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HLW TRANSPORT -- Series No.9

Pacific Pintail Arrived Amid Protest

(Photos by Kei Shimada)

IN THIS ISSUE

On April 25 the Pacific Pintail, a vessel carrying 28 canisters of vitrified high-level waste (HLW), appeared at the port of Mutsu-Ogawara in Rokkasho-mura Aomori Prefecture. However, the vessel was forced to languish offshore since Aomori Governor, Morio Kimura, refused to grant permission to dock at the port. At present, the plan for a waste facility in Rokkasho is only a tentative one and after 30 to 50 years HLW is supposed to be stored at the final repository elsewhere, but nothing has been made clear yet.

Kimura had been demanding the Japanese Government give Aomori Prefecture a clear pledge that the Rokkasho facility would never be the final repository. The Government had told him that making such a pledge was impossible. Which why Kimura refused to grant permission.

The trouble at the port high lighted once again to the public the difficulty regarding the HLW issue. It also alarmed the Japanese Government and Science & Technology Agency (STA) , and they quickly produced a document, saying "the STA will not make Rokkasho the site for permanent storage of nuclear waste without an agreement from the governor". Kimura accepted it and finally gave permission to dock, but the actual unloading only started the next day.

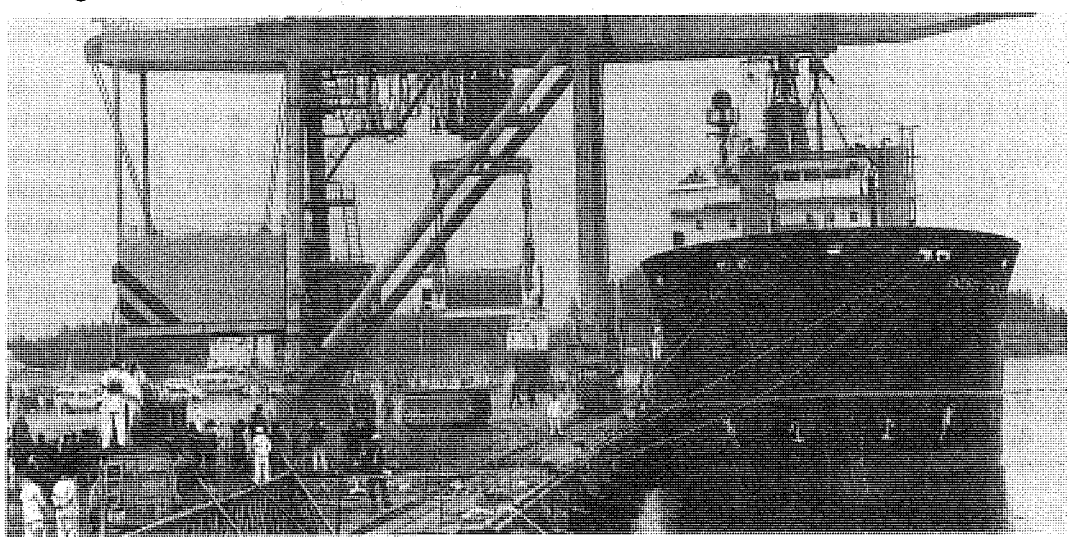
On top of the document submitted by STA, ten utility companies also sent Kimura a document, saying "they will assure never to make Aomori Prefecture a final repository for HLW". However, these documents were aimed at calming the situation so that unloading could take place.

The current Long Term Nuclear Energy Program only states that "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 2030-2040". Nothing has been decided as to who would be dealing with HLW, or where or how. Neither the STA, nor Federation of Electric Power Companies (FEPCO), nor any of the utility companies is the body responsible for the final disposal. It means there is no governmental or corporate body whatever in Japan to "assure" the safety of HLW in the future. The assurances that the Government or the utility companies have made actually mean nothing.

Even if the Governor of Aomori was satisfied with it, most of the citizens in Aomori are still very much concerned about the issue and fear that the facility in Rokkasho would end up becoming the final repository.

Unloading began on April 26, the same day as the world's worst nuclear accident ever happened in Chernobyl nine years ago. It was a cold, rainy day and the rain hitting the hot cask evaporated, creating a huge cloud of steam. At the port people from all over Japan tried to protest against the whole operation, but police officers kept them away from the site.

The amount of HLW transported this time is only less than 1% of the total waste scheduled to be sent back in the future. In addition, low and intermediate level waste is also scheduled to be transported back to Japan. The details of the future shipments have not been made public so far, however, arousing further concerns widely among Aomori citizens.



WISE-Paris Radwaste Report Published

SEVERAL HUNDRED SHIPMENT EXPECTED TO TAKE PLACE FROM FRANCE TO JAPAN

In view of the situation that little information on the reprocessing waste to be returned to Japan from Europe has been made public officially, the Citizens' Nuclear Information Center commissioned WISE-Paris a study on the amount and nature of various reprocessing waste to be returned to Japan from France. The report entitled COGEMA-LA HAGUE: THE WASTE PRODUCTION TECHNIQUES with special emphasis on the study of Japanese reprocessing wastes was released in Tokyo by CNIC on March 31, just four weeks before the arrival of the first HLW carrier Pacific Pintail.

The findings of the report are really astonishing, particularly as the waste to be returned from France is estimated to be 2.6 times as much as officially announced by the French reprocessor COGEMA. This corresponds to an estimated number of shipments ranging from 120 to as much as 1,200 excluding the plutonium shipments of unknown number.

The main findings of the report are:

(1) The nuclear waste to be returned to Japan according to the reprocessing contract is estimated to be 44,500 m^3. This corresponds to 1,200 shipments if one transport cask is loaded in a ship as in the case of the Pacific Pintail and to 120 shipment if one assumes 10 casks can be transported on board the average ship.

(2) The radioactive nuclides now emitted during the reprocessing of Japanese spent fuel essentially belong to Japan. The discharge is not an inevitable process and could be packed into solid waste forms to be returned to Japan. In addition, portions of nuclear wastes resulting from the decommissioning of reprocessing facilities should be regarded as Japanese waste. If these "virtual" and decommissioning wastes are included, the total amount of Japanese wastes generated in France will be about 245,000 m^3, more than 80 % of which is to remain in France under the present contracts.

(3) The quality control procedure of the vitrified high level waste is extremely dubious. The only reliable method of inspection of the vitrified glass is to conduct destructive testing, but COGEMA has conducted the testing on only three samples from the total of 3,000 glass logs it has produced. Neither the utility companies nor the safety authorities of the customer countries are allowed to inspect the HLW production process. The auditing of the production process is performed by only one private company called Bureau Veritas, whose credibility has been much eroded recently, posing serious questions about the safety of the transport and storage of the waste.

(4) While COGEMA's estimate of the total waste volume per ton of fuel is 6.6m^3, WISE's estimation is as much as 17.2m^3, which is 2.6 times as much as COGEMA's figure but is more realistic and reasonable because it takes into account the volume of overpack. The corresponding waste volume for direct disposal of spent fuel is only 2.7m^3. The waste figures with the "virtual" and decommissioning waste included are respectively 53 and 85 m^3. The waste volume for direct disposal of spent fuel is estimated to be 9.7m^3 with the facility decommissioning waste included. The above comparison clearly shows the disadvantage of reprocessing from the view point of waste management.

※A full copy of the 132-paged report is available from CNIC for $40.

NGO Played Momentous Roles at NPT Review Conference

Yurika Ayukawa

The NPT Review & Extension Conference took place at New York's United Nations from the 17th April. After four weeks of discussion, indefinite extension of the Treaty was adopted unanimously without any voting or agreement on a consensus.

Minutes after these resolutions were adopted, representatives of non-nuclear states started making speeches claiming that they are not necessarily supporting the indefinite extension of the treaty. The intention was to place on record their interpretations and concerns on the decision. The frustration of the non-nuclear states, especially the non-aligned states was that the extension decision was forced on all parties of the Treaty by the nuclear weapon states, without any binding commitments for the nuclear weapon states to take disarmament measures.

The final resolution was originally meant to be decided by a vote, but the mode of voting (secret, open or written) was never decided, and finally President Dhanapala of the NPT Conference took the decision to adopt the resolutions unanimously without any kind of voting, to avoid substantial open opposition from non-nuclear states.

More than 200 NGOs gathered in New York from around the world immediately issued a statement of protest. Named, the 'NGO Nuclear Abolition Caucus', claimed, "Our motto is 'abolition 2000, not abolition 3000'. We're calling on governments to initiate negotiations this year on a global treaty to eliminate nuclear weapons".

The NGO Abolition Caucus was organized at the beginning of the Conference as numerous NGOs gathered from all over the world to monitor the Conference. Meetings were held every morning at 8 am, and all those who attended became members. The Caucus gathered signatures for a petition demanding a secret ballot, monitored the on-going Conference and committees, worked on governments to vote against indefinite extension, and drafted a statement calling for immediate negotiations on an International Convention on Abolition of Nuclear Weapons.

The statement was released on the 25th of April, which clearly stated "As chemical and biological weapons are prohibited, so must nuclear weapons be prohibited". The statement was a new initiative for a total nuclear weapons free world, gaining support from over 200 organizations throughout the world. They include International Physicians for the Prevention of Nuclear War, International Peace Bureau, Economists for Arms Reduction, International Network of Scientists and Engineers, International Association of Lawyers Against Nuclear Arms, and ourself CNIC, etc. representing over 10 million people.

The statement also underlined the "inextricable link between the 'peaceful' and warlike uses of nuclear technologies", which is the very contradiction of the NPT. "The spread of nuclear power promised by the NPT provides the materials and infrastructure for the spread of nuclear weapons."

Now that the governments have proved too incompetent to play decisive roles in creating a world free of nuclear weapons, it is time for the NGOs to take on the task. NGOs, who 'invaded the UN' as was reported by AP, played a very active role and their participation was highly appreciated by the delegates. President Dhanapala said, NGO "input was extremely valuable." Abdul Minty of South Africa said, "States are no longer the only actors on the international stage". The canadian Ambassador said, "We thank the NGOs who tried to keep us honest." (All from Disarmament Times). As President Dhanapala proposed for the future that meetings be held for NGOs to make statements at the PrepComs and Review Conferences, the role of the NGOs are likely to become more important and essential than ever. The next page is the statement we delivered at the U.N.

A Total Nuclear Ban rather than Nuclear "Non-Proliferation"

April 17, 1995, CNIC

The discussion surrounding the Nuclear Non-Proliferation Treaty is mainly on whether to extend this treaty indefinitely or for a limited period of time. But we should realize that neither option would be really effective to prevent proliferation. We believe that a total abolition of all nuclear weapons, rather than preventing proliferation, is now a realistic and the most effective way to achieve world peace.

Now the Cold War is over, and even the nuclear giants have approved of dismantling nuclear weapons. But still, they want to keep the military superiority and security with some nuclear bombs. However, there is no security with "some nuclear bombs". Whether the number of nuclear bombs is 3000 or 300, nuclear arms race would be induced as a counter strategy, and would lead to further nuclear proliferation.

The only way to prevent proliferation and achieve peace is to lead the world to abolish all nuclear bombs. A "zero option" is the most realistic and probable option to pursue. Comprehensive Test Ban Treaty, Deep Cut-Off Treaty of Nuclear Weapons and Weapons Usable Material, and No First Use Treaty are actually being negotiated among the nuclear states. Nuclear weapons should be treated in the same way as the biological and chemical weapons and should be totally banned.

Already, the world is more threatened than ever by the proliferation probabilities among the NPT parties, and the draining of nuclear materials from nuclear arsenals. The issue at the moment is the nuclear export from Russia to Iran, and the excessive nuclear development plans of China including construction of a large-scale reprocessing plant is also a grave concern. Except for the non-NPT parties such as Pakistan, Israel, etc., the other suspected countries are under IAEA and NPT control, and their activities are justified under Article 4 of the NPT which promotes "peaceful use" of nuclear energy.

This clearly indicates the contradiction of NPT. On one hand, it tries to regulate nuclear development for military use, but on the other promotes nuclear development for peaceful use. But as a matter of fact, demarcating military use from peaceful use is virtually impossible, especially in the field of plutonium utilization. In other words, by pursuing peaceful use, you can get unlimitedly close to military application legitimately. And there is no way to prevent this by NPT.

In this aspect, nuclear-free zones are not effective if they do not include peaceful use of nuclear as well as military. Especially in Asia, where nuclear development is ambitiously pursued, the so-called ASIATOM concept would only contribute to nuclear proliferation even within the framework of NPT.

We clearly declare that Japan, which experienced disasters of Hiroshima and Nagasaki, should take the initiative worldwide towards a nuclear-free world by proposing a total ban of all nuclear weapons and nuclear weapons materials.

An Earthquake Would Lead To Reactor Power Excursion

Hiroo KOMURA, Shizuoka University

It is easy to suppose an earthquake causes cracks on important reactor components or pipes, or reactor building walls. But there is another important point for the boiling water reactors (BWRs). Two years ago Onagawa 1 reactor was automatically stopped by an earthquake.

All the reactors are equipped with a seismometer and when an earthquake is detected, the reactors are designed to shut down automatically by a scram signal. However, under certain earthquake conditions, the reactor is not stopped by the scram. The setting of the monitor is rather insensitive because if it is set to too sensitive a level, the reactor's operation will be inconvenienced by frequent shut downs. In the case of the Onagawa 1 incident the seismometer had been set to 200 gals while the real acceleration was around 120 gals. The seismometer did not generate a scram signal.

In BWRs light water is used as a moderator. Water lowers the neutron velocity so that uranium can readily capture neutrons for the chain reaction. Usually the reactor is filled with enormous amount empty space, that is to say, bubbles, and these bubbles do not serve as a moderator like liquid water and the nuclear reaction is suppressed automatically. During the quake these bubbles, that were stuck to the fuel rods, were shaken loose and rose up out of the reactor core. Consequently the nuclear reaction increases. In case of the Onagawa 1 incident, the neutron flux rose above 118 percent of the rated value. At that level the system is designed to generate a scram signal to avoid a crisis. The rise of the neutron flux to this level meant the reactor had a near-runaway power overload. The scram signal was triggered at 118% but this does not mean the actual value of neutron flux was restricted to that level. It only means the scram signal was generated at that level. The actual neutron level could have reach 400% or even 1000%. It is worth adding that this was not the first time such an accident happened. Similar incidents have occurred at three other reactors, Fukushima I-1, 3, and 5 in April 1987. Fortunately, in every case the scram was successfully completed. But it is unwise to assume such a crisis will always end so fortuitously.

There are some emergencies that would fail to trigger a scram signal at a BWR. Last year significant cracks were found on the core shrouds of many BWRs in United States. Later they were also found in Fukushima I-2. This big cylinder (shroud) surrounds a reactor core and regulates the coolant flow inside. Cracks were identified on the welded parts of the shroud and were fairly long and deep. If the shroud collapsed to the bottom of the pressure vessel, a lateral water flow would be generated and this flow would disturb the insertion of the control rods in an emergency situation. This is a major concern of the Nuclear Regulatory Commission of the United States.

Japan is well-known as a country where huge earthquakes occur regularly. There are many areas called intensive observation areas or specific areas. The former is a zone where earthquakes of magnitude 8 are anticipated to occur and the latter of magnitude 7. Most of nuclear power stations are located in or close to these dangerous zones. Hamaoka nuclear power station is situated in the center of the seismic source area of the anticipated Tokai Earthquake. Big earthquakes of magnitude 8 have occurred about every 120 years in this district and 140 years have passed since the last earthquake in 1854.

DATA Significant Incidents at Nuclear Plants

(January to June 1994)

Date	Plant	Short description of event (18 incidents per six months)
Jan. 10	PNC Oarai	Worker exposed to high dose to hand during maintenance work at Irradiated Material Test Facility.
Jan. 22	Oi 3	Power drop due to closing of main steam stop valve caused by control circuit substrate failure.
Jan. 24	NFI, Tokai	Burn of worker due to nitric acid at waste liquid processing room of HTTR fuel production facility.
Feb. 7	Rokkasho Enrichment Plant	Compressor recovering depleted uranium failed due to malfunction of instrumentation and control device, forcing entire plant to shut down.
Feb. 18	Mihama 1	Reactor manually stopped due to leak of radioactive coolant into secondary coolant circuit (caused by hole in steam generator tube).
Feb. 27	Fukushima I-6	Reactor manually stopped due to cooling hydrogen leak at generator.
Mar. 17	Fukushima I-5	Reactor manually stopped due to radioactive leak of fuel rod.
Mar. 31	JMTR	Reactor scrammed due to voltage drop in house diesel generator.
Apr. 12	Tsuruga 1	Steam leak from high pressure turbine casing junction found during conditioning operation at 180 MW; reactor manually stopped.
Apr. 19	Mihama 3	Malfunction of main feed water control valve found during turbine valve stem free test;reactor manually stopped.
Apr. 20	Tokai Repro. Plant	Two workers exposed to plutonium at plutonium conversion technology development facility.
Apr. 22	Ikata 1	Steam generator tube damage found during periodic inspection.
Apr. 26	Oi 2	Steam generator tube damage found during periodic inspection.
May 8	Tokai Repro. Plant	Compressor stopped due to power failure caused by lightning.
May 17	Oi 4	Crack found in emergency generator vent tube during conditioning operation.
May 29	Fukushima II-3	Anomaly of recirculation flow rate caused by jet pump beam damage, reactor manually stopped.
Jun. 7	Oi 4	Steam leak from emergency diesel generator piping during conditioning operation.
Jun. 29	Fukushima I-2	Large crack found at weld of mid-core shroud ring during periodic inspection.

SAVE ORCHID ISLAND !

-An Appeal from Taiwan-

Join the Yami People to Stop Further Expansions of Nuclear Dumps. Since Taipower (the state-owned Taiwan Power Co.) began its commercial operation of nuclear power plants 20 years ago, the government has never seriously confronted the thorny issues of nuclear waste disposal. To this date, there has been no concrete short- or long-term disposal plans for spent fuels. Presently, Taipower has dumped all other nuclear wastes onto the beautiful isle, Orchid Island, home to the 3,000 Yami indigenous people.

The secret plan to deposit the low and medium levels of nuclear wastes on Orchid Island began in 1972 by telling the indigenous people that the government was constructing a fish cannery for the benefits of the inhabitants. Dumpings began in 1982 amid the protests, and the largest protest by the Yami people and Taiwanese erupted in 1987. In spite of the continuous protests taking place every year since, Taipower has continued its policy of dumping the waste on the island's fragile ecosystem. Today Orchid Island is a dumping ground of 89,000 barrels of nuclear wastes, their weights totalled 37,600 tons. Since then the livelihood of the 3,000 Yami people has been in shambles and their unique culture has been ruthlessly trampled. To appease the Yami people in 1993 as "the year of the indigenous people" world-wide, declared by the UN, the government agreeed to stopfurther construction of waste disposal sites on the island and plans wereoffered to withdraw all the waste elsewhere in the near future. The government further promised the Yami tribe that they would be consulted ifthere was any change of the plan. The Yami tribe accepted the government'soffer, and stopped further protests.

It turned out to be a conspiracy. In early May 1995, Taipower began its expansion plan of six more waste dumps on the island by declaring that the plan was a "national security" project, i.e., the plan did not required any consultation with the local government or the affected tribe. The frustrated Yami people are now planning their biggest protest!

Unfortunately as usual, the Yami tribe is a minority lacking of political power, material and financial resources to fight off this uphill battle for their homeland, basic existence and dignity. They urgently need our help world-wide.

Please make sure that you do something to help by registering your concern and request that any further construction of wastes dumps be stopped on the island to:

1. President Lee Teng-Hweh
   President Building
2. Premier Lien Zhang
   Executive Building
3. Chairman Hsu Yi-Yun
   Atomic Energy Council
4. Chairman Chang Chung-Chien
   Taipower
5. Speaker Liu Sung-Feng
   Legislative Branch

For more information, please contact; The Anti-Nuclear Coalition for Taiwan, Edgar Lin, Pi-Yao Lin, Box 849, Tunghai University, Taichung, Taiwan 407

NEWS WATCH

CHINA'S N-PLANT SHUTDOWN

China's Daya Bay (Guang-dong) 1 reactor (PWR, 900 MW) has been shut down indefinitely. In a control rod insertion test conducted in March, the rods could not be inserted in the requisite two seconds, so all of them were replaced, but it appears that problems remain. The unit 2 reactor (BWR, 900 MW) has also been shut down for fuel replacement, so the station is totally out of operation for the time being.

MONJU RESTARTED, BUT STOPPED AGAIN

The prototype fast breeder reactor Monju (280 MW, located in Tsuruga City, Fukui Prefecture) attained criticality again on May 8, but was stopped automatically after 2 weeks. On February 17 Monju began a test for increasing the reactor's thermal power while sending the generated steam through a bypass to the condenser instead of to the generators' turbines. But on February 21, when operators were raising the power from 2 to 10 percent, the steam pressure at the flash tank's outlet fell. By March 15 the reactor was shut down, and the flash tank, whose design was said to be faulty, was replaced. Though the test restarted and operators increased the thermal output from 10 to 20%, the secondary main coolant circulation pump stopped, and the reactor shut down automatically.

REFERENDA TO STOP N-PLANT CONSTRUCTION

On March 24 the town council of Nanto-cho in Mie Prefecture passed an ordinance stipulating that referenda are also necessary to carry out advance environmental surveys for nuclear power station construction. In view of the instances heretofore, in which carrying out a survey always led to construction, this ordinance is meant to put the brakes on surveys as well. What is more, the council revised another ordinance pertaining to the consent for the construction of a nuclear power station: whereas before this ordinance on referenda to determine whether to build a nuclear power station called for at least half of the votes to be opposed, they must now comprise at least one-third. The Chubu Electric Power Co. is planning to build the Ashihama Nuclear Power Station (two 1,350 MW BWRs) in Nanto-cho, but these ordinances have created yet more formidable obstacles for Chubu to surmount.

ANTI-NUKE CANDIDATES WON AROUND JAPAN

In the April elections of the heads, councils and assemblies of many prefectures and municipalities through-out Japan, the anti-nuclear candidates fought well. Particularly, in Kushima City, Miyazaki Prefecture and in Maki-machi, Niigata Prefecture. In Kushima all of anti-nuclear candidates won the election, and the anti-nuclear faction numbered half of

the council members at a stroke. Kyushu Electric Power Co.'s plan to construct 4 N-plants (1350MW) surfaced in 1992. The new plan is the first in ten years for the Japanese utility companies.

In Maki-machi the anti-nuclear faction took the majority of the council seats for the first time.

For the Maki nuclear plant(BWR, 825MW), which the Tohoku Electric Power Co. plans to construct, the government's safety review began 13 years ago, but land for the site was difficult to obtain, and the review work had been suspended. The town mayor in February this year proposed that the council sell some town owned land to Tohoku Electric. But an additional council meeting scheduled for February 20th to discuss the matter was canceled due to the strong protests of the local opposition who thronged the council hall. The view that the opinions of the people should be heard had been growing in the town, and an autonomous referendum of the towns people took place from January 22 to February 5. More than 45 percent of the people voted in spite of obstructions by the mayor and other pro-nuclear council members. Among the voters only 5 percent were in favor of the plan, while an over-whelming 95 percent were against it.

※ CORRECTION ※ The writer of the article "Petitions Brings Gov't Nuclear Policy to a Deadlock" in the previous issue was **Miwako Ogiso**. We sencerely apologize for the incovinience.

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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. (In the case of sending the subscription fee from abroad, please send them by international postal money order.)

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