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Citizens' Nuclear Information Center

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Japan's Plutonium Policy MITI's Committee Gives Go-Ahead to MOX Program?

Table Japan's Separated Plutonium Inventory (as of the end of 1995)

Facility	Amount of Pu (kg total Pu)	Stockpile(s) or in use / ready for use(u)
Reprocessing plant	753	
As nitrate	597	s
Stored as oxide	156	s
Fuel Fabrication plant	3,146	
Stored as oxide	1,980	s
Under test or processing	985	u
Completed fuel	181	s
Reactor sites	823	
Joyo	31	u
Monju*	367	s
Fugen	0	u
Critical assemblies	425	u
Overseas reprocessors	11,377	
U.K. (BNFL)	1,418	s
France (COGEMA)	9,960	s
Total	16,099	14,659(s) + 1,441(u)

*All the completed fresh fuel for Monju is regarded here as stockpile because restart of the reactor is uncertain.

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ON 20 January, the Nuclear Energy Sub Committee of the Advisory Committee for Energy to the Ministry of International Trade and Industry (MITI) issued an interim report. It is generally believed to present MITI's unchanging position on nuke energy in the light of prevailing public distrust of government policy since the Monju accident.

In the report, MITI stressed the necessity of implementing MOX use in light water reactors to cope with the stalled FBR program and the accumulating plutonium surplus. The surplus now amounts to nearly 15 tons

as of the end of 1995 as made public by the Atomic Energy Commission of Japan (AECJ) in December 1996.

MITI's report can be regarded as the official response to the distrust and concerns raised nationwide and particularly intensely by local residents living near nuclear facilities, but the contents of the report are nothing more than a repetition of the old pro-plutonium government policy in a slightly softened tone but with much the same bureaucratic expressions.

There were some objections against the report even among the Subcommittee members, but the last meeting on January 20 was highhandedly finished by the chairman, who said: "The time for discussion is coming to an end and I think we must reach now consensus."

This kind of complacency could never be accepted by the public. A detailed report and CNIC's position will be presented in our next issue.

(by Jinzaburo Takagi)

Japan's Plutonium Policy

Report on the 7th Nuclear Free and Independent Pacific Conference

From 9 to 13 December 1996, I attended the 7th Nuclear Free and Independent Pacific Conference held at the University of the South Pacific in Suva, Fiji. These conferences are held every three years to bring together representatives of NGOs from all over the Pacific Ocean. They are held under the auspices of a secretariat called the Pacific Concerns Resource Center (PCRC).

The conferences, started in 1975, were intended to identify common ground among the many organizations that were, and still are, campaigning against the massive nuclear presence in the Pacific region, the testing of nuclear weapons conducted by France last year being one example. Since its inception the themes addressed by the conferences have broadened. The many topics discussed at the 7th conference were subsumed under five themes; Environment, Land Rights and Sovereignty, Demilitarization, Decolonization and Economic Development. Despite this broadening, nuclear issues are still a very important *raison d'être* of the conferences.

The dominant topic of discussion at the conference was the independence movement. Over the course of the seven conferences it has become apparent that the campaign for a nuclear free Pacific is inextricably linked to the campaign for a truly independent Pacific. As long as some of the Pacific nations do not have full autonomy, the Pacific as a whole can never be nuclear free, as that decision ultimately rests in the hands of the nuclear club, countries like France and America which control territory in the region. When all the nations of the Pacific are independent then

they will be able to decide their own future, a nuclear free future. Another important topic of the conference was native rights and native land rights; the struggle by native peoples to obtain redress for past abuses, and restitution of land titles taken during colonial times. Again, independence was considered to be a vital step in achieving those ends.

On the third day of the conference I presented a paper and gave a speech entitled "The International Transportation of Japanese Nuclear Materials." The paper was a general overview of the problems that have arisen as a result of Japan's spent fuel reprocessing policy. It was well received and a resolution of opposition was quickly adopted by the conference. (See resolution on next page.)

There were other important nuclear issues raised during the conference. Representatives from French Polynesia spoke on the effects of French testing on the thousands of local workers who were employed at the test sites. They explained the efforts being made to gain access to the workers' medical records as part of their campaign to receive compensation for the damage to their health caused by the testing. They also talked about their campaign for an independent assessment of the effects of French weapons testing on the environment.

The revival of a proposal by the Marshall Islands government to offer their territory as the site of a spent fuel storage facility was also raised by a number of parties at the conference. A similar proposal, made by Japanese nuclear promoters, to develop an intra-Asian spent fuel/waste facility was also

considered a cause for concern.

The last nuclear related issue raised at the conference was the South Pacific Nuclear Free Zone Treaty, commonly called the Rarotonga Treaty after the Cook Islands capital where it was signed in 1985. On 25 March 1996, all three Western nuclear weapons states signed the treaty. In light of this and the end of the Cold War, the conference voted in favor of a campaign for the treaty to be reviewed. Felt to be of particular concern was the need to extend the

area of the treaty to the North Pacific to include Micronesia, and especially the Marshall Islands. Further, strengthening of the treaty's anti-dumping provisions to ensure that it will be impossible to use the islands as spent fuel/waste storage site was also felt to be necessary. At present the treaty only prohibits sea dumping.

After long and careful deliberation, review, criticism and redrafting, the conference adopted strong resolutions on all these issues.
(by Harry Sigerson)

RESOLUTION
ON
THE TRANSPORTATION OF SPENT NUCLEAR FUEL, PLUTONIUM
AND HIGHLY RADIOACTIVE WASTE

Ref: WS/NFIP7/TSNF

The 7th Nuclear Free and Independent Pacific Conference condemns the government of Japan for its unnecessary transportation of plutonium and its resultant radioactive waste, through the South Pacific, to and from France and Britain. The Conference calls for Japan to immediately end the transportation of any of its radioactive waste around the world, including the imminent shipment of forty canisters of highly radioactive waste from La Hague, France.

The Conference condemns Japan for endangering the nations of the world and especially those of the Pacific by conducting these shipments. It condemns Japan for doing so without the approval of the nations and peoples of the Pacific.

Should Japan choose to continue these shipments, the Conference calls for Japan to;

State clearly that it will take full responsibility and will be completely liable for the consequences of any accidents that befall the shipments.

Conduct the necessary environmental assessments for the imminent shipment and all those to follow, and release them with adequate time for public scrutiny.

Release for public review and revision any emergency plans it has prepared in the eventuality of an accident and to greatly improve the standards of the safety measures taken for the shipments to truly reflect the realities of accidents at sea.

Disclose the exact schedule for the imminent shipment of waste and all its future shipments of nuclear materials and state clearly before any future shipments what arrangements have been made for emergency ports of call en route.

Lastly the Conference asks all its participants to lobby their respective governments to take up this issue with the governments of Japan and France and condemn the imminent shipment of highly radioactive waste on the grounds given above and demanding that it be immediately canceled.

Japan's Plutonium Policy

Second Transportation of VHLW Goes Forward

On 13 January, the second marine transport of vitrified high level waste (VHLW) to Japan from France got underway. For this shipment, 40 canisters of VHLW are being transported by the cargo ship "Pacific Teal" using two TN28VT casks, the same type of cask used in the first shipment in '95.

Apparently, the ship is due to arrive in Japan during March via the Cape of Good Hope (South Africa). According to the official transportation document, the concentration of radionuclides in these 40 canisters is about 40% higher in alpha radiation and about 20% higher in non-alpha radiation than the '95 shipment. Further, the highest amount of generated heat from the canisters is about 20% higher than the previous shipment.

There were no improvements in safety measures for this transportation, including the question of safety of VHLW made by COGEMA of France, especially regarding the sensitization of canisters and the possible corrosion of canisters for that reason. One of the 28 canisters of VHLW which were transported last time was discovered to have surface cesium contamination. This contamination may indicate a very large possibility of leakage from inside of the canister. However, the Science and Technology Agency (STA) and the Federation of Electric Power Companies (FEPCO) have failed to pinpoint the cause of this incident. This second shipment of highly toxic VHLW is now being carried out without confirmation of the safety of the canisters used. The first protective wall between the high level radiation and the environment is the canister, and its durability and safety are critical for the two-month long marine transport and subsequent several decades of storage on land. The STA and FEPCO should therefore insist that COGEMA make changes in the material of the canister.

Information about the previous transportation was not made sufficiently available to the public, resulting in worldwide censure. This time, FEPCO has decided to release the date of departure, the name of the cargo ship, the port of departure 1 or 2 days beforehand, the route and the date of arrival in Japanese territorial waters 1 day after departure, and the date of arrival at Mutsu-Gawara Port 1 week

before arrival. However, this kind of information release gives nowhere near enough time for the many countries along the transportation route to take safety measures. It cannot really be called an "information release."

The first shipment in '95 used the Cape Horn route around South America. This time, however, the Cape of Good Hope route, if you remember the route of the Akatsuki-Maru carrying plutonium to Japan in '93, has been selected. Both the South American and South African routes have been condemned from the safety point of view by not only the countries along the routes but worldwide.

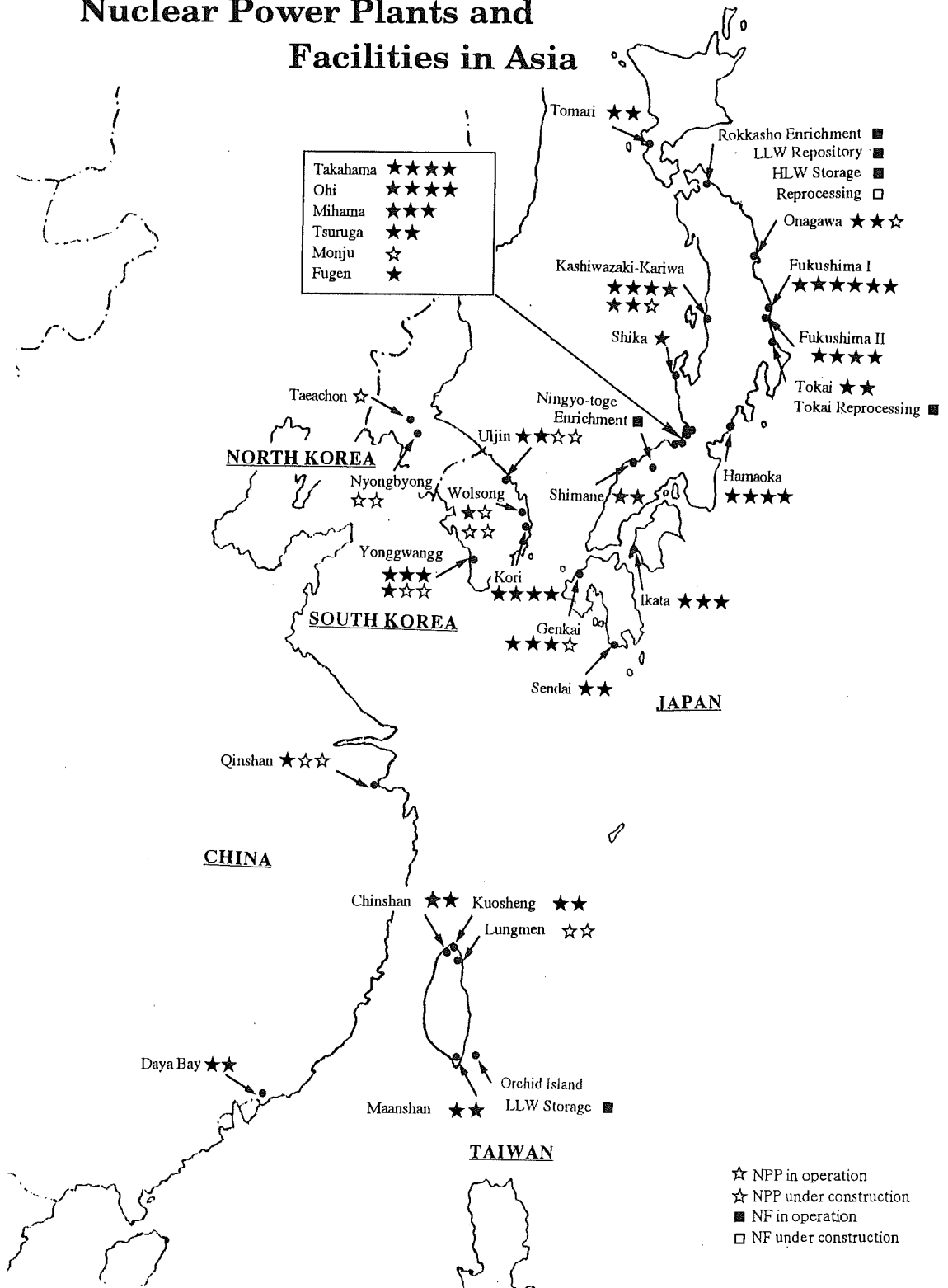
Have the STA and the FEPCO conveniently forgotten this already? No, they have not, but they have been forced to change the route from South America back to South Africa again because of this criticism. This is proof of the instability and uncertain safety factors of VHLW marine transportation. It is reasonable to expect that this transportation will again be criticized by the nations of the world.

We at the CNIC will continue to demand that the Japanese government make fundamental changes to the atomic policy of Japan, including the cancellation of overseas reprocessing and suspension of the extremely hazardous marine transportation of waste nuclear materials.



The VHLW arrived, steaming in the rain.
(in Aomori, 26 April 1995)

Nuclear Power Plants and Facilities in Asia



Aging Reactors Pose Serious Safety Problems

By Tihiro Kamisawa

Crackson In-Core Pipes of Fukushima I-1

On 26 November 1996, during a regular inspection at Tokyo Electric's Fukushima I-1 reactor (BWR, 460 MW, 1971), inspectors discovered cracks in the pipes inside the reactor pressure vessel. Having been in operation for 25 years, this is the second-oldest boiling water reactor after Tsuruga 1 (Tsuruga City, Fukui Prefecture). The cracks are perhaps manifestations of the reactor's old age.

The cracks appeared near the welds in two neighboring pipes out of a total of 10 pipes (SUS304 steel, 27 cm outside diameter, 9.3 mm thickness) that carry coolant from the recirculation pump to the pressure vessel jet pump, and it appears that the direct cause is stress corrosion. The cracks were discovered while using an underwater camera to check water flow in the reactor, which was carried out when replacing the recirculation piping outside the pressure vessel during regular inspection. In all, five cracks of lengths varying from 2 to 19 cm were discovered in almost identical places on the pipes, very close to the inside wall of the pressure vessel.

TEPCO has decided to deal with the cracks by simply clamping on steel supports and bolts and not by replacing the pipes. This is, however, obviously a stopgap measure providing no long-term guarantee of safety. The clamped pipes could rupture at any moment.

The Difficulty of Repairs and Replacements

These pipes are located below the area between the core with its nuclear fuel and the pressure vessel, an area that is very confined and highly radioactive. There are limits to the possibility of repair work by remote

control using remote-controlled robots because of the difficulty of working in such a tight space, and the difficulty of controlling robots in highly radioactive environments. Thus the replacement of these pipes will pose not only technical difficulties, but will also entail a certain amount of work involving heavy radiation exposure to human laborers.

A recent instance of work on the inside of a boiling water reactor core is the Fukushima I-2 unit (784 MW, first operational in 1974). In June 1994 cracks were discovered around nearly the entire circumference of the core shroud's intermediate ring, necessitating the use of brackets to keep it from falling off.

If the in-core piping is replaced in Fukushima I-1, it will be the first time such work has been carried out, meaning the job will have to be done without any technical corroboration whatsoever. Since these pipes were not designed or installed under the assumption that they might one day be replaced, the task is likely to be a very difficult one, and will require quite a long outage.

Naturally, other reactors with piping made of the same material should be shut down and inspected, but new problems could conceivably crop up even where corrosion-resistant materials have been used. Those who run nuclear reactors must henceforth anticipate such age-related problems in all nuclear power stations.

Replacing the Entire BWR Shroud

The Nuclear Power Engineering Corporation and Hitachi, Ltd. are developing technologies to enable the replacement of in-core structures in boiling water reactors in order to keep aging reactors on-line. This is part of the "Nuclear Power Plant

Maintenance Technology Reliability Demonstration Tests" commissioned by the Agency of Natural Resources and Energy (ANRE). Currently they are running tests on replacing guide tubes for neutron flux measurement instruments at Hitachi's Rinkai Plant in Ibaraki Prefecture. They are planning subsequent tests for the replacement of core shrouds, control rod guide tubes, and jet pump riser braces.

In addition, we have received information that Toshiba has placed an order with a British company for three units of a large remote- controlled mill to be used in the replacement and installation of shrouds. According to the information source, the replacement work may soon be carried out for a number of older Japanese BWRs.

Replacing a whole shroud -a large in-core cylindrical steel structure surrounding the BWR fuel assemblies- would no doubt be a job of considerable scale. Replacing PWR steam generators is also a major construction job that entails making a large opening in the reactor containment.

Replacing a shroud would be an even bigger job because it should be performed right inside the pressure vessel. This would require opening the pressure vessel cover, taking out all components including the steam dryer, lattice, and fuel assembly, loosening and extracting the shroud, then inserting the new shroud, and finally performing the welding and other tasks inside the core. Although workers would probably be shielded by lead plates set up around the inside core wall, they would still be exposed to extremely high radiation levels.

Critically Aging Reactors and Their Decommissioning

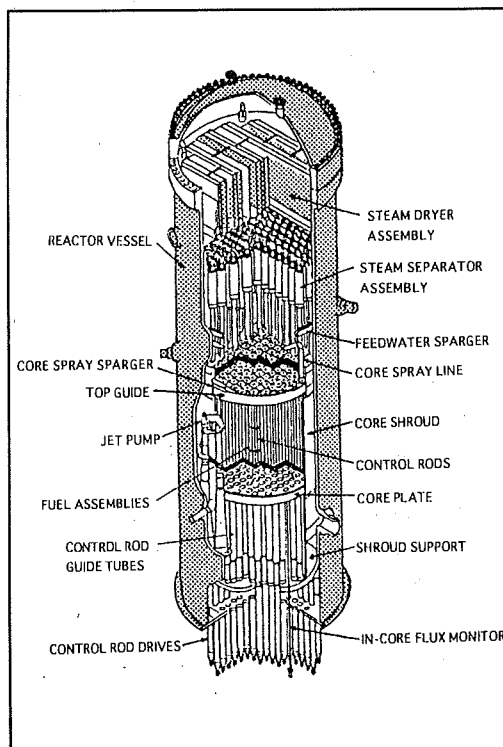
There are no distinct criteria for the operation of aged reactors or for making decisions on when they should be decommissioned. We therefore have a strange situation in which development of the technology proceeds without consideration of how to handle old facilities. Decisions on decommissioning are in effect

left to the electric utilities.

Assessing the state of nuclear power plants should at the very least be done in a disinterested manner, instead of according to arrangements like the "regular safety reviews" that are internally managed by the utilities themselves. Concern over ambiguity of official decommissioning procedures was raised in a recent government committee, and ANRE has just begun to discuss the criteria for decommissioning.

The problems occurring in aged nuclear power plants are of a kind that are hard to discover during usual regular inspections, or which such inspections are not even meant to find. To properly assess the degree of aging, there should be a requirement for an overhaul-like inspection in which a plant after, for example, 10 or 20 years of operation is shut down for two or three years. It could perhaps be mandatory at that point to declare the plant decommissioned if it cannot satisfy certain criteria, the formulation of which would of course be another problem.

Reactor Vessel and Internals of BWR



CNIC sent a letter to President of the United States asking him to revise the U.S. policy to use plutonium from dismantled warheads as a MOX fuel in LWRs.

President William J. Clinton
The White House

12 December 1996

Dear Mr. President,

I am writing concerning DOE's Final Environmental Impact Statement on the disposition of plutonium from dismantled nuclear weapons issued on December 9, 1996. As reported, DOE is going to take the so-called dual-track option allowing two thirds of weapons' plutonium to be burned in commercial thermal reactors as MOX fuel. As a public interest organization working on nuclear energy abolition for a safe and secure world, we the Citizens' Nuclear Information Center, CNIC, are very much concerned about the possibly adverse effects of the FEIS on world safety and security and believe that the US should not adopt the option. I hereby demand that you reject DOE's proposal.

In response to our letter to the honorable Hazel O'Leary, Secretary of Energy, dated May 10, 1996 concerning the Japanese MOX fabrication in Europe, she wrote in her letter dated October 16 ; " the United State does not encourage the civil use of plutonium." Although our understanding is that the latest US announcement in favor of the reactor option for plutonium disposition does not mean a shift from this stated policy, the FEIS decision is regrettably already encouraging the large-scale civil use of plutonium in reality.

After the sodium leakage/fire accident at the FBR Monju last December, there have been growing concerns over the Japanese government's ambitious plutonium policy and various opinion polls conducted recently by Japanese media clearly indicate that the majority of the Japanese people are now not only against the FBR program but also the whole plutonium program including above all MOX use in light water reactors. Faced with wide public distrust, the Government and nuclear industry have had difficulties in getting their LWR MOX burning program on the agenda.

DOE's FEIS decision came just at this time. Now every newspaper in Japan reports: "the US is making a big policy shift which opens the way for the commercial use of plutonium" and we have already heard many Japanese plutonium industry people hailing the US decision. The December 11 issue of the Denki Shimbun (Electricity Newspaper) reports that the government has just started to prepare a new draft plutonium utilization program, which is mainly based on burning MOX in commercial light water reactors. So, the US decision is actually encouraging Japanese plutonium industry against the nationwide concerns over environmental, health and proliferation risks of the MOX option as well as poor economics.

That the public's concern over the risks of MOX use are well based on scientific, societal and economic analyses was made clear in the Interim Report Conference of the International MOX Assessment Project organized by CNIC and headed by myself held at Kyoto in October (enclosed please find the summary of speeches of the conference and the attached draft full report on safety.)

We also fear that the reactor option when once started would create a big infra-structure for plutonium processing and utilization inside the US and thus encourage the build up of civil plutonium industry also inside the US. Our safety study also indicates there are still many unsolved safety problems concerning full core use of weapon-grade plutonium.

Based on the reasons mentioned above, DOE's opting for the reactor option for plutonium disposition will endanger the world's safety and security against your government's stated policy. Simply opting for immobilization is by far the better choice and I strongly demand you to reconsider the DOE's MOX option proposal for the disposition of excess plutonium from dismantling warheads.

Yours sincerely,

Jinzaburo Takagi, Dr.
Executive Director

NEWS WATCH

“No!” to State Involvement in Reactor Exports

On 17 December 1996, the Foreign Affairs Committee of the House of Councilors adopted a petition opposing the use of public funds and the granting of government permission for the export of nuclear reactors. This is not legally binding on the Cabinet, but it is significant that the number of Diet members opposed to the summary granting of permission for reactor exports has increased.

The petition was carried out by a citizens' group known as the "Campaign to Stop Reactor Exports." This group has repeatedly submitted signatures to the Foreign Affairs Committees, Finance Committees and International Trade and Industry Committees of both Houses. The number of signatures collected totals 140,000, and more than 70 Diet members have served as contact persons for the petition. Regretfully, the petition was not adopted by other committees.

APO Founded

On 1 January, Toshiba and Hitachi founded the Asian ABWR Promotion Organization (APO). This is a non-incorporated organization for technical promotion with a view to finding markets for ABWRs in Asian countries, including China. Concretely, the APO will conduct 1) technical presentations, 2) feasibility studies, and 3) gathering of technical information in each country. It is presumed that APO will eventually become a clearinghouse for orders and that a joint venture will be established.

Though rivals in Japan, these two companies have in the past worked jointly with GE of the U.S. and Tokyo Electric Power Co. to develop ABWRs. For the construction of Kashiwazaki-Kariwa 6 (now in commercial operation) and 7 (in test operation), the world's first ABWRs, both companies together with GE became the joint major contractor. For K.K. 6, Toshiba was responsible for the construction of the reactor system and Hitachi the steam system, while for K.K. 7 they reversed their roles. The same trio is now planning the construction of Lungmen 1 and 2 on Taiwan.

Iodine Tablets for Residents

Oguni Town, Niigata Prefecture, located 15 to 20 kilometers from Kashiwazaki-Kariwa Nuclear Plant, has decided to distribute from FY1997 iodine tablets (taken to prevent cancer of the thyroid gland in the event of a nuclear accident) to every household which requests them. The town, population of about 8,000, has stockpiled about 20,000 iodine tablets at its clinic since August 1996.

According to the guidelines drawn up by the national government for countermeasures against a nuclear accident, the area in which such measures should be taken is within 8 to 10 kilometers from a nuclear plant. In addition to Oguni, one city and one town in Fukui Prefecture, and one city in Fukushima Prefecture which lie outside the designated range have begun stockpiling iodine tablets.

Oguni will be the first administrative district in Japan, whether inside or outside a designated area, to distribute iodine tablets to individual households.

Moves to 'Invite' ITER Gather Momentum

Japan Atomic Industrial Forum, Inc. (JAIF) published on 12 December 1996 a formal request to 'invite' an International Thermonuclear Experimental Reactor (ITER) to Japan. On 20 December, an ITER Project Discussion Group was formed in the Atomic Energy Commission. The group is said to be discussing issues such as the safety of ITERs and availability of funds for the project.

A preparatory meeting for the construction was held in Tokyo on 17 December, prior to the ITER Council meeting which was held on 17-18 December, to consider possible construction sites. The meeting was held in closed session, and there appears to have been disarray between Japan, keen to solicit construction of an ITER, and the other three parties. It was decided to extend the discussion for a further six months.

Prior to the Council meeting, citizens' groups from Tomakomai City (Hokkaido), one of the local governments seeking the ITER construction, brought about 70,000 signatures protesting the plan to Science and Technology Agency. They also expressed their opposition to the plan at the location of the Council meeting.

Freedom of Information Progresses

With the fact that information was kept hidden when a grave accident occurred at Monju became a big social issue, a move for freedom of information finally but slowly began to progress. The AEC in September and the Nuclear Safety Commission in December decided in principle to open to the public the deliberations at their experts' committee meetings (the plenary's deliberation as well as far as the NSC is concerned). It was also decided that when they compile their reports, they publish one in a draft form to invite opinions from the public, and reflect these views in the final reports. The views which are not adopted will be published with the reports, along with the reasons for their exclusion.

The Advisory Committee for Energy, an advisory organization to MITI has not officially made the decision but similar measures have already been taken. These measures, however, are for "public acceptance," and are not yet for responding to the people's "right to know," which is the originally purpose of the freedom of information decision. There is still much information which is not open to the public when requested by local citizens and groups.

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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 this industry in Japan. Please write to us for a subscription (subscription rate: supporting subscriber \$50/year or 5,000 yen/year, subscriber \$30/year or 3,000 yen/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.)