

# NUKE INFO TOKYO

Nov./Dec. 2009  
No. 133



Citizens' Nuclear Information Center

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## 10.3 NO NUKES FESTA 2009



photos by Akira Imai

On October 3, about 7,000 people gathered in the rain in Tokyo for the *10.3 No Nukes Festa 2009*, the first national gathering organized by the National Network Against Nuclear Energy since 2003 (see NIT 129). They called for a shift to alternative forms of energy that do not produce radioactive material.

Despite the inclement weather, booths did a lively trade in books about nuclear energy, organic vegetables and the local produce of people fighting nuclear power plants in the regions where they live. There were also booths exhibiting such things as renewable energy equipment. Goods and exhibitions by people living near existing or proposed nuclear power plants showed how local communities do not have to depend on nuclear power plants for their prosperity.

There was a wide range of musical performances on stage. In between performances, representatives of groups from around Japan made impassioned appeals about the issues that concerned them most. Hot issues were highlighted, including the fight to save Kaminoseki (pages 2,3), the introduction of pluthermal at Genkai (page 4) and the imminent restart of Monju (page 11). People from Aomori and surrounding prefectures spoke about the Rokkasho Reprocessing Plant.

Residents living near the Kashiwazaki-Kariwa Nuclear Power Station and the Hamaoka Nuclear Power Station spoke about the problems of earthquakes. People from Gifu spoke about their concerns regarding a facility in Mizunami City, which is researching the geological disposal of high-level radioactive waste. And people from Tokai Village spoke about the situation ten years after the Tokai criticality accident.

In the afternoon there were reports about the current situation regarding reprocessing, pluthermal and new nuclear power plants. Mizuho Fukushima, leader of the Social Democratic Party, which is a member of the new government, said there are many things that the new government can do, including reconsidering seismic design standards.

After adopting a *Continued on page 3*

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## Kaminoseki NPP: Sea Reclamation Begins

**C**hugoku Electric Power Company operates two nuclear power plants and is currently constructing a third on the Japan Sea coast in Matsue City, the capital of Shimane Prefecture (Shimane-3, ABWR 1,373 MW). On the other side of western Honshu (Japan's main island), it plans to build two nuclear power plants on the Seto Inland Sea coast in Kaminoseki Town, Yamaguchi Prefecture (2 x ABWR, 1,373 MW).

Kaminoseki Town comprises a peninsula and several islands. It has a population of 3,600 people. The proposed construction site is on Nagashima Island. Nagashima is connected by a bridge to the mainland. Iwaishima Island, which has a population of 500 people who are almost all opposed to the nuclear power plant (NIT 125), is just 3.5 km across the sea from the construction site.

The surface area of the proposed site is about 330,000 m<sup>2</sup>, about 40% (140,000 m<sup>2</sup>) of which will be reclaimed from the sea. Cooling water will be taken from the north side and released on the south side of the island. Tunnels will connect the inlet and outlet to the turbine buildings, which will be located inland of the reactors. The reactor building of the second plant will be located on reclaimed land. Preparation of the site is scheduled to take five years and reclamation work three years. The first plant is scheduled to commence operation in 2015, while the second plant is scheduled to commence operation in 2020.

### Opposition movement

The only settlement on Iwaishima Island directly faces the construction site across the narrow channel. The islanders' livelihoods are based on fishing and small-scale farming. When the plan for a nuclear power plant first emerged in 1982 the overwhelming majority of the island's population were opposed to it and in 1983 the then Iwaishima Fishing Cooperative passed a resolution opposing the plan. To this day, 90% of the island's population opposes the plan. For the last 27 years they have held a demonstration every Monday under the slogan "We will not sell the sea for a nuclear power plant." The demonstration has now been held over 1050 times and has become part of the local culture.

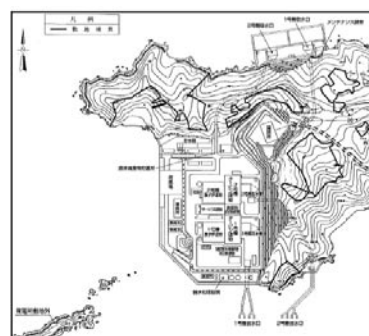
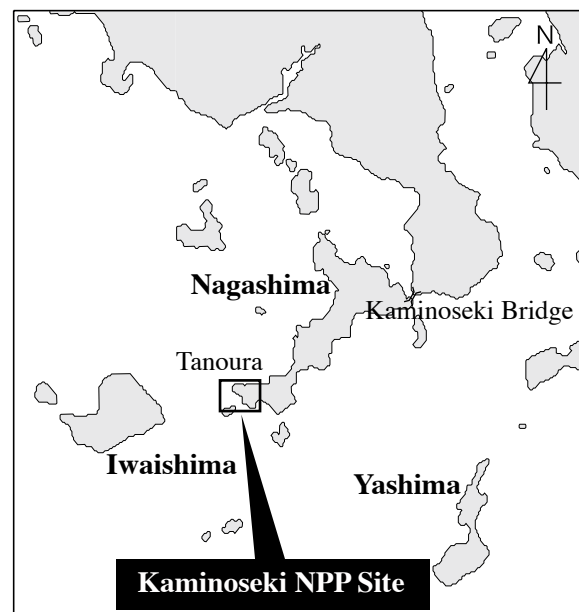
Kaminoseki as a whole has become polarized over the issue. Based on a December 2000 survey

by the Asahi Shimbun, 46% of the population is opposed to the nuclear power plant while 33% is in favor. In a town like Kaminoseki, where the population is dispersed between several settlements, it is difficult to reflect the true feelings of the people.

### Nagashima: a biodiversity treasure house

The region around Nagashima and Iwaishima is isolated and under-populated. Because it has largely escaped development, the Seto Inland Sea of fifty years ago has been preserved. People call it "Japan's Galapagos". The Ecological Society of Japan, the Ornithological Society of Japan and the Japanese Association of Benthology have called for the cancellation of the nuclear power plant project.

As if to prove the point, one after another protected and endangered species which are unique to Japan, such as Japanese murrelet and Japanese wood-pigeon, and rare species such as the finless porpoise (sunameri) have been confirmed to be living or breeding in the area. Other rare and endangered species identified in the surrounding



Reclaimed area in red

area include Tomura yashima (yashimaishin), a shell-fish which has only been identified on four occasions, Namekujiuo (Branchiostoma belcheri), which is listed as critically endangered by the Fisheries Agency, and



*Japanese Murrelet*

and a colony of seaweed (Coccophora langsdorfii (Turner) Greville) identified for the first time in a Japanese inland sea. (Refer NIT 84.)

Anyone would wonder why this of all places was chosen to build a nuclear power plant. A major problem is that the government accepted Chugoku Electric's woefully inadequate environmental assessment. The Ecological Society of Japan strongly criticized Chugoku Electric's environmental assessment saying, "The survey and analysis of each species is inadequate." "It fails to grasp the development, breeding environment and food chain for the species." "No assessment deserving the name of an ecosystem assessment has been carried out."

**Clashes between Iwaishima Islanders and the power company**

On October 9 Chugoku Electric attempted to begin reclamation work, but 30 Iwaishima fishing boats tied together with mooring ropes blocked the work. The fishing boats, supported by young people in sea kayaks, managed to prevent Chugoku Electric from making any progress for four weeks until October 7, when, using diversionary tactics, Chugoku Electric managed to drop two marker buoys in the sea. With this it claimed to have commenced reclamation work.

The continuing standoff grew ugly on the morning of November 8 when people on a fishing vessel supporting Chugoku Electric began hitting the sea kayaks with bamboo rods. Protesters

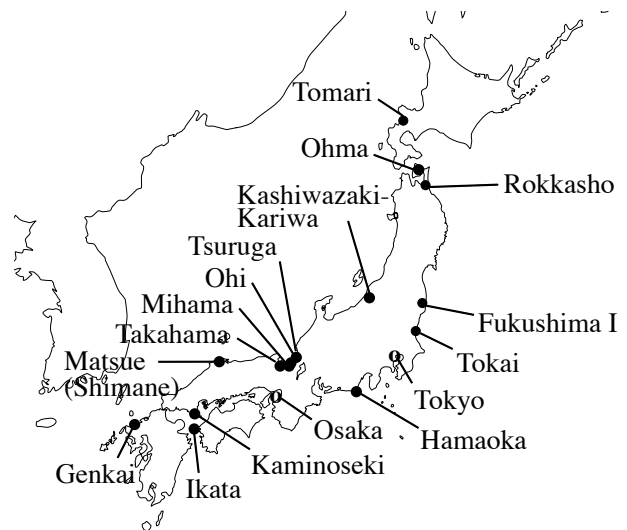


were attempting to prevent Chugoku Electric's contractors from throwing concrete blocks into the sea. The concrete blocks were thrown from a floating platform with no regard for the safety of the protesters beneath. One protester fell into the sea. He was hauled into the fishing boat, where he was man-handled by the people on board. He lost consciousness and was taken to hospital suffering from hypothermia.

The people of Iwaishima continue their struggle to protect their fishing ground and their lifestyle and in so doing to preserve the biodiversity treasure house of "Japan's Galapagos". Meanwhile, Chugoku Electric has taken them to court to obtain an injunction on the grounds that they are obstructing its business operations.

Masako Sawai (CNIC)

*Map of places mentioned in NIT 133*



*Continued from page 1* statement and action plan, demonstrators paraded through the streets of Tokyo in time to the rhythmical beating of drums. Passers-by were attracted to their colorful clothes, placards and cries of "We don't need nuclear power!"

The previous day petitions were handed to the Ministry of Economy, Trade and Industry and the Ministry of Education, Culture, Sports, Science and Technology and in the evening a series of workshops were held. It was a tough schedule, but it was inspirational to have so many people from all around Japan gathered for one purpose.

By Nozomu Nagai (CNIC)

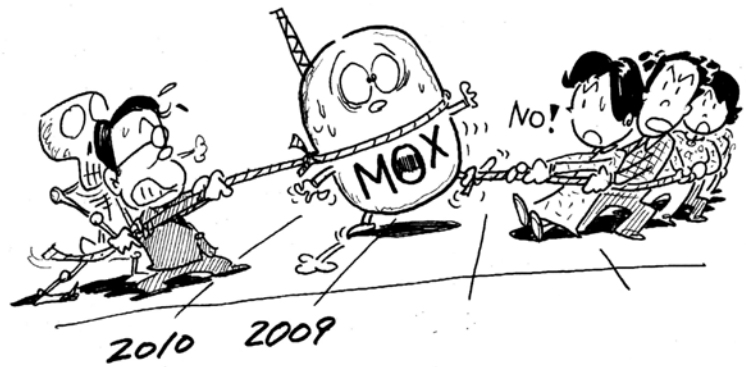
## Genkai-3 First to Begin Long-Delayed Pluthermal

Sixteen MOX<sup>1</sup> fuel assemblies shipped from Areva's Melox MOX Fuel Fabrication Plant in France arrived at Kyushu Electric Power Company's Genkai-3 Nuclear Power Plant on May 18 this year. Kyushu Electric finished loading the fuel on October 17 during a periodic inspection which started in August. It is the first time MOX fuel assemblies have been loaded into a Japanese nuclear reactor based on the utilities' pluthermal<sup>2</sup> plans. Genkai-3 began start-up tests on November 5 and is now moving towards commercial operation. However, progress from receipt of the fuel to the commencement of start-up tests has not been smooth. This article discusses the local campaign against the implementation of pluthermal at Genkai.

The initial focus of the campaign was the management of spent MOX fuel. In the absence of a plan to reprocess the spent fuel, it must be stored locally long-term. Civil society groups quickly pointed out this fact. The government's 2005 Framework for Nuclear Energy Policy states, "Study on the measures to be taken for ... spent MOX fuel from LWRs will start in around 2010". However, there is no chance that such a study will commence in 2010 and the Atomic Energy Commission (AEC) has delayed reviewing its nuclear policy. It seems that the reason why AEC is delaying the policy review relates to the delay in commencement of commercial operation of the Rokkasho Reprocessing Plant.

The Committee to Consider Pluthermal and Saga's Next 100 Years (Saga 100 Years Committee) (NIT 128) takes the position that at the very least MOX fuel should not be loaded before there is a clear explanation of what will be done with the spent fuel. On July 2 it demanded that Saga Prefecture provide such a public explanation. There is still no official policy about whether spent MOX fuel is destined for reprocessing or direct disposal.

Another problem has emerged in relation to quality control of MOX fuel pellets (NIT 132). It was announced on August 19 that MOX fuel pellets produced at Areva's Melox MOX fuel fabrication plant in France for Kansai Electric Power Company (KEPCO) had failed KEPCO's own quality standards and that KEPCO had



Cartoon by Shoji Takagi

decided to reduce its order from 16 fuel assemblies to 12. The problem pellets represent 25% of the total order. According to KEPCO, Melox claimed that the pellets were usable but KEPCO's own standards were more strict. Questions naturally arose about the quality of pellets produced by Melox for Kyushu Electric. During negotiations on October 7 between the government and NGOs, including the Saga 100 Years Committee, the Nuclear Industrial and Safety Agency (NISA) said that it understood that the pellets used at Genkai met Kyushu Electric's internal standards, but that it "cannot rule out the possibility that there could be fuel which KEPCO failed". The following day the Saga 100 Years Committee submitted a petition to the Governor of Saga Prefecture and the Mayor of Genkai Town demanding a meeting to explain the situation. It also demanded that Kyushu Electric publish its inspection data.

Numerous other demands have been submitted, including a petition, which so far has been signed by 460,000 people, demanding cancellation of the pluthermal program. However, on October 15 Kyushu went ahead and loaded MOX fuel and on November 5 began start-up tests. The Saga 100 Years Committee responded by beginning an indefinite sit-in outside the head office of Kyushu Electric in Fukuoka City.

Besides Genkai-3, MOX fuel was also shipped to Shikoku Electric's Ikata-3 (Ehime Prefecture) and Chubu Electric's Hamaoka-4 (Shizuoka Prefecture) Nuclear Power Plants. MOX fuel is scheduled to be loaded into Ikata-3 during the periodic inspection beginning in January 2010 and into Hamaoka-4 during the periodic inspection beginning around November 2010.

Introduction of pluthermal at Chugoku

*Continued on page 9*

## KK - 6 & 7: Unresolved Public Mistrust

**T**okyo Electric Power Company (TEPCO) had hoped to begin commercial operation of Units 6 and 7 of the Kashiwazaki-Kariwa Nuclear Power Plant (KK) in November, but it appears increasingly unlikely that it will be able to do so, due to the ever-increasing mistrust of the residents of Kashiwazaki City, Kariwa Village and Niigata Prefecture at large. The public is not satisfied with the deliberations of Niigata Prefecture's subcommittee looking into equipment integrity and earthquake resistance and safety. Furthermore, new information has emerged which calls into question TEPCO's corporate character.

1. As reported in NIT 132, on July 23, the day before KK-7 was scheduled to enter commercial operations, there was a leak of radioactivity in the reactor's primary circuit. It is suspected that the leak came from a damaged fuel rod. TEPCO decided to continue operating the plant carrying out power suppression testing, but in the end it was forced to shutdown the plant on September 26.

TEPCO identified a leaking fuel rod and investigated the cause of the damage. It discovered a 0.2mm thick 30mm long metal wire caught in a fuel rod spacer. Signs of abrasion were found on the adjacent fuel rod. TEPCO dismissed the incident, saying that it was a chance phenomenon that affects one in 160,000 fuel rods and that it was not caused by the earthquake. The abovementioned subcommittee accepted this explanation.

However, slight swelling of the fuel rod, believed to have been caused by absorption of hydrogen, was identified. This suggests that there was a small hole through which water entered. It is unclear whether it was caused by the metal wire. TEPCO only carried out observations using an underwater camera, ultra-sound tests and a fiberscope, so there is no conclusive evidence. Citizens are calling for TEPCO to remove the fuel assembly, so that the fuel rod can be checked directly. They are demanding that TEPCO clarify the cause of the problem and not just rely on speculation.

2. When TEPCO first requested permission to restart KK-7, the governor of Niigata Prefecture and the mayors of Kashiwazaki City and Kariwa Village attached four conditions to their approval. The conditions were based on the demand of the governor and mayors that top priority be given to the citizens' safety and freedom from anxiety

of accidents and troubles.<sup>1</sup> Their third and fourth conditions were as follows:

- new information be actively accumulated and reflected in order to promote the citizens' safety and freedom from anxiety of accidents and troubles;
- serious efforts be made to improve the overall character of the power plant.

However, it is clear that no progress has been made on either of these conditions. Four people were injured in September and October this year and eleven fires have occurred at KK since the Chuetsu-oki Earthquake in July 2007. It is clear that TEPCO's fundamental character has not changed and that the public cannot feel free of anxiety.

3. In November it emerged that a pipe in KK-1 had been attached incorrectly ever since the plant was first constructed (see page 12). As a result, for 24 years since the plant began operating in 1985, the plant has been releasing radioactive tritium out to sea. It is suspected that the same applies to Units 2 and 5. Trust in TEPCO is as low as it can go. TEPCO failed to notice that the construction was not carried out in accordance with the design. Evidently TEPCO is incapable of managing a nuclear power plant, or of fixing its management structure. One must also ask questions about the competence of the Nuclear Industrial and Safety Agency. It is a very serious state of affairs.

Under these circumstances the local people are certainly not willing accept the restart of KK-6&7. The question of what if anything has actually been confirmed is shrouded in mist. The members of Niigata Prefecture's technical committee and its subcommittees are faced with a situation that they did not foresee. The reality is far removed from simply proceeding in a step-by-step fashion.

By Yukio Yamaguchi (CNIC Co-Director)

1. The words "anzen" and "anshin" have taken on great significance in the context of the restart of KK-6&7. The first word means "safety". In NIT 132 the second word was translated as "peace of mind". A reader from Niigata Prefecture pointed out that this translation does not capture the full significance of the word. In this edition we have adopted one of the alternative translations suggested by the reader. The citizens of Niigata Prefecture are concerned that insufficient attention is being given to their "anshin".

## Waste Mismanagement at Rokkasho

### Another HLW Leak

Japan Nuclear Fuel Ltd. (JNFL) is currently trying to restore the Rokkasho Reprocessing Plant after a leak of about 150 liters of high-level radioactive liquid waste (HLW) in the vitrification facility in January 2009 (NIT 129-132). However, just before midnight on October 21 another leak occurred from the same pipe. The leak occurred because a chain hanging from a crane knocked against the flange. Fortunately, this time when the problem was identified only about 20 ml had leaked into the tray below.

JNFL finally admitted that the leak was HLW on October 29, one week after the incident. Based on the concentration of cesium-137 there were never any grounds for doubt, but JNFL continued to say that it did not know whether or not it was HLW, because HLW was not being fed into the pipe at the time. However, it eventually discovered that there was 510 ml of HLW remaining in the pipe. JNFL has given no explanation of why the HLW was there.

### LLW dumped in spent fuel storage building

The spent fuel storage pool at Rokkasho began operation in December 1999. It has a total storage capacity of 3,000 tons and is now nearly full with 2,800 tons of spent fuel.

On September 7 it was revealed that a large quantity of plastic bags containing low-level radioactive waste (LLW) were strewn all around the building. By rights this waste should not be there at all, but as it is it has been left all over the place on the floor and in passageways (see photo).

LLW, including paper, rags and polyethylene, rubber gloves, vinyl chloride and resins, steel and concrete, filters, etc., is produced during daily checks and annual inspections of the spent fuel storage building. This is supposed to be stored in LLW Storage Building No. 1. However, as a result of work to rectify numerous problems that have occurred over the past several years, large quantities of "unscheduled waste" were produced. The problems included leaks due to shoddy welding of the pool liner (2002-2004, NIT 88, 95, 98), leaks in the burnable poisons treatment

pit (2005, NIT 107) and earthquake safety design flaws for spent fuel handling equipment (2007, NIT 118).

JNFL increased the quantity of waste drums that could be contained within the waste storage building from 8,500 to 13,500, but this was still not enough. JNFL says that there are currently 13,332 drums stored in the building and that the excess is being stored temporarily in the spent fuel storage building. It estimates that the quantity temporarily stored in this way would fill 8,100 drums, but does not know the precise number.

"Temporary storage" commenced some time between July and September 2001. In September of that year government inspectors told JNFL that if it must store the waste temporarily then it should do it properly. JNFL produced a temporary storage manual and since then temporary storage has become routine practice. JNFL's waste "contaminated by spent fuel" has been left in passageways, on the floor, on scaffolding and on steel pallets throughout the spent fuel storage building. JNFL may prefer to refer to it euphemistically as waste "contaminated by spent fuel", but the fact is that it is radioactive waste. Storage in this fashion is clearly a violation of the Reactor Regulation Law. JNFL says that the situation will be rectified during 2010.

Masako Sawai (CNIC)



## Japanese Inventory of Separated Plutonium at 31 December 2008

**Held in Japan** (Quantities shown are kgPu. Amounts shown in brackets are for 2007.)

Reprocessing Facilities	JAEA (Tokai)	JNFL (Rokkasho)	Total
Plutonium nitrate etc. (after dissolution up to, but not including, storage in containers as plutonium oxide)	674 (675)	276 (865)	950 (1,540)
Plutonium oxide (stored in containers as plutonium oxide)	106 (120)	3,329 (1,747)	3,435 (1,867)
<b>Total Plutonium</b>	<b>780 (795)</b>	<b>3,604 (2,612)</b>	<b>4,384 (3,407)</b>
Total Fissile Plutonium	520 (531)	2,344 (1,721)	2,864 (2,251)

JAEA Plutonium Fuel Fabrication Plant	
Plutonium oxide (stored plutonium in plutonium oxide containers)	2,495 (2,764)
Plutonium in test or fabrication stage	1,047 (895)
New fuel etc. (stored as finished fuel assemblies etc.)	78 (303)
<b>Total Plutonium</b>	<b>3,620 (3,962)</b>
Total Fissile Plutonium	2,515 (2,761)

Nuclear Reactor Facilities	Joyo	Monju	Fugen	Commercial Reactors	R&D facilities
Nuclear Reactor Facilities (held as new fuel etc.)	134 (126)	699 (367)	0 (0)	415 (415)	444 (444)
<b>Total Plutonium</b>	<b>1,692 (1,352)</b>				
Total Fissile Plutonium	1,247 (1,007)				

<b>Total Plutonium</b>	<b>9,696 (8,721)</b>
Total Fissile Plutonium	6,625 (6,019)

**Held Overseas** (Quantities shown are kgPu. Amounts shown in brackets are for 2007.)

(To be fabricated into MOX fuel overseas and used in Japan's light water reactors.)

Recovered in UK	11,380 (11,332)
Recovered in France	13,832 (13,886)
<b>Total</b>	<b>25,212 (25,218)</b>

NB: Figures only available for fissile plutonium held overseas.

## Separated plutonium in use from January-December 2008

(Quantities shown are kgPu. Amounts shown in brackets are for 2007.)

Reprocessing Plant	JAEA (Tokai)	JNFL (Rokkasho)	Total
Plutonium oxide recovered	0 (77)	1,582 (1,650)	1,583 (1,727)
	Monju, Joyo, Fugen, etc.		
Plutonium in fuel fabrication processes	284 (51)		
Plutonium loaded in nuclear reactors	0 (23)		

## 2008 Balance of Separated Plutonium Held in Japan

### Total (kgPu)

Plutonium separated at reprocessing facilities	997
Plutonium loaded into reactors	0
Variation in processes at each facility	- 20
<b>Balance</b>	<b>997</b>

<b>JAEA Reprocessing Facility (Tokai)</b> (from separation & purification process to storage of raw materials)		
Items		Increase/Decrease
Inventory as of 1 January 2008 (end 2007)		795
Total amount of plutonium separated in 2008		0
Total amount of plutonium shipped out in 2008		- 15
Variation in processes at reprocessing facilities		0
Detailed breakdown	Transfer to retained waste	- 0.6
	Retransfer from retained waste	0.1
	Nuclear loss	- 1.5
	Measured discard	0.0
	Material unaccounted for (MUF)	1.8
Inventory as of 31 December 2008		780

<b>JAEA Plutonium Fabrication Facility</b> (from mixed oxide powder (MOX) raw material to fuel assembly products)		
Items		Increase/Decrease
Inventory as of 1 January 2008 (end 2007)		3,962
Total amount of plutonium received in 2008		15
Total amount of plutonium shipped out in 2008		- 340
Variation in processes at fuel fabrication facilities		- 17
Detailed breakdown	Shipper/receiver difference	0.0
	Transfer to retained waste	0.0
	Retransfer from retained waste	0.1
	Nuclear loss	- 16.7
	Material unaccounted for (MUF)	0.1
Inventory as of 31 December 2008		3,620

<b>Nuclear Reactor and other Facilities</b> (Joyo, Fugen, Monju, Commercial Reactors, R&D Facilities)		
Items		Increase/Decrease
Inventory as of 1 January 2008 (end 2007)		1,352
Total amount of plutonium received in 2008		340
Total amount of plutonium loaded in nuclear reactors during 2007		0
Inventory as of 31 December 2008		1,692



<b>JNFL Reprocessing Facility (Rokkasho)</b> (from separation & purification process to storage of raw materials)		
Items	Increase/Decrease	
Inventory as of 1 January 2008 (end 2007)	2,610	
Total amount of plutonium separated in 2008	997	
Total amount of plutonium shipped out in 2008	0	
Variation in processes at reprocessing facility	- 3	
Detailed breakdown	Transfer to retained waste	- 0.1
	Retransfer from retained waste	0.0
	Nuclear loss	- 2.1
	Measured discard	- 0.2
	Material unaccounted for (MUF)	- 0.5
Inventory as of 31 December 2008	3,604	

### Comment on Plutonium Inventory

On September 8, the Atomic Energy Commission published Japan's inventory of separated plutonium for the end of 2008. The data for plutonium held overseas at the end of 2007 was only given in 100 kg units. In response to CNIC's demands, the data for 2008 was provided in kg units as in previous years.

The reason why the figure for plutonium held in the UK has increased is presumably because THORP resumed operation after a long delay. The reduction in France is due to nuclear loss (beta decay of Pu-241 to Am 241).

Tokai's reprocessing contracts for Japan's electric power companies were completed in 2005, so no plutonium was separated in 2008.

The amount of separated plutonium at the Rokkasho Reprocessing Plant has reached 3,604 kg. Due to problems with the vitrification facility the plant is out of operation until at least October 2010. However, given that JNFL's MOX fuel fabrication plant will not begin operating until 2015 at the earliest, it is likely that a large quantity of separated plutonium will be stored at Rokkasho for some time.

The 340 kg of MOX fuel shipped out of the JAEA Plutonium Fabrication Facility corresponds to the same quantity received at Monju. JAEA began loading replacement fuel on June 24 this year (see NIT 131).

Hideyuki Ban (CNIC Co-Director)

*Continued from page 4* Electric's Shimane-2 Nuclear Power Plant, Hokkaido Electric's Tomari-3 Nuclear Power Plant and KEPCO's Takahama-3&4 Nuclear Power Plants have obtained local approval. Four other electric power companies - Tokyo Electric (TEPCO), Hokuriku Electric, Tohoku Electric and Japan Atomic Power Company - have not yet obtained local approval. Of these, Tohoku Electric has applied for local approval and the prefectural government has commenced an inquiry and held forums with local citizens. Fukushima Prefecture has reopened a long-dormant inquiry regarding approval of the introduction of pluthermal in TEPCO's Fukushima plants, but there are no moves in Niigata Prefecture due to the Chuetsu-oki Earthquake. Official consideration of

the pluthermal plans of the other two companies has not yet begun. Finally, J-Power's Ohma Nuclear Power Plant, which is designed to be capable of operating entirely on MOX fuel, is under construction. On November 11 J-Power announced that it had signed contracts to purchase MOX fuel (about 240 assemblies containing 1.3 tons Puf) from seven other utilities. J-Power does not have any plutonium of its own.

Hideyuki Ban (CNIC Co-Director)

1. MOX is an abbreviation for "mixed plutonium and uranium oxide".
2. 'Pluthermal' refers to the use of plutonium (MOX) fuel in thermal reactors (i.e. light water reactors), as opposed to in fast breeder reactors.

## Group Introduction

# Osaka Citizens Against the Mihama, Oi and Takahama Nuclear Power Plants

By Taku Hashimoto\*

The Osaka Citizens Against the Mihama, Oi and Takahama Nuclear Power Plants is made up of citizens of Osaka and surrounding regions. The head office of Kansai Electric Power Company (KEPCO), which owns these plants, is located in Osaka. The group was formed in 1991 after an accident at the Mihama-2 Nuclear Power Plant. Its aim was to close down KEPCO's nuclear power plants, some of which were aging dangerously. The name reflects that objective.

The group's objectives were expanded after an incident in 1999. In that year KEPCO attempted to begin its pluthermal program (see page 4), but along with Green Action we exposed data falsification by BNFL in relation to fabrication of fuel pellets. Citizens of Fukui Prefecture (where KEPCO's nuclear power plants are located) and the Kansai region launched a lawsuit, which led to the suspension of KEPCO's pluthermal program. We then became involved in opposition to pluthermal throughout Japan. At the moment we are working with people in Saga Prefecture to stop the pluthermal program at Kyushu Electric's Genkai-3 Nuclear Power Plant.

In the present urgent situation we are focusing on problems with the disposal plan for spent MOX fuel and especially with the quality of the MOX fuel itself. In August, KEPCO determined that fuel pellets for 4 of the 16 fuel assemblies that it had ordered from the Melox plant in France failed its own tests and consigned about 340,000 pellets to the scrap heap. However, Kyushu Electric closed the lid on the issue. It went ahead regardless, loading MOX fuel into its Genkai-3 reactor on October 15 and beginning start-up tests on November 5. Our group is working in close solidarity with people from Saga and Fukuoka Prefectures, helping them with the content of their campaign. At the same time, we are continuing our campaign against the introduction of pluthermal to KEPCO's Takahama-3&4 plants.

As a natural corollary of our opposition to pluthermal, we have expanded our focus to include



*Negotiations with the Nuclear Industrial and Safety Agency (NISA) about MOX fuel quality control problems (October 7, 2009)*

opposition to the Rokkasho Reprocessing Plant. The plant's vitrification process is in total disarray and active testing is on hold. Japan Nuclear Fuel Ltd. (JNFL) announced an extended delay to next October for completion of the testing phase, but the effects of a large-scale leak of nitric acid solvent are very serious. JNFL has also failed to solve the fundamental problem of platinum group elements blocking the vitrification furnace. Restart of the plant is utterly impossible. We are campaigning for cancellation of the active tests and of reprocessing itself.

In regard to our core mission of shutting down KEPCO's nuclear power plants, we became involved in issues arising from the 2004 Mihama-3 accident, holding negotiations with KEPCO and the government on numerous occasions. As KEPCO's nuclear power plants grow older, the danger continues to increase from shoddy management which gives priority to economics. In our negotiations with KEPCO and Fukui Prefecture we are always looking for information that exposes the true state of the nuclear power plants. By specifically identifying the dangers, we hope to gain the public's attention and to bring about the closure of aging plants.

Besides these issues, we are involved in support for the JCO lawsuit. We are also carrying out public relations activities opposed to the promotion of nuclear energy as a solution to global warming and informing people about the fact that the so-called nuclear renaissance is a failure.

\*Taku Hashimoto is a member of Osaka Citizens Against the Mihama, Oi and Takahama Nuclear Power Plants.

# NEWS WATCH

## **MOX Fuel Shipped to Monju**

From October 29 to 30, 18 MOX fuel assemblies were transported from Japan Atomic Energy Agency's (JAEA) plutonium fuel facility in Tokai Village, Ibaraki Prefecture to its Monju Fast Breeder Reactor (FBR, 280 MW) in Tsuruga City, Fukui Prefecture. All the new fuel required to restart Monju by March 2010 as scheduled had already been shipped, so the fuel shipped this time will be used to carry out tests raising the reactor to 40% power output.

On October 29 CNIC followed the three trucks from Tokai Village to Shibuya in Tokyo to observe the transport conditions. The police-protected shipment was greeted by protests along the route.

## **Toshiba Certified as Supplier of U.S. ABWR**

On October 8, Toshiba announced that it had been certified by the U.S. Nuclear Regulatory Commission (NRC) as a supplier of the U.S. Advanced Boiling Water Reactor (ABWR). The applicant for the design certification was GE Nuclear Energy. It is the first time that a Japanese company has been certified by NRC as a nuclear reactor supplier to the United States.

Earlier this year Toshiba signed an engineering, procurement and construction contract for two ABWRs at the South Texas Project (Units 3 and 4, each 1,350MW - see NIT 129) and Toshiba's Isogo Engineering Center (Kanagawa Prefecture) and Fuchu Factory (Tokyo) have been accredited as meeting U.S. nuclear reactor design and quality control standards.

## **UK Ready to Begin Returning Vitrified Waste**

On October 20, four Japanese electric power companies (Tokyo, Kansai, Shikoku and Kyushu) announced that vitrified high-level radioactive waste (HLW) canisters produced from spent nuclear fuel reprocessed at Sellafield in the UK will be returned to Japan by March next year and that the necessary preparations have commenced. The canisters will be shipped to the storage facility

at the Rokkasho Reprocessing Plant in Aomori Prefecture. A total of 28 canisters (7 for each company) will be shipped on this occasion, but for reasons of security the route and schedule have not been disclosed.

These are the first of a total of 1,000 canisters which will be returned to Japanese electric power companies (including power companies other than the above four). Of these, 850 canisters are HLW and 150 are HLW substituted for a radiologically equivalent quantity of intermediate and low-level waste. Already 1,310 canisters have been returned to Japan from the reprocessing plant in La Hague, France, completing the HLW shipments. (As yet no arrangements have been made regarding the return of LLW from France.)

## **Feasibility Study for Vietnamese Nuclear Power Plant**

Japan, France and South Korea are competing to win a contract to carry out a feasibility study (FS) for Vietnam's nuclear power plant plan. Vietnam aims to introduce nuclear power from 2020. The Japanese government, electric power companies and plant makers have combined forces to secure the FS contract. The government recently awarded Japan Atomic Power Company a maximum of 2 billion yen to carry out a project related to the FS.

## **Toshiba, Mitsubishi, Hitachi Developing Small Reactors**

The October 24 edition of Nikkei Shimbun reported that Japan's three nuclear power plant makers, Toshiba, Mitsubishi and Hitachi, are all developing small nuclear reactors. As reported in NIT 105 and 121, in cooperation with the Central Research Institute of Electric Power Industry (CRIEPI) Toshiba is developing the 4S (Super Safe, Small and Simple) reactor (50 MW and 10 MW versions). It hopes to install it in Galena in Alaska and is also eyeing other places, including Canada's Alberta Province. It intends to submit an application for design certification to the U.S. Nuclear Regulatory Authority in 2010.

Mitsubishi Heavy Industries (MHI), in

cooperation with Kyoto University, CRIEPI and Japan Atomic Power Company, is designing an Integrated Modular Water Reactor (IMR, 350 MW). The concept design has been completed and MHI is now considering the market environment in order to decide whether or not to proceed to the basic design stage. MHI is also jointly developing the Pebble Bed Modular Reactor (PBMR, 165 MW) with South African publicly owned electric power company ESKOM, although recent reports suggest that South Africa's pebble-bed reactor demonstration plant has been indefinitely postponed due to lack of financing (Nucleonics Week, September 17, 2009).

Meanwhile, Hitachi is developing a compact BWR (400-600 MW) with U.S. nuclear power plant maker GE.

### **Tsuruga-1 and Mihama-1 to operate beyond 40 years**

On September 3, the Minister for Economy, Trade and Industry approved Japan Atomic Power Company's (JAPCO) plan to operate its Tsuruga-1 plant (BWR, 357 MW) beyond 40 years. On the same day JAPCO advised Fukui Prefecture and Tsuruga City of its intention to operate the plant for 46 years until 2016. Tsuruga-1 began commercial operations on March 14, 1970. Tsuruga-1 will be the first Japanese nuclear power plant to operate beyond 40 years.

On November 5, Kansai Electric Power Company (KEPCO) applied to the Minister for Economy, Trade and Industry for permission to amend safety protection rules for its Mihama-1 Nuclear Power Plant (PWR, 340 MW) to enable it to operate the plant beyond 40 years. On the same day it advised Fukui Prefecture, Mihama Town and Tsuruga City of its intention to begin consideration of operating the plant beyond 40 years. Mihama-1 began commercial operations on November 28, 1970, making it Japan's second oldest nuclear power plant.

Utilities wishing to operate their nuclear power plants beyond 40 years are required to submit a technical assessment of the aging of the plant and a

long-term maintenance policy.

### **Irregular power output at Mihama-1**

On November 6, the day after KEPCO announced its intention to operate its Mihama-1 Nuclear Power Plant beyond 40 years, the plant was forced to suspend adjustment operations because of problems with a control rod. The plant was undergoing a periodic inspection and adjustment operations had just begun. When checking the operation of the control rods, an alarm went off indicating that the height of one of the control rods was lower than it should be. The height of the control rod was adjusted manually and the test was restarted, but the alarm went off again. A nut securing a power cable connection for the control rod was found to be loose.

Adjustment operations were resumed on November 12. After thirty minutes power output increased suddenly when the load limit switch of the steam adjustment valve was operated in order to increase power output from 5% to 20%. The switch was adjusted to reduce power output and 20 minutes later power output stabilized at 6%. Adjustment operations were suspended again on November 13 to investigate the problem.

### **Tritium released to sea from incorrectly fitted pipe**

On June 30 it was discovered that water containing tritium had been released to sea from Tokyo Electric Power Company's (TEPCO) Fukushima II-1 Nuclear Power Plant (BWR, 1100 MW). A pipe for treating radioactive material had been erroneously connected to a pipe for treating non-radioactive material. On October 28 TEPCO reported to the Nuclear Industrial and Safety Agency that water contaminated with tritium was released on three occasions since 2001, but that the amount of radioactivity was very low.

TEPCO checked all its nuclear power plants and announced on November 5 that it had discovered a similar mistake at Kashiwazaki-Kariwa-1 (BWR, 1100 MW). In this case the problem had been overlooked ever since the plant began operating in 1985 (see page 5).

**Nuke Info Tokyo** is a bi-monthly newsletter that aims to provide foreign friends with up-to-date information on the Japanese nuclear industry as well as on the movements against it. It is published in html and pdf versions on CNIC's English web site: <http://cnic.jp/english/>

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