

NUKE INFO TOKYO



Citizens' Nuclear Information Center

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HLW TRANSPORT -- Series No.7

Oshita Runs for Aomori Governorship



Ms. Oshita (center) campaigning in the snow

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A heated controversy is now raging in Aomori Prefecture over the acceptance of vitrified high level waste (VHLW). This highly hazardous radioisotope is the byproduct of reprocessed spent fuel that was sent from Japan to France and the United Kingdom. This highly radioactive waste, something that the living environment of humans would never allow to exist, will be stored at an intermediate storage facility in Aomori for more than 50 years.

According to the plans drawn up by COGEMA and FEPCO (Federation of Electric Power Companies), 28 VHLW canisters are scheduled to arrive in Rokkasho Village, Aomori Prefecture in early April as the first shipment. Nothing has been revealed about the following shipment. Right now Rokkasho Village is constructing a Waste Management Facility that can hold as many as 1,440 canisters. It has been reported that the vessel loaded with the canisters is now ready to depart, but the Facility has not been completed yet. It is scheduled to be completed just before the arrival of the canisters, which shows that crucial problems such as the safety of the facility are not being taken seriously, and everything else takes second place to completing the operation on schedule.

The Prefecture of Aomori, Rokkasho Village and JNFL (Japan Nuclear Fuel Ltd.), which is responsible for storage of the waste, had to conclude a safety agreement in order to make possible its intermediate storage in Rokkasho Village. The Governor of Aomori, Masaya Kitamura, submitted a draft agreement saying that the VHLW would be stored for no longer than 50 years, but this failed to clarify what would be done with the waste after the end of the storage period. So a number of politicians submitted questions to the Governor at the Prefectural Assembly about the safety of waste storage, the criteria for the duration of storage, and how to handle the waste in the event the final repository was not decided. Kitamura then had to ask for a written assurance from the STA (Science and Technology Agency) with which he had the Assembly pass the draft agreement. The agreement was finally concluded on December

26, '94.

The assurance submitted under the name of Science and Technology Minister Makiko Tanaka was nothing more than a restatement of the current Long Term Nuclear Energy Program. It said "the bodies responsible for the final disposal of HLW will be established by the year 2000 and the final disposal site will be decided by 2040." It did not ease the fears or concerns shared by many local Aomori residents, namely that the Waste Management Facility will itself end up becoming the final repository.

In this critical situation, the election campaign for governor started on January 19. Activists from citizens' movements, trade unions and farmers' organizations have formed a coalition to support an anti-nuclear candidate, Ms Yumiko Oshita, who is representing the Group of 10,000 Plaintiffs for the Lawsuit Against the Nuclear Fuel Cycle. Her election campaign is focussing on the HLW issue. Oshita teaches Japanese literature at a university and at the same time plays an active part in the anti-nuclear movement, believing that doing something to stop the nuclear facilities is one of the most important jobs to be done in Aomori. Now that almost all the waste from reactors throughout Japan is to be stored in Aomori, we should all support our candidate, a "Joppari" (meaning a stubborn person in the local dialect) who is speaking out strongly against nuclear power.

Concern Mounts Over HLW Shipments

Amidst the shroud of secrecy surrounding the shipment of high level radioactive waste scheduled to take place in February-March, the Lyman report has effectively alerted the people and governments of nations projected to be en route. As soon as the report was released on December 14, governments started voicing their concern and objections.

The Philippine government and President Ramos were the first to declare, on Dec. 21, their refusal to allow the passage of any vessel carrying highly radioactive and hazardous material through Philippine territory.

Opposition is increasing rapidly in the Caribbean Sea, since the route of the shipment is rumored to pass through the Panama Canal. The government of Antigua and Barbuda, the Prime Minister of Barbados, and the Vice President of the Dominican Republic have expressed their concern and refused to allow the vessel entry. Puerto Rico, Trinidad and Tobago, and Panama have also protested unofficially.

Japanese Citizens Concerned about Plutonium' put an opinion ad in the Panamanian newspaper La Prensa on January 6, and four of its members including the atomic bomb survivor Ms. Suzuko Numata visited Panama (See article on the following page). According to unconfirmed sources, the Panama Canal Commission had been asked about the possibility of the ship passing through the Panama Canal twice in the past.

Meanwhile, the Pacific countries have started voicing their concerns. On January 17, the government of the

Republic of Nauru announced its opposition to the shipment of nuclear and radioactive substances through Nauru's 200-mile Exclusive Economic Zone. It was followed by members of the Parliaments of Australia and New Zealand, who fear that the vessel may pass through the Tasman Sea, the same route as the plutonium shipment of 1992. Members of the U.S. Congress representing Pacific islands such as Hawaii, Guam, American Samoa, and the U.S. Virgin Islands, are also expressing concern and demanding that the Dept. of Energy request the Japanese and French governments to postpone the shipment until industry provides the information needed to assess the safety problems identified in the Lyman Report.

Although the U.S. Dept. of Energy and the French government have sent us replies acknowledging their receipt of our open letter asking for an environmental impact assessment, the Japanese government has made no comment either on the open letter or the Lyman Report.

Meanwhile British Nuclear Fuels and Cogema have both characterized the Lyman report as 'absurd' and 'dubious', citing an error in the report concerning the actual temperature at which the casks will be transported. But the whole point is that the data necessary to assess the safety of the transport has simply not been made available. If they are to claim that the Lyman report is 'flawed', they should disclose all the data on the glassified waste, and prove the overall safety of its shipment and storage.

PANAMA CAMPAIGN

As mentioned previously, citizens throughout Japan joined in placing a full page statement in the Panamanian newspaper La Prensa on January 6th, warning citizens there about the HLW shipment and asking them to write to their government and the government of Japan to prevent it.

To coincide with the statement, a Japanese delegation of four, Hiroshima bomb victim Suzuko Numata, Rokkasho citizen Kei Shimada, Satomi Oba director of Plutonium Action Hiroshima, and Aileen Mioko Smith of Plutonium Action Network Kyoto travelled to Panama and spent 6 days meeting with citizens opposing the shipment, national legislators, the Panama Canal Commission, and the press.

Press coverage of the trip and this issue was extensive and included three front page lead stories in the mainstream Panamanian papers La Estrella Panama and El Panama America, and a full page article in La Prensa. The papers carried huge photographs of Suzuko Numata showing photographs of the effects of radiation on Hiroshima victims. All articles and editorials were very strongly against the shipment. National television networks and numerous radio stations also carried the news. The people of Panama were deeply moved that Suzuko, a bomb victim would come all the way around the world on crutches and in a wheelchair to warn them about the dangers of radiation.

Citizens in Panama have formed the National Coalition Against the Nuclear Transport and are actively working with national legislators so that Panama can ban such dangerous transports.

The National legislators stated, "If we allow one such shipment, many will follow. We will exert all efforts in order to prevent this transport." The Panama Canal Commission is bound by what is termed a "neutrality treaty" by which all ships meeting international and other required regulations must be allowed to pass. The Legislature is looking into how Panama can ban the shipment in spite of this requirement.

The demonstration on the 10th in front of the Japanese Embassy with 120 participating was organized by the Coalition with numerous other groups. A "die in" was staged with a mock ship with vitrified HLW canisters crashing.

A rock concert in opposition to the shipment drew hundreds of people who gave Suzuko and Kei an ovation when Suzuko said, "You are like my brothers and sisters. I don't want you to suffer from the effects of radiation like us," and Kei, "We try in Rokkasho Village to stop this nuclear fuel cycle. But this is international. We must therefore join hands to stop it."

If a serious leakage were to occur in the Canal, no country in the world would be able to use it for a long time... perhaps decades if not longer.



In front of the Japanese Embassy (Photo by S. Oba)

Hormesis Symposium Held

The Central Research Institute of the Electric Power Industry (CRIEPI) last December held a symposium on the "Health Effects of Low Level Radiation", to reconsider the belief that even low dose radiation is harmful to human bodies, from the point of view of the most recent scientific research and theories. The hall, with a capacity of 500, was filled with people mostly from the electric companies and the nuclear industry. Those who could not get into the hall had to watch the proceedings on a monitor TV set in a separate room.

CRIEPI has been conducting research and animal experiments since 1988 to establish the theory of the Hormesis effect of low dose radiation on human bodies. In 1993 CRIEPI also launched a project to clarify the mechanisms of this hormesis effect together with 14 other research institutes in Japan.

The symposium was to discuss the biological effects of low dose radiation from both the merit and demerit points of view. Tomoko Kusama (Tokyo University), Sohei Kondo (Osaka University), Kiyohiko Sakamoto (Tohoku University), Hiroo Kato (National Institute of Radiological Science), Kenji Ishida (CRIEPI), and Dr. Takagi of Citizens' Nuclear Information Center were invited as panelists.

One of the main topics of the discussion concerned the public acceptance of radiation risks. Ms. Kusama said, "We must arrive at socially acceptable figures by conducting questionnaire surveys of the general public and radiation workers, and also by using the risk analysis method. Among the risk factors of cancers, for instance, radiation

accounts for only a few percent. It is essential to take into consideration all the other risk factors like smoking, and compare them with the radiation risk."

Meanwhile, Dr. Takagi stated, "There are no specialists on the safety issues. Researchers on radiation biology should provide easy-to-understand data to the public and there should be a general debate of the issue in society."

On the relationship between hormesis and radiation protection standards, Ms. Kusama said, "Hormesis research is not yet at a stage where it can be related to radiation protection standards." Mr. Ishikawa added that "the effects of low dose radiation and the radiation protection standards should not be related at the present stage." Dr. Takagi pointed out that the CRIEPI research included no study of the negative effects of hormesis, and emphasized the need for a full scale study of the effects on human cells, such as mutation.

In order to ensure safety from radiation, it is crucial to clarify the mechanisms of cancer generation. The symposium concluded that a cohort group should be established around a nuclear plant site and an epidemiological survey should be conducted.

(Mikiko Watanabe)

Plutonium Inventory '93 Released

Plutonium Surplus Increases Amid Lack of Transparency

In November 1994, JAEC (Japan Atomic Energy Commission) published its white paper for 1994, in which it released the inventory and annual supply & demand of Japan's plutonium as of the end of 1993. The data has aroused renewed concern over Japan's plutonium program, because it indicates that Japan's plutonium inventory already amounts to nearly 11 tons (total plutonium) and particularly because 80 percent of this is considered to be surplus.

This is a 2.5 ton increase from the previous year. Of the 8.8 ton cumulative surplus, as much as 6.2 tons is in Europe, indicating that Japan can not suppress the surplus increase in Europe, because reprocessing in Europe is proceeding according to contracts, even though there is no corresponding demand for the plutonium.

The new inventory data is summarized in Table 1.

Table 1. Japan's Separated Plutonium Inventory (as of end of 1993)

Facility	Amount of Pu total(kg)	Stockpile(s) or in use/ready for use(u)
Reprocessing plant	326	s
as nitrate	288	s
as oxide	38	s
Fuel Fabrication	3,269	s
stored in containers	2,339*	s
in test or process line	790	u
completed fuel	140	u
Reactor site	1,089	u
Joyo	15	u
Monju	637	u
Fugen	12	u
Critical assemblies	425	u
Overseas reprocessor	6,197	s
UK(BNFL)	1,266	s
France(COGEMA)	4,911	s
Total	10,881	8,862(s)+2,019(u)

*This figure includes the 1,508 ton which was carried by Akatsuki-maru from France and remains unused.

When one compares the tables with the table for 1992 (see NIT No.38 pp4-5, Nov./Dec. 1993), several questions arise concerning the consistency and explicability of the data. We met with STA officials in order to clarify the points which were not quite clear to us. Though our discussions cleared up some of these points, the STA answers as a whole were insufficient and rather confusing. The following are our questions and the STA answers along with our brief commentaries.

Q1. Why is it the STA has published the amounts of total plutonium this year whereas you have given only the amounts of fissile plutonium in the past?

A1. We have changed in order to respond to international interests.

Q2. But we need the isotopic ratios of plutonium for each item of the inventory to check its consistency with past data. Are you prepared to make public the isotopic ratios?

A2. No, we cannot do that. But you can get the approximate figures for total plutonium from fissile plutonium by assuming an average reactor grade plutonium isotopic ratio.

Q3. By multiplying 1.4 or so, you mean. But the isotopic ratios for plutonium extracted from GCR spent fuel and in critical assemblies may be much different and these figures remain uncertain in your data release. Do you accept this?

A3. Certainly, but it is not that important.

*Commentary: We think this is important. The STA should make public all the isotopic ratios if they want their plutonium program to be transparent, because without the ratios there will always be a degree of ambiguity about the grade of plutonium.

Q4. We would like to confirm the data for plutonium inventories at reactor sites and critical assemblies, since the way they have been given is misleading. We assume the data for Joyo, Monju and Fugen are for fabricated new fuel yet to be loaded, while the figure for critical assemblies is the amount of plutonium already in use.

A4. Yes you are right. The table is a bit confusing, we admit. But we have included the critical assembly plutonium in the separated plutonium inventory, since it is regarded for practical purposes as new and not consumed.

Q5. According to the STA answer to a written question by Mr. Imamura, member of the House of the Representatives,

COGEMA's UP3 reprocessing plant treated 160 tons of Japanese spent fuel in 1993. But the recovery of Japanese plutonium at UP3 is estimated to have been as much as 2.1 tons in 1993 judging from the difference between the inventories for 1993 (4.911 tons as Pu total) and 1992 (2.00 tons as Pu fissile). This recovery rate is, we believe, too high for a throughput of only 160 tons. How do you explain this?

A5. The "Japanese plutonium inventory at La Hague" as given by COGEMA has nothing to do with the amount of plutonium actually recovered from Japanese spent fuel reprocessed. COGEMA allocates a plutonium inventory to each customer country in proportion to the total amount of spent fuel COGEMA has received from that country, not the amount of that country's spent fuel it has reprocessed.

Q6. That sounds very queer to us, because there is no actual correspondence between the plutonium inventory and the amount of reprocessed fuel.

A6. But that is the way which not only COGEMA but BNFL allocate plutonium to each country. It is stipulated in the reprocessing contracts.

Q7. Has the STA ever confirmed that COGEMA has actually allocated plutonium in proportion to the amount of spent fuel Japanese utilities have sent to France?

A7. No, we have no means of confirmation.

Q8. Are the wastes to be returned from France and the U.K. also allocated in that way?

A8. Yes.

*Commentary: The above Q & A shows that nobody knows exactly how much Japanese plutonium has been recovered and how much waste has been generated actually from reprocessing Japanese spent fuel in France and the U.K.. Japan has to receive waste as allocated by COGEMA and BNFL. The waste shipment now seems all the more controversial due to this lack of transparency.

Aging Nuclear Power Plants

At Japan's nuclear power plants a number of serious problems have become evident with the advance of aging. Of particular concern during the last few years are vessel head penetration cracking (VHPC) in PWRs, and damage to the core shrouds of BWRs. The control rods in PWRs are designed to enter from the top of the pressure vessel, and VHPC describes the cracks that form in the sleeves through which the control rods pass. Since 1991, when the first such cracks were discovered in France's Bugey-3, they have been found at plants in Sweden, Belgium, Switzerland, Spain, and recently even in the US, at a total of nearly 30 locations.

The cracks found in reactors in France and other places form near sleeve welds and run vertically, or along the length of the sleeves. Coolant leaks as the cracks grow, and the situation could lead to a meltdown. In Sweden they have discovered cracks that are horizontal, or that run around the sleeve's circumference. In the worst case, a broken sleeve allows its control rod to stick out, which presents the danger of a runaway reactor.

On September 6 Kansai Electric announced that it will replace the covers of pressure vessels at Mihama 3, and at Takahama 1 and 2. The danger of VHPCs is the reason for the replacements. While VHPCs at Japanese plants have yet to be reported, problems in the inspection techniques mean that it is not an impossibility. It is thought that VHPCs occur more readily in reactors with high cover temperatures, which is basically a problem shared by PWRs.

At BWRs there have been accidents

involving the formation of cracks in the core shrouds, stainless steel cylinders that enclose the cores. Cracks have been found in 15 of the approximately 100 BWRs throughout the world, and almost all of those 15 are older reactors that began operating in the 1970s.

Cracks have also been found in the shroud at Fukushima I-2 in Japan. According to information released by Tokyo Electric on June 29, cracks were found running almost completely around the weld on the shroud's top.

Conceivable accidents include feed water system problems, or a shroud collapse induced by an earthquake. There is a significant possibility that if a shroud collapsed due to cracks in its top, this would lead to breakage of the main steam piping or destruction of fuel elements. BWRs are built so that the control rods enter from underneath the reactor pressure vessel, so it is conceivable that if cracks formed in a vessel's bottom, the collapse of the shroud would block the control rods' paths and prevent them from moving smoothly into place, thus making it totally impossible to control the reactor.

The electric utilities' basic stance on this problem appears to be that they have no hope of stopping the advance of such cracks, and that even if the cracks grow large, the utilities will somehow prevent at least shroud collapse. One way they are doing this is to install metal fasteners on a shroud's damaged portion from the outside. One problem with this is that it has never been demonstrated to work, and the other is the new danger created by installing such metal fittings. In whatever case, it is a very haphazard solution.

NEWS WATCH

Kobe Quake Proves Safety Is Not Assured

The catastrophic Hanshin Earthquake hit the Kobe area, causing huge damage, in the early morning of January 17. More than 5,000 people were killed, and about 100 were still missing as of January 24. More than 300,000 are still being housed in schools and other public buildings without any water or gas supply. The damage turned the area into a war-zone and revealed Japan's total lack of preparedness for a disaster on such a scale.

The utility companies have announced that none of Japan's nuclear plants were affected by the quake, and that they all continued operating non-stop. But now that Japan's myth of safety has been totally exploded, we can no longer be sure of any of the safety measures they may be equipped with. The total chaos shown by what resulted from the Hanshin Earthquake makes one wonder what would happen if such a quake occurred right under or very close to a nuclear plant, or while nuclear materials were being transported by truck on the highways.

833,000 Signatures Against Monju Submitted

This February the fast breeder reactor "Monju" (280MW) is set to begin

test operation at 40 percent output. Plans call for the station to subsequently connect to the grid and continue testing while gradually increasing its output.

On December 5 of last year, the signatures of 833,000 people demanding a freeze on Monju's operation were delivered to Science and Technology Minister Tanaka. The signatures had been gathered throughout Japan during an eight-month period.

Director General Tanaka, who was surprised by the large number of signatures, listened earnestly to the 12 people who submitted the petition, and said, "I take very seriously the anxiety of each petition signer." However, she did not reply directly to the demand for a freeze.

Construction of RETF Begins

Construction of the controversial Recycle Equipment Test facility (RETF) for reprocessing fast breeder reactor fuel began on January 12 at a site adjoining the reprocessing plant operated by the Power Reactor and Nuclear Fuel Development Corporation (PNC) at Tokaimura in Ibaraki Prefecture. This is the facility where Sensitive Nuclear Technology (SNT) is suspected of having been transferred from U.S. by the Greenpeace Report, "The Unlawful Plutonium Alliance." The DOE, after investigating the case for nearly four months, conclud-

ed that "technology exports to Japan were permissible exercises of its statutory authorities" at the end of December.

The annual reprocessing capacity will be a maximum 1.3 tons HM when only core fuel is reprocessed, and, when both core and blanket fuel are reprocessed, 1 ton HM for core fuel and 5 tons HM for blanket fuel.

Instead of having the RETF recover the uranium/plutonium mixed oxides that are the product, the design calls for sending the nitrate solution to an existing reprocessing plant and performing recovery there. The total construction cost will come to ¥120 billion. If all goes according to plan, hot testing will begin in mid-2000.

Ikata 3 Begins Operation

Shikoku Electric's Ikata 3 (PWR, 890 MW) began commercial operation on December 15. This raised the number of operating nuclear reactors in Japan - including the advanced thermal reactor Fugen - to 49, and the total nuclear output to 40,531 MW.

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NUKE INFO TOKYO is a bi-monthly newsletter which aims to provide foreign friends with up-to-date information on the Japanese nuclear industry, as well as on the movements against this industry in Japan. Please write to us for a subscription (subscription rate: supporting subscriber \$50/year or ¥5,000/year, subscriber \$30/year or ¥3,000/year). The subscription fee should be remitted from a post office to our post office account No:00160-0-185799, HANGENPATU-NEWS by postal money order. We would also appreciate receiving information and newsletters from groups abroad in exchange for this newsletter.

Nuclear Waste Site in South Korea

After years of violent protest by residents of several proposed dump sites, the South Korean government announced on December 22 that it had selected a small island as a site for spent nuclear waste storage and low-level waste disposal. The island, named Kurop-do, is located about 80 km south west of Seoul in the West Sea.

The government has repeatedly stated that a radioactive waste complex would need to occupy at least a 5 million sq. meter site, and would consist of a storage facility, R&D facilities, and accommodation for researchers and their families. Kurop Island is just 1.7 million sq. meters in area. Even officials at the Radioactive Waste Management & Planning Mission have raised guarded objections to Kurop Island as a site for a nuclear complex. Strong opposition from residents is increasing, and demonstrations against the plan have been taking place every day.

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