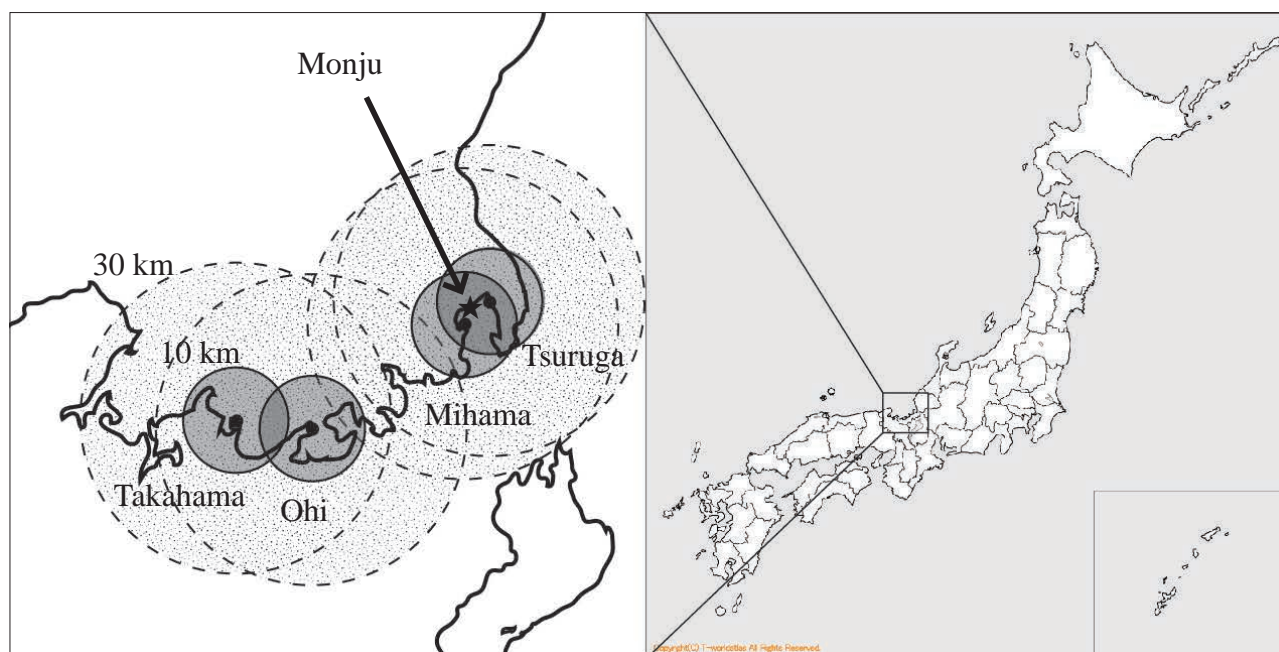
When the catastrophic nuclear accident broke out in Fukushima, Monju was offline due to an accident that occurred on August 26, 2010 in which the in-vessel transfer machine fell into the reactor vessel. Atsuyuki Suzuki, president of the Japan Atomic Energy Agency (JAEA), expressed his intention to withdraw from the policy to put the fast-breeder reactor to practical use, saying it would be impossible to win a national consensus on the policy. In order to build a new demonstration reactor, it would be necessary to find land

to site the reactor and to gain the consent of local residents. Financial support from electric power companies is also necessary to secure the construction costs. The Fukushima nuclear accident, however, has made it difficult to fulfill any of these conditions. That is most likely the reason why Suzuki expressed his intention to renounce the policy to promote the fast-breeder reactor.

There has also emerged a possibility that the Monju project will be suspended. The Fukushima nuclear accident has made it more difficult for JAEA to secure research and development budget for the reactor. This has resulted in a delay in the restart of the reactor's operation until the end of fiscal year 2012 and reduction of the overall budget. JAEA said it had cut the budget for Monju to the minimum level at which maintenance and operation costs just covered the continuing safety of the reactor. Nevertheless, the agency has requested 17.5 billion yen as budget for the reactor this year. This amount is four billion yen less than that for last year. The agency said it would make up for the slashed budget by reducing costs for purchasing equipment and postponing the replacement of worn-out equipment. Given the situation after the Fukushima nuclear accident, these austerity measures are unavoidable for the agency, but as long as this situation persists, it is certain that the old and creaky equipment of the reactor will cause frequent problems if operation of the reactor is resumed.

The New Nuclear Policy-planning Council for reviewing nuclear energy policy has started discussions on the nuclear fuel cycle. It is still uncertain whether or not the council will reach the conclusion that Monju should be decommissioned, but there are mounting calls for decommissioning of the reactor. The fate of Monju will likely become clear later this year.

(Hideyuki Ban, Co-director)



Fukushima Nuclear Power Plant

Workers engaged in operations in highly irradiated areas Details of implemented work and measures to reduce worker exposure to radiation remain undisclosed

The Japanese government and Tokyo Electric Power Co. (TEPCO) declared on Dec. 16 that the project to bring the Fukushima Daiichi Nuclear Power Plant to a state of cold shutdown had been achieved, and that Step 2 of the road map for bringing the plant under control had been completed. It cannot be considered, however, that the future stages of the road map will be carried out smoothly and that the catastrophic accident at the plant will move towards a complete resolution.

In the plant's No.1, No.2. and No.3 reactors, the nuclear fuel in the cores has melted down but the actual situation within the reactors is still unknown. The molten nuclear fuel is leaking from the bottom of the pressure vessel and is likely to cause vapor explosions should the reactor core undergo recriticality or the fuel comes into contact with underground water. The work to remove highly radioactive water from the reactor buildings is facing great difficulties, and contamination of underground water and seawater is spreading. Plant workers are engaged in clean-up operations in this extremely difficult situation.

On Jan. 9, 2012, TEPCO announced that a male worker from a company cooperating with TEPCO lost consciousness while working and fell into a state of cardiac and respiratory arrest. According to the plant operator, the worker in his 60's had been engaged since the morning in work to construct a tank for holding radioactive materials accumulated in the treatment of highly contaminated water. Shortly after 2:00 p.m., the

worker complained of sickness and was taken to a hospital in Iwaki, Fukushima Prefecture. He died of myocardial infarction at around 5:00 p.m. The total amount of the internal and external exposure to radiation received by the worker since May 2011 was 6.09 millisievert. Since the outbreak of the nuclear crisis in March last year, three workers have already died while engaged in the clean-up operations at the plant, this being the fourth case.

As we have reported so far, CNIC has persistently negotiated, jointly with other NGOs, with the government ministries and agencies concerned on worker exposure to radiation in the clean-up operations at the plant. On Dec. 16, the Ministry of Health, Labor and Welfare drastically lowered the maximum permissible level of cumulative radiation exposure for workers who began working at the plant on or after Nov. 1, 2011, from 250 millisievert to 100 millisievert. (<http://www.mhlw.go.jp/stf/houdou/2r9852000001yeem.html>) Nevertheless, the ministry did not change the 250 millisievert limit for workers currently working on problems with reactor equipment and components in highly contaminated areas, and workers who are currently participating in emergency operations. The ministry also decided to apply the 250-millisievert limit to about 50 TEPCO employees with high technical expertise indispensable for maintaining the cooling system of nuclear reactors until April 30, 2012.

Fig 1: Leaking desalination units (Photo by TEPCO)



Even though Step 2 of the road map for bringing Fukushima Daiichi Nuclear Power Station under control has been completed, the 100-millisievert limit will be applied to workers as long as emergency operations are continuing at the plant. This indicates that reduction of the radiation exposure limit will continue to be a major problem and this is a task we must tackle. To achieve this, we must obtain from TEPCO and plant makers necessary data on the radiation doses to be absorbed by workers engaged in each type of operation, estimates of the number of workers needed for such operations, and the

propriety of the estimates.

On Aug. 31, the health ministry assigned the following three tasks to TEPCO as part of its efforts to lower the 250-millisievert limit, 1) Devise new measures to protect workers from internal exposure, 2) Draw up a list of operations that require work in highly radioactive environments necessary for achieving the goals in Step 2 of the road map and devise measures to reduce worker radiation exposure, and 3) Draw up a list of locations of high radiation in the reactor buildings and other related facilities and formulate measures to reduce radiation levels in such places.

In response, TEPCO submitted three reports to the ministry during the September-October period. The reports included a list of emergency work carried out in highly irradiated areas at the Fukushima nuclear plant and measures to reduce worker exposure to radiation. We filed a request with the ministry for disclosure of the reports and obtained copies of the documents. However, large parts of the reports were not disclosed (see Fig. 2) and their contents are still unknown.

People all over the world are watching developments at the Fukushima nuclear power plant, hoping that the disastrous

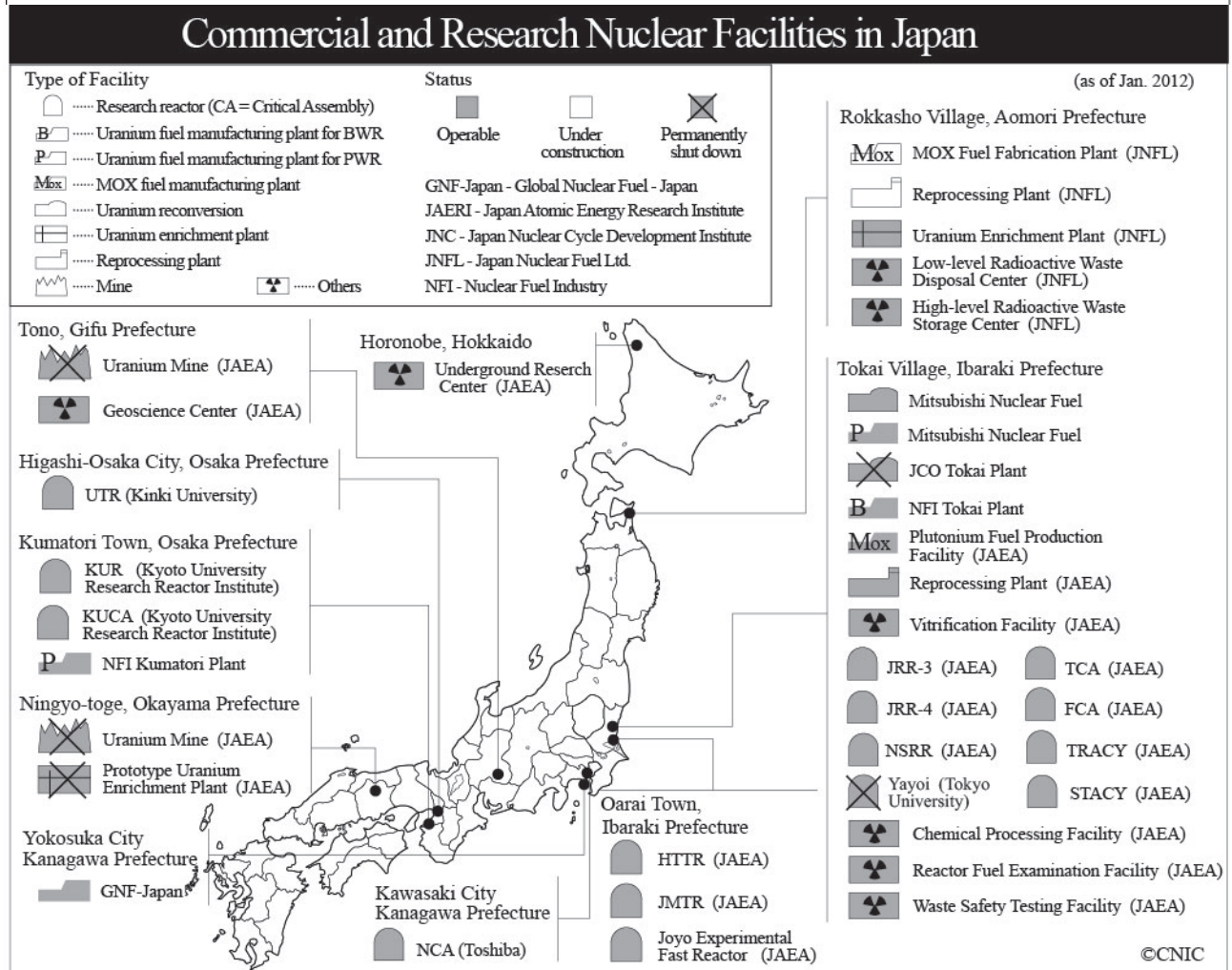
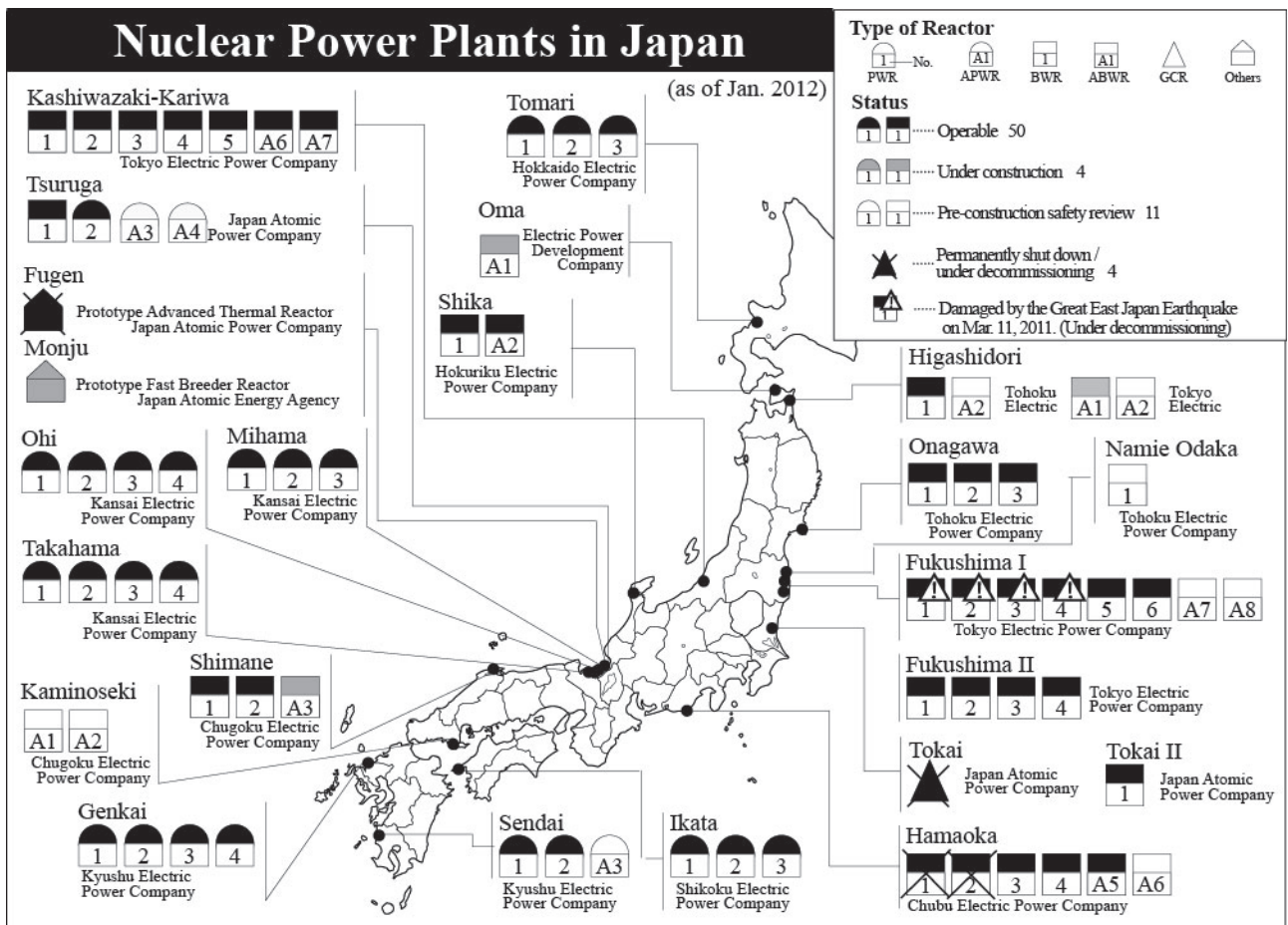
accident will be fundamentally and completely resolved. They are praying for the safety of the workers and monitoring the situation at the plant. In view of this situation, it is not permissible for the government and the plant operator to conceal details of the operations being carried out by the workers and measures for reducing worker radiation exposure.

In future negotiations with the government and TEPCO, we must demand that the decisions on 1) the permissible level of radiation exposure of the workers engaged in emergency operations in Step 2 and later stages, 2) the locations and other details of the work they do, and 3) measures to reduce worker radiation exposure should not be left in the hands of the plant operator alone, and the negotiating partners must fully disclose these data. To urge the utility and plant makers to thoroughly implement measures to reduce the level of worker exposure and to force down worker exposure limits to lower levels, we must press them to secure a sufficient number of workers for the work that needs to be carried out.

(Mikiko Watanabe, CNIC)

Fig 2: The blacked-out reports on the listing of operations that require work in highly radioactive environments disclosed by Ministry of Health, Labour and Welfare.

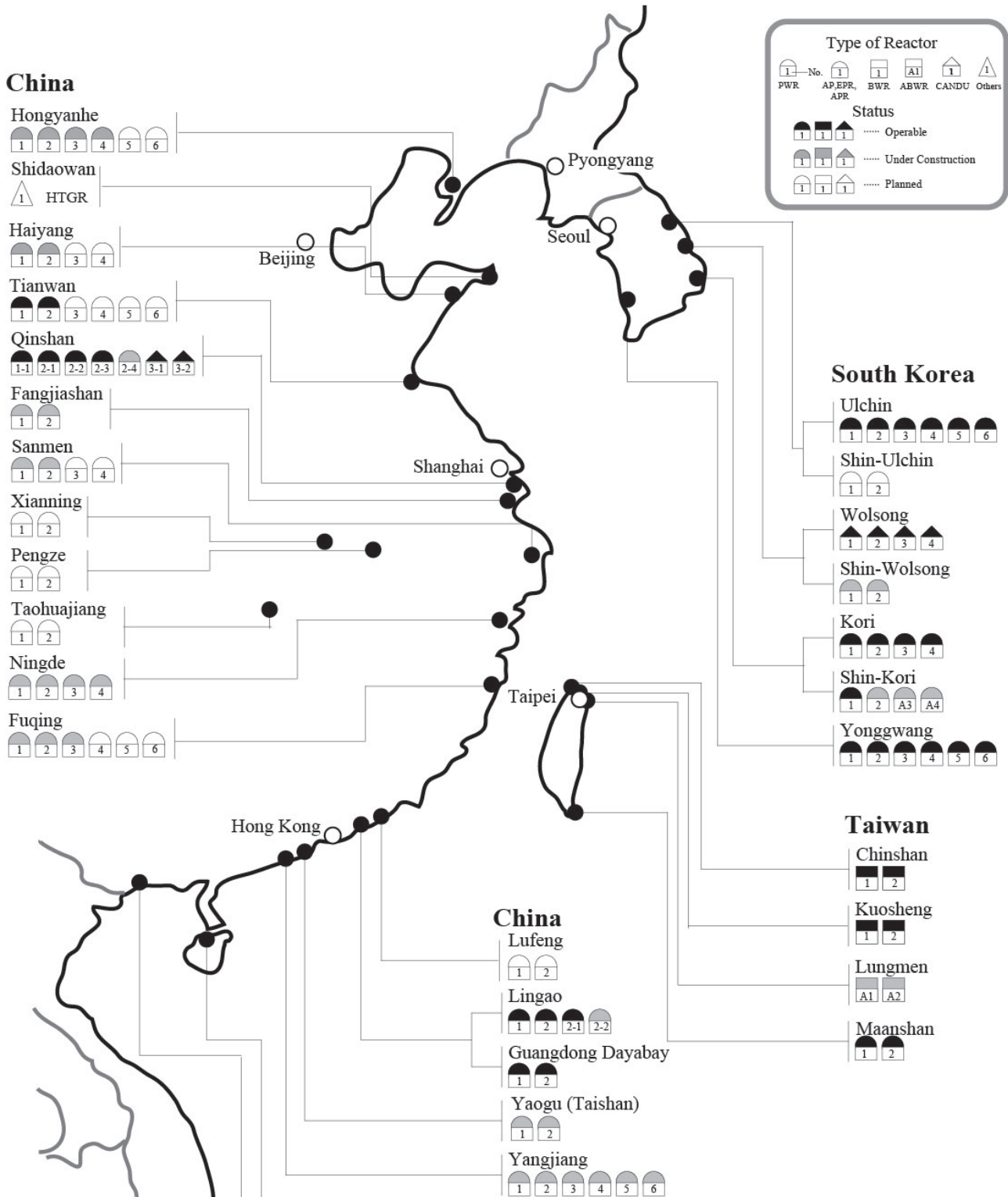
The image shows two forms, labeled '様式第2号' (Form No. 2), which are reports on emergency radiation work. The left form is dated '平成23年9月22日' (September 22, 2011) and the right form is dated '平成23年8月22日' (August 22, 2011). Both forms are from '東京電力株式会社' (Tokyo Electric Power Co., Ltd.) at the '福島第一原子力発電所' (Fukushima Daiichi Nuclear Power Plant). The forms include sections for '作業の種類' (Type of Work), '作業の期間' (Duration of Work), '作業の概要' (Summary of Work), and '放射線環境' (Radiation Environment). The right form includes a table for '作業の期間' (Duration of Work) with columns for '元方作業員' (Company Workers), '関係員' (Related Personnel), and '合計' (Total). The table shows 10 workers and 0 related personnel, for a total of 10 workers. The forms also list various radiation exposure metrics such as '外照射線による線量当量率' (Equivalent dose rate from external radiation) and '放射線環境' (Radiation environment).



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

Nuclear Power Plants in East Asia (as at Jan. 2011)

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



Group Introduction

An NPO Seeking New Pathways in Science (APAST)

by Masako Sawai



Photo of establishment ceremony of APAST

On March 11 the great 9.0 magnitude earthquake occurred and accordingly the catastrophic accident at Tokyo Electric's Fukushima Daiichi Nuclear Power Station. Where is the molten nuclear fuel from the pressure vessels in reactors 1, 2, and 3 now? Still nobody knows. Combine that with the fact that the “proclamation of the resolution of the accident” by the Japanese government and Tokyo Electric Power Company (TEPCO) is convincing nobody. At present the accident is still ongoing.

This accident has led scientists and engineers to establish an organization that actively communicates for society, searching for new pathways in science – NPO APAST (Union for Alternative Pathways in Science & Technology), whose Director is Masashi Goto and Secretary General is Atsuo Watanabe, both former nuclear containment vessel designers at Toshiba. The Assistant Director is Mitsuhiro Tanaka, a former nuclear pressure vessel design engineer at Hitachi. Other members include a music critic, scholars, a video director, heads of municipalities, and a wide range and variety of working members are coming together.

The myths that nuclear power is “safe” and that everything can be solved by science and technology have collapsed. APAST members believe we have entered an era in which what ought to be done in science and technology needs a fundamental review. APAST evaluates potential, direct and indirect “negative impacts” on ecosystems and human societies caused by technology from an objective, scientific perspective and proposes practical measures for a form of human society that would avoid these problems. In addition, APAST aims to foster people who are able to frame practical action plans.

However, for now the greatest concern of APAST's main members is to elucidate the cause of the Fukushima Daiichi Nuclear Power Station accident. Mitsuhiro Tanaka and Katsuhiko Ishibashi (Professor Emeritus of earthquake science at Kobe University), both members of APAST, were appointed to the Diet's Accident Investigation Committee working on a review of the earthquake and nuclear accident from a different viewpoint to the government and TEPCO. Look forward to seeing their reports.

NEWS WATCH

Decommissioning requests in successive suits

New nuclear law suits are being filed in succession since the Fukushima nuclear accident,

On May 27 and July 1 of 2011, the decommissioning of reactors 3 – 5 (1 and 2 are already decommissioned) of Chubu Electric's Hamaoka Nuclear Power Plant was requested in suits filed by different groups. A lawsuit concerning the same nuclear plant was filed on July 3, 2003, dismissed on October 26, 2007 and is now being appealed. This lawsuit demands the nuclear plant's suspension until the expected Great Tokai Earthquake as passed.

Additional suits in 2011 concerned Hokkaido Electric's Tomari reactors 1 – 3 on November 11, and on December 8, decommissioning of Shikoku Electric's Ikata reactors 1- 3 was requested in a filed lawsuit.

Again, as in a preceding case, the residents of Shiga Prefecture demanded a provisional court order to block the restart of seven nuclear reactors under periodic inspections in neighboring Fukui Prefecture. Motions were filed for seven reactors on August 2: Kansai Electric's Mihama Nuclear Power Plant reactors 1 and 3; Takahama Nuclear Power Plant reactors 1 and 4; and Ohi Nuclear Power Plant reactors 1, 3 and 4, and on November 8, a citizens group made a written statement demanding a temporary injunction against resumed operation of Japan Atomic Power Company's Tsuruga Nuclear Power Plant reactors 1 and 2. If rejected the group is poised to file a lawsuit. In addition, lawsuits are being prepared in six or seven other locations.

The reason for the series of lawsuits is that following the Fukushima nuclear accident the possibility of winning in court is great due to the recognition of failure of the Nuclear Safety Commission safety screening guidelines, and many lawyers are now beginning to show an interest in these kinds of nuclear lawsuits.

The lawsuits mentioned are in addition to the lawsuits already filed against J-Power's Ohma Nuclear Power Plant, Chugoku Electric's Shimane Nuclear Power Plant's reactors 1 and 2,

and the Rokkasho Reprocessing Plant.

Four nuclear draft cooperation agreements approved

On December 9, in an Upper House plenary session, cooperation agreements with Vietnam, Jordan, Russia, and Korea were approved. For Vietnam and Jordan whole nuclear plants, for Korea pressure containment vessels and related equipment exports, and regionally, contracts are expected with Russia for re-enrichment of recovered uranium.

Interim contract between Hitachi and the Lithuanian government

On December 23, Hitachi announced that it had accepted an order from Lithuania for the Visaginas Nuclear Power Plant and had signed an interim contract with the government. They are aiming for a basic agreement in mid-February, and an official contract by summer. The Visaginas plant is scheduled to start operation in 2020, but the details are as yet unclear.

Evidence of unaccounted for nuclear materials held in large amounts

On December 14, Kyodo News reported that 262 facilities in Japan had become the target of IAEA's safeguard measures, and that the results of a Japanese government investigation had measured unreported highly enriched uranium and plutonium found in large amounts in waste materials. In October of 2010, unaccounted for nuclear materials were discovered by chance at JAEA's Oarai Research and Development Center in disposed waste dated from before a safeguard agreement between Japan and the IAEA went into effect, and an investigation was carried out. The investigation found a total of 2.8 kilograms of highly enriched uranium and a total of 636 grams of plutonium at JAEA's Nuclear Science Research Institute, and unaccounted for nuclear materials were discovered in waste materials

predating the agreement at fourteen facilities. Discoveries of nuclear materials in waste materials from after the agreement were also found at a number of facilities.

FNCA Ministerial Level Meeting

On December 16, the Japanese government presided over the 12th Ministerial Level Meeting of the Forum for Nuclear Cooperation in Asia (FNCA). On the previous day (Dec. 15th) a Senior Officials Meeting, and on the following day (Dec. 17th) decontamination efforts and tsunami damage were inspected at Minami Soma City, Fukushima Prefecture.

The participating countries other than Japan included Australia, Bangladesh, China, Indonesia, Kazakhstan, Korea, Malaysia, Mongolia, Philippines, Thailand and Vietnam. A special session of the forum was established to address the Fukushima nuclear accident,

and in addition focus on, 1) basic maintenance (personnel training and reports), and 2) two round table discussions on "Cooperation for Further Promotion of Radiation and Isotope Applications".

Below are other points included in the meeting's resolutions.

- To gain greater recognition of the serious damage inflicted on neighboring countries in a nuclear accident, countries participating in the FNCA aim to employ the highest safety standards for nuclear facilities, and strengthen cooperation in the field of nuclear power safety in the Asia region for the peaceful use of nuclear power.
- Share information and knowledge on the lessons of Tokyo Electric's Fukushima Daiichi Nuclear Power Station accident, countermeasures for earthquakes, tsunamis, and natural disasters such as volcanic eruptions.

Global Conference for a Nuclear Power Free World: 11,500 participants

January 16, 2012

Organizing Committee Announcement

The Global Conference for a Nuclear Power Free World was held at Pacifico Yokohama on 14 and 15 January 2012. 6000 people on the first day and 5500 on the second, including 100 international participants from over 30 countries, gathered at the conference, with a total of 11,500 participants. The conference was broadcast live over the internet, with an audience of approximately 100,000.

At the closing of the conference, the "**Yokohama Declaration for a Nuclear Power Free World**" was announced. (http://www.npfree.jp/english/others/20120116_post_conf_ann.html)

The Yokohama Declaration emphasises

1. Protection of the rights of those affected by the Fukushima nuclear power plant accident
2. Responsibility of the Japanese Government and the Tokyo Electric Power Company (TEPCO)
3. Minimisation of residents' exposure to radiation;
4. A global road map for the phase out of the nuclear fuel cycle and the decommissioning of all nuclear power plants
5. Currently closed Japanese nuclear power plants to not be restarted
6. Prohibition of export of nuclear power plants and components, especially to industrialising nations
7. Emphasis of the role of local and municipal authorities

and declares the development of a global network to support Fukushima. It also calls for actions to be taken throughout the world on 11 March 2012.

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