

# NUKE INFO TOKYO

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## Citizens' Nuclear Information Center



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## Citizens Challenge APEC Energy Ministers in Fukui



Ken'ichi Oshima of Ritsumeikan University, there was a panel discussion chaired by Meiji University Emeritus Professor Iwane Fujii. Panelists included Professor Oshima, Professor Koichi Hasegawa of Tohoku University, environmental journalist Manami Suzuki and myself.

Professor Oshima presented findings from his own research into the cost of nuclear power and CO<sub>2</sub> emissions,

**O**n June 19, the APEC (Asia-Pacific Economic Cooperation) Energy Ministers' Meeting, held in Fukui City, Japan, issued a declaration concerning "Low Carbon Paths to Energy Security". For the first time, the declaration included support for new nuclear power plant construction. It is reported that Japan pushed strongly for this.

The schedule for June 20 included a tour of the Monju Prototype Fast Breeder Reactor in Tsuruga City in Fukui Prefecture, but only representatives from the Malaysian and Vietnamese delegations turned up. No ministers attended. Monju, which had just restarted the previous month for the first time in 14 years, was shut down for inspections from the first day of the APEC meeting. Perhaps the government wanted to avoid problems arising while APEC delegates were present. (See article on page 2 for information about the problems that have arisen so far.)

In opposition to the APEC Energy Ministers' Meeting, civil society held a "Citizens' Energy Symposium" in Fukui City on the afternoon of June 19. Speakers explained why nuclear power is not useful in the prevention of climate change and how exporting Japanese nuclear reactors is equivalent to exporting pollution.

Following the keynote speech by Professor

along with the results of overseas research into these issues. The Japanese government and electric power companies claim that nuclear power is cheap, but this conclusion derives from calculations based on arbitrary assumptions. Professor Oshima's analysis, based on costs published in utilities' financial reports, showed that nuclear power in Japan is by no means cheap. This is so despite the favorable treatment meted out to nuclear power by government policies. Moreover, back end costs, including reprocessing, are greater than the premium paid for electricity from renewable sources. Also, if the "time lag" is taken into account, CO<sub>2</sub> emissions are higher than for renewable energy alternatives.

The "time lag" *Continued on page 11*

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## Monju Restart Sets Alarm Bells Ringing

**A**s mentioned in NIT 136, on May 6 the Monju Prototype Fast Breeder Reactor (FBR, 280MWe), developed by the Japan Atomic Energy Agency (JAEA), was restarted for the first time in over 14 years. It had been shut down since an elementary design error caused a sodium leak and a fire in December 1995. Each day that the plant was shut down, 55 million yen of taxpayers' money were spent in maintenance costs.

There were several reasons why Monju remained shut down for so long. These included a court decision invalidating the license (NIT 93) and the need to replace degraded fuel (NIT 126). In addition, since 2008 there have been repeated false alarms from sodium leak detectors (NIT 126). These false alarms revealed problems with the quality and installation of the detectors. In response, inspections were carried out on about 3,000 items of equipment.

An alarm indicating a radioactive leak sounded the day the plant restarted. By around midday the following day the alarm had sounded 7 times.

The upper part of the reactor is filled with argon gas. Detectors take samples of this gas in order to detect slight leaks of radioactivity from the nuclear fuel. It takes time to sample gas and detect radioactivity, so three detectors operate consecutively to enable continuous measurement. An alarm went off when one of these detectors malfunctioned. JAEA continued operating the plant with just two detectors, but on May 9 one of the remaining two detectors malfunctioned. Eventually JAEA abandoned this method of leak detection, saying there were no problems because it had another method of detecting radioactive leaks from the fuel assemblies. The Nuclear and Industrial Safety Agency (NISA) accepted this, even though the alternative method is much less accurate. Clearly JAEA and NISA have chosen to prioritize continued operation over safety.

JAEA said "electrical noise" was the cause of the problem, but this is just a guess. The fact is that the cause has not been determined. JAEA said it would replace the relevant computer with another with faster processing capacity, but on June 11 an alarm sounded indicating that transmission was too slow.

Since then all sorts of alarms have sounded. On June 8 *Denki Shimbun* reported that up to 1pm

on June 6 there had been 620 alarms. The greatest number of alarms was from gauges that use pressure difference. They are said to be so sensitive that they respond to low atmospheric pressure. It is doubtful whether accurate judgments can be made using an alarm system that goes off whenever the weather changes.

It must also be remembered that 18 years have passed since the equipment was installed. The reason for some of these alarms is that equipment has deteriorated. The suppliers maintain the equipment and apparently replace it when they find defects. However, many of the detectors are general purpose items, so their performance should be well understood. It should not be necessary to wait for them to break down before replacing them. Quality control is too important to be left entirely to sub-contractors. This situation demonstrates that there are serious problems with JAEA's quality control system and ability.

### **Motley crew of operators walking a tight rope**

JAEA's Monju staff numbers have fallen by about one third in the past 14 years. It is making do by borrowing staff from other sections and from electric power companies. The fact that workers on temporary transfer have not been sufficiently trained was demonstrated by an instance of incorrect operation of a control rod. The problem occurred when the reactor was being shut down on May 10. It did not lead to a major accident, because the reactor is currently being tested at zero power output. However, it turns out that the worker had not been instructed in the fine details of the procedure for inserting control rods. The procedure that went awry on this occasion was not even covered in the manual.

If you go for a tour of Monju, you will be shown a simulator, which precisely simulates the operation of the central control room. Operators are trained using this simulator. The simulator is programmed with accident scenarios, so operators are trained in handling accident situations. JAEA is very proud of this simulator. Hearing JAEA's public relations talk, anyone would imagine that a mistake involving the operation of control rods could not possibly occur. No one would dream that important procedures were not even in the manual, or that there were serious inadequacies in training

given in preparation for the restart of Monju.

During the core confirmation tests now being carried out, power output is virtually zero. However, next year power output will be increased and testing of electricity generation will begin. When power output is raised beyond 40%, Monju will be entering totally new territory. The accident in 1995 occurred at 40% power output and that is as high as it went.

It sends a shiver down my spine when I think of how equipment has deteriorated, quality control has been left up to contractors, and operators have been rounded up from all over the place.

### **Reporting of incidents late as ever**

When the accident occurred 14 years ago, notification to the local governments was late, even though this notification is required under the safety agreement with the local governments. Furthermore, video footage of the site was concealed. This became an even bigger issue when the person in charge of the investigation into the cover up died. It is claimed that he committed suicide, but relatives are still fighting the case in the courts.

The problems with notification should have been sorted out, but in 2008 the notification to the local authorities about sodium leak alarms was three hours late. Since then notification has been consistently late. JAEA apologized profusely, but notification was late again this time when an alarm indicated a radioactive leak. On May 8 JAEA received a reprimand from NISA regarding its notification system. Clearly there is no change in JAEA's basic nature. JAEA loves to talk about "assuring transparency", but the fact that notification of incidents is invariably late shows that this is just lip service and JAEA is incapable of living up to its promises in this regard.

### **Does Monju have a future?**

It is planned that Monju will only be used to generate electricity for ten years. It was designed as a prototype for a commercial reactor. However, it is now proposed that a demonstration FBR of a different design will be developed. Hence, the experience gained with Monju will not be applicable to any commercial reactor. The plan is that a demonstration FBR be built by 2025, but technological development has not advanced and no site has been chosen.

The Japanese Government selected sodium as the best coolant for fast breeder reactors, but it is

a very problematic substance, burning in air and exploding if it comes into contact with water. Other technologically advanced countries which tried to develop fast breeder reactors were unsuccessful and have already withdrawn. When one considers the problems discussed above, it is hard to believe that Japan will be able to overcome the technological barriers that prevented other countries from commercializing fast breeder reactors.

Hideyuki Ban (CNIC Co-Director)

*Continued from page 4* and that it does not accurately reflect the debate within the subcommittee. He also pointed out that Niigata Prefecture's technical committee has at no stage held deliberations of its own about TEPCO's account, that it is unlikely to read the record of the subcommittee's discussions before it debates the matter, and that each member of the subcommittee should, therefore, submit his own opinions to the technical committee as material for the technical committee's deliberations.

The Chair of the subcommittee, Masaharu Kitamura, expressed his opposition to Kuroda's suggestion, saying that it was very regrettable, but Masahiro Koiwa and Motoe Suzuki expressed their support. The other three members did not express an opinion, so only two completely conflicting views were presented. Kuroda demonstrated that he was serious by stating that he would have to consider whether he was able to continue as a member of a committee that operates in this manner. Thus, there is total confusion about when Niigata Prefecture's technical committee will convene to consider Unit 5.

TEPCO's responses to the five questions submitted by groups representing residents of Niigata Prefecture were very vague. There were some comments from committee members, but all in all the debate was totally inadequate. The discussion will continue and TEPCO has been requested to respond in writing.

### **Conclusion**

Although important safety questions remain answered, the approval process for the resumption of commercial operations at KK-1 has been steamrolled. Meanwhile, the situation regarding KK-5 is still totally unclear.

By Yukio Yamaguchi (CNIC Co-Director)

# Kashiwazaki-Kariwa Units 1 and 5

## Rushing to restart while important safety questions remain unanswered

**I**t is three years since the Chuetsu-oki Earthquake struck the Kashiwazaki-Kariwa Nuclear Power Plant (KK). (See CNIC statement on page 5.) Since then two reactors (Units 6 & 7) have resumed commercial operations and Unit 1, which began start up tests on May 21 and reached full power on June 15, is set to become the third.

On July 7, Niigata Prefecture's subcommittee looking into equipment integrity and earthquake resistance and safety held its 41st meeting. The subcommittee, which was established under Niigata Prefecture's technical committee, discussed a report submitted by Tokyo Electric Power Company (TEPCO) about the state of implementation of functional tests at KK-1. TEPCO submitted the report to the Nuclear and Industrial Safety Agency (NISA) on the same day.

The subcommittee also considered five open questions relating to four penetrating cracks in the reinforced concrete wall of the turbine building of KK-5. The questions were submitted by eight groups from Niigata Prefecture. It was the first time that the subcommittee had officially considered questions submitted by citizens.

### **KK-1**

TEPCO claims that all 83 irregularities identified in KK-1 are minor and that they were not caused by the earthquake.

Two problems arose on May 22, the day after start up tests began. There were problems with humidification control by the dehumidification cooler in the off-gas treatment system, and there was also a fault in the reactor feedwater pump bypass valve. Then on May 28, an oil leak from the MG set oil filter in the recirculation system of the reactor cooling system was discovered. TEPCO fixed these problems by May 30 and increased power in steps to 20%, 50% and 75%, finally achieving full power on June 15.

However, on June 28, problems arose in the steam shutoff valve in the reactor isolation cooling system and in the turbine trip function. Reduced function of the steam shutoff valve was caused by a tiny amount of crud, which wore away the surface of the valve seat, causing an imperfect seal. The problem with the turbine trip function was due to a loss of control from the control room. TEPCO assessed that neither of these problems was caused

by the earthquake. It completed measures in response to these incidents on July 4.

From around June 3, there was a rise in discharge pressure from a pump in the residual heat removal system. This was also caused by a leak from a valve seat. Measures in response to this problem were completed on July 5. Again, TEPCO assessed that the problem was not caused by the earthquake.

Even if TEPCO claims that the above problems were not caused by the earthquake, the key issue is whether or not valves and other equipment will work properly if there is another earthquake. The subcommittee discussed this question in detail. Committee member Motoe Suzuki submitted questions in advance, so TEPCO came prepared with documentation to back up its response. However it based its explanation on data published in March 1983. That data came from a research project carried out jointly by electric power companies. It shows the results of tests including vibration tests, function tests and pressure tests, but committee members pointed out that the conditions were too far removed from reality and questioned whether this very dated experiment is still valid after the Chuetsu-oki Earthquake. It was decided that TEPCO should provide more answers.

As can be seen from the above account, deliberations concerning KK-1 have not yet finished. At its July 21 meeting, Niigata Prefecture's technical committee requested TEPCO to provide more information. However, it chose to give its blessing for commercial operations without waiting for TEPCO's responses. Now only the approvals of the Nuclear Safety Commission, the governor of Niigata and the mayors of Kashiwazaki City and Kariwa Village remain.

### **KK-5**

There has been intense debate about Unit 5 in the subcommittee.

The steering committee submitted a draft report on the debate within the subcommittee, but committee member Kotaro Kuroda stated that it was unacceptable. He presented a submission of his own in which he expressed his opposition to the draft.

Kuroda stated that the steering committee's report effectively regurgitates TEPCO's account, which concludes that there are no problems,

*Continued on page 3*

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*Press Release***Three Years After the Chuetsu-oki Earthquake hit Niigata Prefecture  
We Lament the Rush to Restart the Kashiwazaki-Kariwa Nuclear Power Station**

The Magnitude 6.8\* Chuetsu-oki Earthquake hit Kashiwazaki City and Kariwa Village in Niigata Prefecture at 10:13 am on July 16, 2007. Fifteen people were killed and 2,300 people sustained serious injuries, while thousands of buildings were destroyed, or damaged.

The seven reactors of the Kashiwazaki-Kariwa Nuclear Power Station, the world's largest nuclear power station, were struck by a jolt far greater than they were designed to withstand. It was sheer good fortune that more radioactivity did not escape.\*\*

Niigata Prefecture established two expert subcommittees to consider technical issues relating to the impact of the earthquake on the nuclear power station, one to assess the integrity and seismic safety of the plant and the other to assess the earthquake itself and the ground condition of the site. There are still many unknowns, but gradually more light is being shed on the damage to equipment caused by the earthquake. One important issue raised by the second subcommittee is the danger that another earthquake, even more powerful than the Chuetsu-oki Earthquake, could strike the plant in future.

Under these circumstances, the local people and the people of Niigata Prefecture as a whole cannot feel secure. They must be prepared for the possibility of another disaster.

Nevertheless, before reaching scientific conclusions, hasty engineering judgments were made to restart some of the reactors. Disregarding the concerns of the local people, commercial operations were resumed at Units 6 and 7. Approval was given when debate about the integrity and safety of the plants was still continuing.

Unit 1, the oldest reactor and the one that was most shaken and incurred most damage (based on visual inspections), began start-up tests on May 21. It is now operating at full power and awaiting approval to resume commercial operations. Niigata Prefecture's technical committee (parent committee of the two subcommittees mentioned above) approved start-up tests on May 11, without any substantial discussion and without holding a public hearing. It is likely that at its July 21 meeting it will endorse the resumption of commercial operations. This situation only adds to the residents' concerns.

The subcommittee looking into equipment integrity and seismic safety is now considering Unit 5. At its most recent meeting, held on July 7, the subcommittee was split in its response to a draft report prepared by the secretariat. Questions submitted by eight local groups about penetrating cracks in the wall of the turbine building were also on the agenda. At this stage, the future of Unit 5 is unclear. Debate about Units 2, 3 and 4 has not yet begun. (These three units and Unit 7 were the only reactors operating at the time of the earthquake.) The discussions must not be cut short in the rush to restart.

We sincerely hope that the governor of Niigata Prefecture, the mayors of Kashiwazaki City and Kariwa Village, and Niigata Prefecture's technical committee and its two subcommittees will take the utmost care in their consideration and assessment of the future of the Kashiwazaki-Kariwa Nuclear Power Plant. Top priority should be given to the safety and security of the residents and to ensuring that they can live free of fear and anxiety. To this end, we believe that concerned residents should be given the opportunity to formally participate in the deliberations of the technical committee and its two subcommittees. Issues should be thoroughly debated until they are resolved in a scientific and convincing manner.

The eyes of the world are watching the Kashiwazaki-Kariwa Nuclear Power Plant.

Hideyuki Ban, Baku Nishio and Yukio Yamaguchi  
Co-Directors of the Citizens' Nuclear Information Center (CNIC)  
July 16, 2010

\* Japanese seismic scale

\*\*For articles about the impact of the earthquake on the Kashiwazaki-Kariwa Nuclear Power Station and the road to restart, see the links on the following web site:

<http://cnic.jp/english/topics/safety/earthquake/index.html>

# Rokkasho Reprocessing Plant

## Fallen brick retrieved at last!

### October date for full operations definitely won't be met

**T**he vitrification furnace at Japan Nuclear Fuel Ltd's (JNFL) Rokkasho Reprocessing Plant is being restored. However, this only means that the prospects of resuming active tests have improved. The chances of actually passing those tests are by no means good.

Active testing of the vitrification furnace began in November 2007. However, numerous problems have arisen, including the accumulation of platinum group elements at the bottom of the furnace, which prevented the molten glass from flowing through. While JNFL was trying to fix this problem, a brick fell from the ceiling of the furnace. In addition, in January 2009 about 150 liters of high-level radioactive liquid waste leaked within the vitrification cell. Fixing this problem took one year and four months. (See NIT 129 for a more detailed account of these problems.)

Attempts to recover the fallen brick commenced in April this year, after completion of responses to the leak and the contamination that it caused. The operators were unable to see inside the furnace, so they had to hunt around for the brick with a mechanical arm. The first time they managed to grab the brick it fell back again (see NIT 136). JNFL made adjustments to the crane, introduced a new device with a stronger grip and finally succeeded in retrieving the brick on the 18th attempt on June 17. It then began draining the remaining 1,500 liters (10 glass canisters' worth) of molten glass. Draining was completed on July 2 and JNFL is now attempting to remove the remaining sediment at the bottom of the vitrification furnace. When that is finished it will finally be able to resume pre-commissioning tests.

Although the brick has been recovered, the fundamental problems with the vitrification furnace have not been solved. It is, therefore, uncertain whether it can pass the tests.

In the first place, it has not yet established the reason why the brick fell from the ceiling. In the absence of an explanation, JNFL is unable to develop a response. It has simply concluded that the brick "fell naturally", but if that is the case, it cannot refute the possibility that bricks will fall

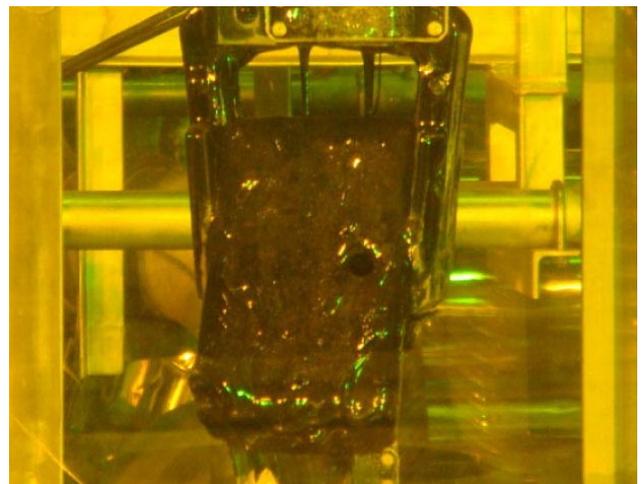
again in future.

Concerning the biggest problem, the accumulation of platinum group elements at the bottom of the vitrification furnace, JNFL says, "This can be overcome with strict temperature control." However, it is simply relying on operators perfecting their technical skills. This does not guarantee success.

Regarding production of glass canisters, the required performance is 70 liters flow through of molten glass per hour and the production of 1,000 glass canisters per year at a stable rate of operation. The current performance is a far cry from that.

JNFL has not changed its official schedule for commencing full operations in October. However, no one believes this schedule is achievable. President Yoshihiko Kawai himself admits that it is a "tough situation". There is no doubt that a new schedule will be announced soon. We must conclude that the future of the Rokkasho Reprocessing Plant remains as uncertain as ever.

Masako Sawai (CNIC)



*Photo of brick retrieved from vitrification furnace*

# Kyushu Electric's Falsification of Warm Water Discharge Reports

## Environmental impact to increase if Sendai-3 reactor constructed

By Takeo Hashizume and Yoshitaka Mukohara\*

### Environmental impact from 1°C sea temperature rise

Reports of changes in the marine environment have become frequent in recent years. Fisherman everywhere say that they can't catch fish anymore, or that the species of fish they catch has changed. Experts believe these changes have been caused by a rise in sea temperature. It is said that the temperature of Japan's coastal waters has risen by 1°C in the past 10 years.

In comparison with the temperature of the air, variations in the temperature of the sea are small. The sea temperature range over four seasons at Kagoshima (southern Kyushu) is between 15°C and 29°C. Within such a small range a rise of 1°C is very significant. At Kagoshima it is enough to allow tropical fish to survive the winter. As such, it is already upsetting the ecological balance of the marine environment.

We reported in the July 2009 edition of CNIC's Japanese newsletter that monthly water temperature measurements conducted since February 2007 by the Kagoshima Anti-Nuclear Network showed that warm water discharged to sea from Units 1 and 2 of Kyushu Electric's Sendai Nuclear Power Station is being re-circulated through the reactors. In other words, the same water that is taken from the sea to cool the reactors and discharged back to sea as warm water is taken in again and circulated back through the plant. Through observations carried out over a 3-year period, we established that as a consequence of re-circulating warm water in this way the water at the intake location was 2°C higher than the surrounding sea temperature. Due to the higher temperature at the intake point, the temperature of the water at the outlet was raised by 8°C, exceeding the requirement in the safety agreement that the temperature of discharged warm water be raised by no more than 7°C.

The consequences for the marine environment of this careless design

error depend on how far the elevated temperatures extend. Kyushu Electric Power Company insists, "The area within which the sea temperature is elevated more than 1°C is mostly around 2 kilometers offshore."

### Data falsification

On March 2, 2010 the Asahi Shimbun reported that Kyushu Electric had falsified data related to warm water discharge monitoring results. Kyushu Electric formally submits these monitoring results to Kagoshima Prefecture under the safety agreement between the power company and the prefectural government. The agreement contains an information disclosure clause, so these results are publicly available. We immediately checked the data.

Kyushu Electric carries out marine monitoring 4 times a year, once per season. Sea temperature is shown on isothermal maps. The isotherm for the region of 1°C temperature elevation is invariably drawn within the 2-kilometer offshore zone. However, if one looks carefully, one sees that the region extends beyond the isothermal line drawn on the maps. Kyushu Electric has been deliberately making the area of elevated sea temperature look smaller than it really is.

There have been 30 surveys since 2002. In that time, we confirmed 17 instances of deliberate

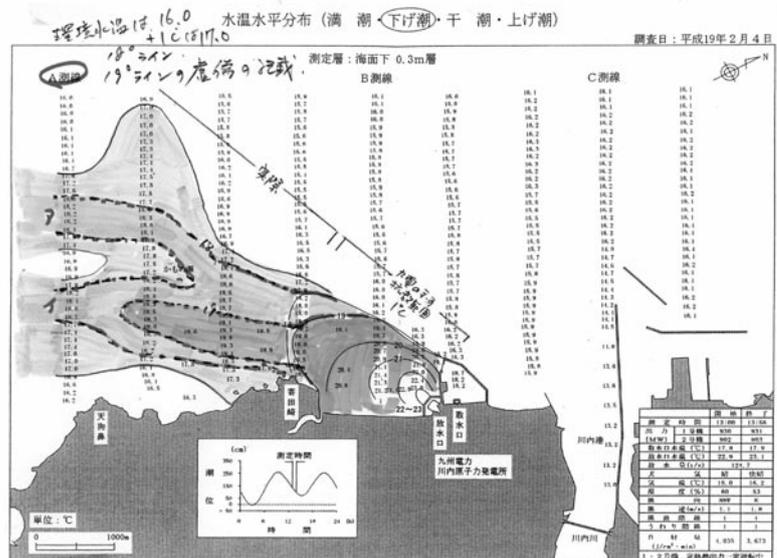


Figure 1

deception. On some occasions one of the two units was down for inspection. Of the 20 occasions on which both units were operating, there were 10 cases of data falsification.

Clearly there is consistent and deliberate manipulation of the data. If one looks carefully, one finds cases where the isotherm indicating an elevation of 1°C is drawn around regions where the temperature is clearly elevated by 2°C. For example, in figure 2 a 1°C elevation should correspond to 17°C, but the line is drawn at 18°C.

**Not 2 km but 5 km**

By measuring the maximum region of elevated temperature shown in Kyushu Electric's records for each survey day since 2002, we derived an average figure of 2.4 kilometers. It is debatable whether that fits Kyushu Electric's claim of "around 2 kilometers". However, if rather than using Kyushu Electric's arbitrarily drawn isotherms, one draws isotherms in accordance with actual temperature, one finds that of the 20 cases where both units were operating, on 12 occasions the region of elevated temperature extended beyond the range of Kyushu Electric's monitoring (5 kilometers south). We don't know exactly how far the influence of warm water discharge extended, but using an estimate of 6 kilometers, we derived an average of 4.9 kilometers between April 2002 and August 2009. That is twice as far as Kyushu Electric claims.

**Baseline data for Sendai-3 assessment is "around 2 km"**

Kyushu Electric is on the verge of constructing a third unit at its Sendai Nuclear Power Station. We take the view that having submitted falsified data, Kyushu Electric should be disqualified from building a new nuclear power plant. However, for

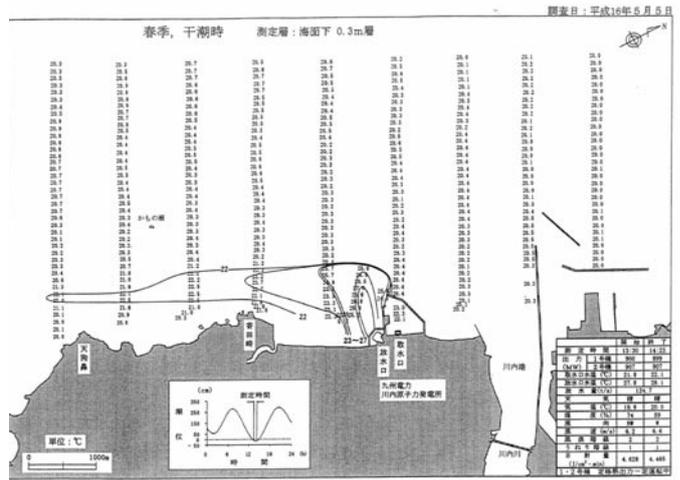


Figure 3

the record we have identified the following three key issues.

1. Kyushu Electric's plan for the Sendai-3 plant is based on a region of "around 2 km" of elevated sea temperature from warm water discharge from the two existing Sendai plants. Given that the explanation is based on falsified data, the environmental impact assessment process is invalid.
2. In fact, the region consistently exceeds 2 kilometers and in 60% of cases it exceeds 5 kilometers.
3. The cause of the very high temperature increase is the recirculation of warm water discharge. This recirculation is not taken into account in the environmental assessment for Sendai-3.

Kyushu Electric says blithely that there is no problem, because "The Prefecture's committee has approved [the reports]". At this stage, Kagoshima Prefecture shows no sign of making an issue of it either. However, if Unit 3 is operated under these circumstances, there is no doubt that seawater temperatures will be raised over a wider region than anticipated. The marine environment around Kagoshima will be destroyed.

\* Takeo Hashizume and Yoshitaka Mukohara are members of the Kagoshima Anti-Nuclear Network.

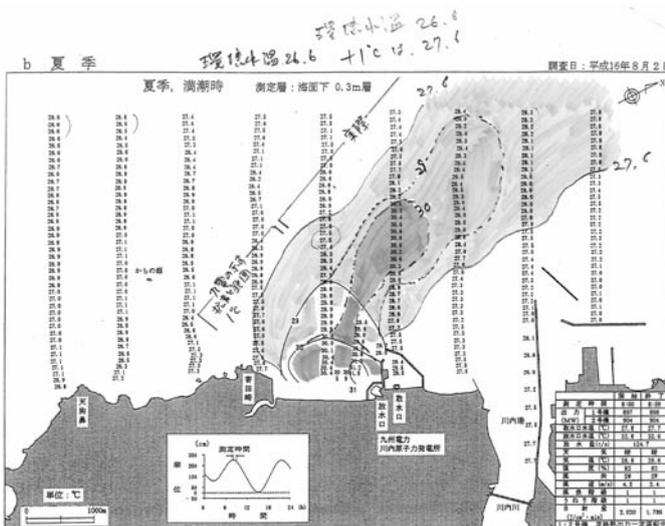


Figure 2

# CNIC Statement re Commencement of Negotiations for Japan-India Nuclear Cooperation Agreement

Prime Minister Naoto Kan

Minister for Foreign Affairs Katsuya Okada

Minister for Economy, Trade and Industry Masayuki Naoshima

Chairman of the Japan Atomic Energy Commission Shunsuke Kondo

## Japanese Nuclear Cooperation with India Represents Support for Nuclear Proliferation

On June 28 the Kan Administration began negotiations towards conclusion of a nuclear cooperation agreement between Japan and India.

When it first embarked on a nuclear energy program, Japan articulated its fundamental policy in the Atomic Energy Basic Law as follows:

"The research, development and utilization of nuclear power shall be limited to peaceful purposes, shall aim at ensuring safety, shall be performed independently under democratic administration, and the results obtained shall be made public and shall actively contribute to international cooperation."

The Kan Administration is on the verge of abandoning this policy.

When Japan decided to develop nuclear power, despite having endured the indescribably painful experience of Hiroshima and Nagasaki, an absolute condition was that it would be "limited to peaceful purposes". To make light of, or to forget this historical fact is unacceptable, regardless of any changes that may have occurred in the international order and economic circumstances.

India developed nuclear weapons in defiance of international opinion. It refuses to join the Nuclear Non-Proliferation Treaty and has turned its back on international efforts towards nuclear abolition. It possesses nuclear reactors for weapons purposes, as well as for civilian purposes. Its weapons and civilian programs are not clearly separated. Indeed, it is impossible to completely separate military and civilian workers, education, technology and equipment within a single country.

If Japan concludes a nuclear cooperation agreement with India on the grounds that other countries - including the United States, Russia and France - have done so, or because it is in Japan's commercial interest to do so, it will become impossible to prevent nuclear proliferation. We will be doomed to repeat the tragedy of Hiroshima and Nagasaki.

In 1953, in the midst of tense relations between the United States and the USSR, United States President Eisenhower proclaimed the "peaceful uses of atomic energy". However, this was a big hypothesis. In the years that followed, proliferation did not abate. The facts suggest that nuclear energy cannot be restricted to "peaceful uses".

For 35 years the Citizens' Nuclear Information Center has warned that the illusion of the "peaceful uses" of nuclear energy could actually damage prospects for a peaceful and sustainable human future.

At the very least, Japan should revert to the basic position it has taken until now and refrain from engaging in nuclear cooperation with India.

We call on all people connected with this matter to heed this warning.

Citizens' Nuclear Information Center

Co-Directors Yukio Yamaguchi, Baku Nishio, Hideyuki Ban

June 29, 2010

### Major Incidents at Nuclear Facilities April 2009 - March 2010

Date	Facility Name	Incident Description
6 April 09*	Fukushima I-3	During restoration work after inspection of a hydraulic control unit for the control rod drive hydraulic system, 1 control rod inserted too far (beyond the fully inserted position).
6 April 09*	TRF	Leak of radioactive material from a pipe which discharges liquid waste to sea.
12 April 09	Shika-2	Radioactive leak from a fuel assembly.
22 April 09*	Hamaoka-4	During a periodic inspection, a worker's leg was caught in the driver of a valve near the steam turbine in the turbine building.
23 April 09	Hamaoka-5	Fault noticed while checking control rod operation.
5 May 09*	Hamaoka-4	Reactor shut down manually during adjustment operation due to elevated hydrogen concentration in the off-gas treatment system.
13 May 09*	Tsuruga-1	Flaw found in the seat portion of a vent valve in the control rod drive hydraulic system.
25 May 09	Tsuruga-1	Thinning to below required thickness found in pipes in the feedwater and condenser systems.
28 May 09*	Onagawa-3	During restoration work after inspection of a hydraulic control unit for the control rod drive hydraulic system, one control rod inserted too far (beyond the fully inserted position).
11 June 09	Onagawa-1	Reactor shut down manually due to oil leak from the generator.
17 July 09*	Tokai II	Reactor shut down manually due to fluctuation in the oil level in the main oil tank in the turbine oil system.
22 July 09	Onagawa-3	Reactor shut down manually due to a fault in the water level adjustment valve in the low pressure feedwater heater.
23 July 09	KK-7	Radioactive leak from a fuel assembly during adjustment operations.
29 July 09	Hamaoka-4	Alarm indicating elevated hydrogen concentration in the off-gas treatment system.
2 Aug. 09	Tomari-3	Reactor shut down during commissioning operations due to malfunction of two emergency diesel generators.
7 Aug. 09	Hamaoka-5	Faulty operation of the turbine bypass valve.
11 Aug. 09	Hamaoka-4&5	Reactors shut down automatically in response to an earthquake in Suruga Bay. Iodine continued to leak from Unit 5 until August 19.
19 Aug. 09*	Tomari-3	During commissioning operations, the turbocharger in emergency diesel generator B malfunctioned.
31 Aug. 09	Ohi-2	Elevated radioactivity concentration found in the primary coolant.
3 Sep. 09	KK-2	Crack found in a pipe in the recirculation system.
6 Oct. 09*	Fugen	Leak of radioactive material within the radiation controlled area in the reactor auxiliary building of the Fugen Decommissioning Engineering Center.
9 Oct. 09	Tokai II	Crack found in core shroud support.
12 Oct. 09	Ohi-1	Exhaust pipe gas monitor showed elevated radiation reading.
14 Oct. 09*	Tsuruga-1	Thinning of sea water piping used for cooling the high pressure core injection system diesel engine found during a periodic inspection.
15 Oct. 09*	Fukushima II-4	Reduction in power when reactor recirculation pump A shut down.
22 Oct. 09*	RRP	Leak of radioactive material within a cell of the high-level liquid waste vitrification facility.
28 Oct. 09	Tsuruga-1	Crack found in the steam drier.
12 Nov. 09	Shika-2	Reactor shut down manually due to malfunction of 2 emergency diesel generators.

13 Nov. 09*	Mihama-1	While increasing electric power output during a periodic inspection, there was a rapid power increase when the load limiter switch of the valve which controls the amount of steam flowing to the turbine was operated. Power generation was stopped in order to carry out more detailed inspection.
13 Nov. 09*	Shika-2	Reactor shut down manually during adjustment operation due to lubricant oil leak from a valve in emergency diesel generator A.
20 Nov. 09	Ikata-1	During regular operations, there was a rapid 6% power increase when the valve which controls the amount of steam flowing to the turbine suddenly operated.
1 Dec. 09*	Hamaoka-3	Leak of radioactive material within the radiation controlled area of the 2nd basement in the auxiliary building.
13 Jan. 10*	Tokai II	Thinning of sea water piping of the residual heat removal system found during a periodic inspection.
29 Jan. 10*	Sendai-1	One worker killed and 6 others injured due to an electrical short when they were checking electrical equipment.
16 Mar. 10*	Takahama-4	Flaw found in 1 heat transfer tube in the steam generator.
23 Mar. 10*	Mihama-2	Flaw found in a weld in the air vent piping in the chemical and volume control system. The flaw was located just before the point where the charging water to the reactor coolant system flows into the regenerative heat exchanger.

TRF = Tokai Reprocessing Facility; KK = Kashiwazaki-Kariwa; RRP = Rokkasho Reprocessing Plant

\* Reporting legally required under the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors. In all other cases listed reporting was not legally required.

*Continued from page 1* refers to the fact that photovoltaic cells and wind power can be installed rapidly, whereas it takes a long time to construct nuclear power plants. Since fossil fuel plants are used while the nuclear power plants are being constructed, these emissions should be factored into any comparison.

Hasegawa explained that Japan's nuclear-dependent CO<sub>2</sub> emission reduction policies have failed, because whenever nuclear power plants are shut down as a result of earthquakes and scandals, fossil fuel plants are used to make up the energy deficit. He said that more effort should be put into efficient use of energy and the promotion of renewable energy. Finally, he pointed out that there is a danger that the competition between Japan and South Korea in their promotion of nuclear power could lead to nuclear proliferation.

Suzuki warned of the risks inherent in Japan's nuclear export policy. This policy is premised on public finance backed by taxpayers' money and pension funds. Finally, I outlined why nuclear power cannot contribute to solving climate change. In fact, electric power companies would prefer

not to emphasize climate change. They are wary that energy conservation will lead to a shrinking economy and that a shift to renewable energy will obstruct increased use of coal.

As well as promoting nuclear power, the APEC Energy Ministers' Meeting declaration stated, "Fossil fuels will continue to play a key role in the APEC energy market as economies develop new and unconventional energy sources." The citizens' symposium not only expressed its opposition to nuclear energy, it also appealed for energy conservation and active take up of renewable energy, aimed at a phase out of both nuclear energy and fossil fuels.

Baku Nishio (CNIC Co-Director)

A statement was sent to the APEC Energy Ministers' Meeting by the No Nukes Asia Forum. The full statement, which was endorsed by 25 NGOs from 11 countries, can be found on the following web site:

<http://www18.ocn.ne.jp/~nna/apec2010.htm>

## Anti-Nuke Who's Who

**Wakako Yamamoto: the Joan of Arc of Aomori Prefecture**

by Hajime Yamaura\*

**W**akako Yamamoto is a dentist in Hirosaki City. They call her the Joan of Arc of Aomori Prefecture.

A lawsuit has been in progress for the past 20 years calling for the closure of the nuclear fuel cycle facilities in Rokkasho Village on Aomori Prefecture's Shimokita Peninsula. These facilities include a uranium enrichment plant, facilities for low-level and high-level radioactive waste, and a reprocessing plant. Wakako was one of the representatives of the *10,000 Plaintiffs Against the Nuclear Fuel Cycle*. She is a woman who is trusted by everyone.

Besides juggling her work as a dentist and her activist role with the plaintiffs group and with a group opposing nuclear fuel shipments, she is also a member of the board of directors of Aomori Medical Practitioners' Association. She actively promotes awareness of nuclear issues through her position there.

The environmental pollution task force of the Japanese Medical and Dental Practitioners for Improvement of Medical Care (Hodanren) is calling for a fundamental review of Japan's nuclear fuel cycle and nuclear energy policies. It has conducted studies concerning the nuclear fuel cycle facilities at Rokkasho and nuclear energy related facilities throughout Japan. In April 2008 Hodanren's environmental pollution task force held a symposium, which adopted an appeal calling for the cancellation of planned commercial operations of the Rokkasho Reprocessing Plant.

In July 2009 the task force published a special edition of its bulletin under the title *Concerns about the Danger of the Rokkasho Reprocessing Plant*. It included an article by Wakako entitled "Commercial operation of the Rokkasho Reprocessing Plant must be stopped! ". Using concrete data from the Chernobyl accident and from the regions surrounding the reprocessing plants in the UK and France, she explained in detail the dangers arising from the regular exposure to low levels of radiation that would be incurred during full operation of the Rokkasho Reprocessing Plant. She is the driving force that has pushed this national association of medical and dental



practitioners to be so outspoken.

Active testing of the Rokkasho Reprocessing Plant began in March 2006, but testing has been suspended due to repeated accidents and problems associated with the high-level waste vitrification facility (see NIT 132). By the end of 2006, 330 trillion becquerels of radioactivity had already been released into the sea and air, causing concerns about environmental pollution and internal radiation exposure to workers and residents.

At a national gathering opposing nuclear power and the nuclear fuel cycle held in Tokyo in October last year (see NIT 133), Wakako reported about a petition opposing the nuclear fuel cycle, which was delivered to the Ministry of Economy, Trade and Industry. She delivered a powerful message to the gathering.

"Trampling on the feelings of the people of Aomori Prefecture, the reprocessing plant was built at a cost of 2.2 trillion yen on land that was taken from farmers. We will not allow this plant to begin commercial operations. Let us join hands to prevent the creation of even more nuclear waste."

Sketching her portrait in this way might give the impression that she is some kind of ferocious Amazon. The truth is that she is a very gentle woman. Her intelligence and appearance reminds one more of Joan of Arc played by Ingrid Bergman in the 1948 film directed by Victor Fleming.

\*Hajime Yamaura is a member of the *10,000 Plaintiffs Against the Nuclear Fuel Cycle*.

# NEWS WATCH

## **JAEA to cooperate with Vietnam on nuclear non-proliferation**

On June 25 the Japan Atomic Energy Agency (JAEA) concluded a memorandum of understanding with Vietnam's Agency for Radiation and Nuclear Safety regarding nuclear non-proliferation. The cooperation will include exchanges of information concerning regulations and systems for nuclear safeguards and security, human resource development, meetings of experts and visits to facilities. JAEA carried out a survey of Vietnam's nuclear non-proliferation activities in 2007 and held a meeting of experts in 2008.

## **Cabinet approves Basic Energy Plan and New Growth Strategy**

On June 18 the Cabinet approved the Basic Energy Plan and the New Growth Strategy. The Basic Energy Plan was formulated under the June 2002 Basic Act on Energy Policy. The first plan was adopted in October 2003. Since then it has been revised twice, first in March 2007 and now this time. Aiming to promote energy policy and economic growth strategy in a unified fashion, the government has essentially incorporated the Basic Energy Plan unchanged into the New Growth Strategy.

However, the order of the draft Basic Energy Plan prepared by the Ministry of Economy, Trade and Industry was rearranged by the National Policy Unit. Nuclear energy was originally placed before renewable energy as an energy supply strategy, but the order was reversed. In third place was the highly efficient use of fossil fuels. In the New Growth Strategy, targets for construction of new nuclear power plants and capacity factor were omitted. Nuclear power stations and coal fired power stations are both promoted and in both cases it is claimed that exports will contribute to economic growth. In this respect, the basic content was not changed, but it seems that alterations were made to take into account public support for renewable energy.

## **Fukushima I-2: loss of offsite power during scram**

On June 17, Tokyo Electric Power Company's Fukushima I-2 (BWR, 784MW) scrambled due to

a problem with the generator. Power was lost for a time, because the switchover to the offsite power supply was unsuccessful. As a result, the feedwater pump stopped and the water level in the reactor core fell about 2 meters. The emergency diesel generator started up just in time, so the Emergency Core Cooling System was not activated. The water level was restored by an alternative pump in the core isolation cooling system.

## **Chugoku Electric reprimanded**

Details of the failure by Chugoku Electric Power Company to carry out checks of equipment at Units 1 and 2 of its Shimane Nuclear Power Plants (BWR, 460MW & 820MW) were reported in NIT 136. According to Chugoku Electric's final report, submitted on June 3 to the Nuclear and Industrial Safety Agency (NISA), 511 planned checks were not carried out and a further 1,160 checks would probably have been missed eventually. All other power companies reported to NISA that no such problems had arisen at their plants.

On June 11, NISA ordered Chugoku Electric to amend its safety rules (government permission required) and issued a severe reprimand. NISA does not intend to allow the plants to be restarted until it has confirmed Chugoku Electric's preventative measures.

## **Assessment of safety activities at nuclear power plants**

On June 14, the Nuclear and Industrial Safety Agency (NISA) announced its comprehensive assessment of the safety activities at all nuclear power plants except Shimane Units 1 and 2. It subsequently announced its assessment of Shimane-1&2 on July 9. Shimane-1&2 were the only plants where NISA found issues that it assessed to be "unacceptable". In addition to the "unacceptable issues" at Shimane, "serious issues" at 21 plants and "issues" at 2 more plants require follow up inspections. Follow-up inspections were not demanded for 19 plants with "minor issues", or 10 plants with "no identified issues".

## **Final compensation claim from JCO criticality accident rejected**

On May 13, the Supreme Court rejected claims

for damages associated with the JCO Criticality Accident by husband and wife Shoichi and Keiko Oizumi. Their claims related to worsening of skin disease and Post Traumatic Syndrome respectively. On June 3, JCO announced that this brings to an end all outstanding negotiations and legal suits for compensation from the JCO accident, which occurred on September 30, 1999. According to JCO, compensation was paid for 6,983 out of a total of 8,018 claims. The total amount paid was 15.4 billion yen. It did not admit damage to health for any of these claims.

### **MHI signs agreement with Iberdrola Engineering**

On June 2, Mitsubishi Heavy Industries (MHI) announced that it had agreed with Spanish company Iberdrola Engineering to cooperate in marketing the European version of its 1,700-MW PWR, the EU-APWR. MHI will be responsible for overall engineering of the NPP and major NPP components and equipment while Iberdrola will take charge of installation work and design, procurement and commissioning of the nuclear island.

### **Mihama-1 to operate for a maximum of 10 more years**

Kansai Electric Power Company's (KEPCO) Mihama-1 Nuclear Power Plant (PWR, 340 MW) will reach 40 years of operation in November. On June 28 the Nuclear and Industrial Safety Agency (NISA) approved KEPCO's long-term maintenance management plan. On the same day KEPCO reported to Fukui Prefecture and Mihama Town that it planned to continue operating the plant for a maximum of ten years and begin consideration of a replacement.

### **Moves towards loading MOX fuel into Fukushima I-3**

A periodic inspection of Fukushima I-3 Nuclear Power Plant (BWR, 784 MW) began on June 19. Tokyo Electric Power Company (TEPCO) is increasing pressure on Fukushima Prefecture to allow MOX fuel to be loaded in August. A petition opposing this, which had been submitted to the Fukushima Prefectural Assembly, was put

to the vote on June 30 without referral for debate in committee. The petition was supported by a few assembly members, but was voted down. As conditions for the loading of MOX fuel, the prefecture is demanding confirmation of the integrity of the fuel (which was fabricated 13 years ago), a plan for dealing with aging of the reactor, and confirmation of seismic safety. The central government and the prefecture are currently considering TEPCO's report.

### **MOX fuel arrives from France**

On June 28, 20 MOX fuel assemblies were delivered to Kyushu Electric Power Company's Genkai-3 (PWR, 1180 MW). From there, the ships proceeded to Kansai Electric Power Company's Takahama Nuclear Power Station, where 8 MOX assemblies and 4 MOX assemblies were delivered on June 30 to Takahama-3 (PWR, 870 MW) and Takahama-4 (PWR, 870 MW) respectively. The fuel for Genkai-3 will be used in its second MOX load, while the fuel for Takahama Units 3 & 4 will be used in their first MOX load. The fuel was fabricated in France's Melox Plant and shipped amid protests from the Port of Cherbourg on April 8. It was unloaded at the nuclear power plants' own ports.

### **Application to implement pluthermal at Shika-1**

On June 28, Hokuriku Electric Power Company applied to Ishikawa Prefecture and Shika Town for permission to implement pluthermal\* at its Shika-1 Nuclear Power Plant (BWR, 357 MW). On the same day, it applied to the Minister for Economy, Trade and Industry to have its license amended. Now only Japan Atomic Power Company has yet to apply for permission to implement pluthermal.

\* MOX fuel is nuclear fuel made of a mixture of uranium and plutonium oxides. The term 'pluthermal' refers to the use of plutonium in thermal reactors - i.e. the use of MOX fuel in normal light water reactors as opposed to fast breeder reactors.

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