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℅ Citizens' Nuclear Information Center
3F Watanabe Bldg., Higashiueno 2-23-22, Taito-ku, Tokyo 110, JAPAN Phone: 03-832-1976

FOREWORD

The accident at the Chernobyl nuclear power plant clearly showed that radioactivity spreads far beyond national borders in the event of a major nuclear accident. The incident at Chernobyl has made us all recognize anew the necessity for closer international cooperation in our movement against nuclear power. In spite of the various efforts being made internationally, we still lack even the most basic information on what is going on abroad.

We, individuals and groups in the Japanese anti-nuke movement, have special responsibilities in this respect. We often feel little is known about the Japanese nuclear industry, and even less is known about the anti-nuke movement in Japan. This situation is partially due to language barriers, but can also be attributed to a lack of effort on our side.

The Japanese nuclear industry is now playing an increasingly important role in worldwide nuclear development. Japan imports all of its uranium, its spent fuel is reprocessed in France and England, and extracted plutonium is transported back to Japan by sea, and in the future it will be transported by air. The Japanese Government has not abandoned its intention to dump radwastes in the Pacific Ocean or to store them in the Pacific Islands. And now, the Japanese nuclear industry is very ambitious about exporting its nuclear technology to China and the Third World. As such, information from the Japanese anti-nuke movement may be vital to anti-nuke movements in other countries.

With this goal in mind, we have decided to publish a newsletter in English 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. This newsletter is actually a revival of a previous publication, Han-Genpatsu News (No Nuke News Japan), published by the group Jishukoza. The Han-Genpatsu News had to be discontinued in 1985, after having published 23 issues, due to a limited working staff and difficulty in funding. We still are having similar difficulties, and are therefore starting our newsletter only as a small bi-monthly publication -- at the moment. We are determined, however, to continue the Nuke Info Tokyo for a foreseeable time period.

Because we do not know exactly who needs our newsletter, and who doesn't, we are sending the first issue according to our mailing list. If you want our future issues to be sent to you (or to another group you know of), please contact us.

We hope our newsletter will initiate an improved exchange of information between you (your group) and the Japanese anti-nuke movement.

Nuke Info Tokyo Publishing Committee
J. Takagi

JAPANESE NUCLEAR INDUSTRY/ANTI-NUKE MOVEMENT FACE TURNING POINTS

(J. Takagi)

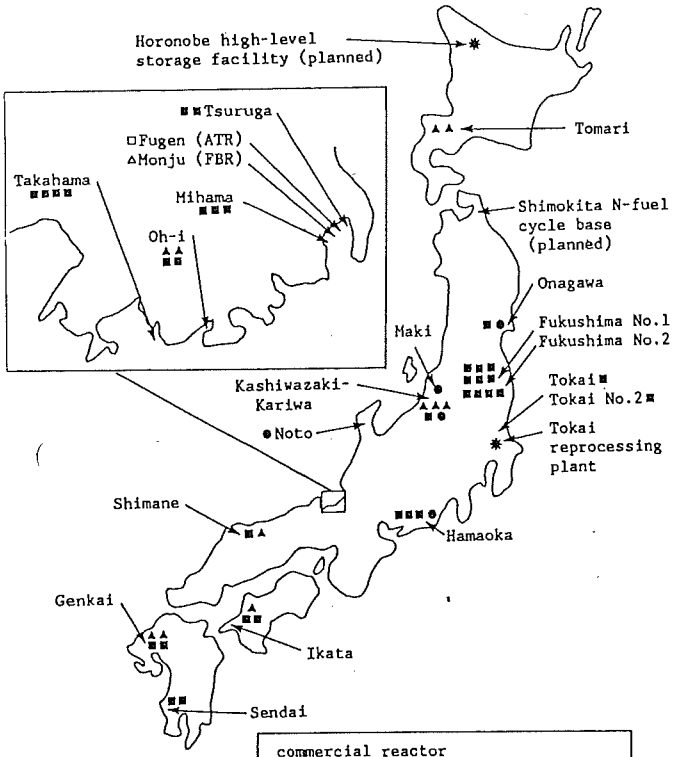
Thirty-six nuclear power plants are now operating in Japan, supplying about 25% of Japan's electricity needs. An additional 21 plants are under construction, or are being prepared for construction. This, however, by no means implies that Japan cannot do without nuclear power plants for its electricity. The fact is, utilities are now suffering from an excess of plants. Last summer, the electricity demand reached a record peak of 110.5 GW. At that time, there were licensed plants with a total capacity of 155.7 GW, corresponding to a power reserve of 41%, even at peak demand. Thus, utilities have to make fossil and hydro plants idle. And, they are finding it more and more difficult to justify their policy of increasing nuclear power plants in response to the requests of the nuclear industry, which is also facing an overabundance of facilities and labor. For the first time in the history of the Japanese nuclear industry, there is a marked tendency toward reducing the numbers of employees. This situation has forced the Atomic Energy Commission to revise its previous projection for the total nuclear generating capacity. The planned capacity for the end of the century has been reduced from 90 GW to 53 GW.

The increasing cost of nuclear power has become a major problem for utilities, and they are now try to reduce costs by one, reducing construction costs, and two, by shortening the inspection and maintenance period. The utilities have been pressuring the Government to relax design criteria, including an aseismic design, and to simplify the licensing procedure. In fact, the president of the Japan Atomic Industry Forum, H. Arisawa, was quoted by newspapers as having insisted in a JAIF meeting last year, that "excessive" safety systems such as ECCS could be removed in order to reduce costs.

As a result of this trend, toward shortening the inspection period, nuclear facilities are facing a deterioration of quality. The frequency of accidents is now increasing. Last year there were 29 accidents and failures that reflect these significant cutbacks in safety. The recent incident at Takahama 1, in Fukui (see page 9), serves as a good example of the risky practices the nuclear industry is currently engaging in.

Opposition to the nuclear industry has been growing in Japan. However, the Japanese anti-nuclear movement is often cited in the news media as weak. This is only partly true. Indeed, we have difficulties organizing mass rallies in cities located relatively far from plant sites. However, in areas where there are plans to construct new plants, there are opposition movements among fishermen, farmers and other local residents that are quite strong. Many construction plans have actually been stopped by local opposition. In the past ten years there have been no construction plans that have been approved for a new site. The result is an increase in the number of units at already approved plant sites. So, two thirds of Japan's nuclear power reactors are located in just two prefectures: Fukushima and Fukui. Such a concentration of facilities has arisen through a vast program of compensation and subsidies, as well as through unofficial "contributions." Contrary to assertions by the government and utility companies that the money would improve the economy of these sparsely-populated areas, the nuclear industry has

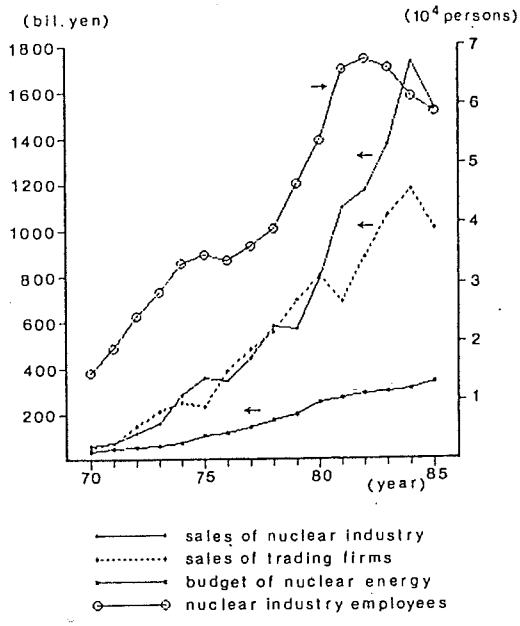
Nuclear Map in Japan (as of the end of Aug.'87)

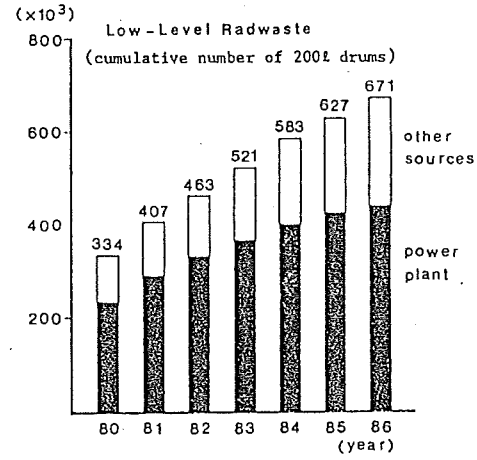


commercial reactor			
■ in operation	35	27,881MW
▲ under construction	11	8,688
● planned	7	4,390
total	53	40,959

R&D stage power reactor		
□ in operation	1	165MW
△ under construction	1	280
total	2	445

Sales, Budget and Employees





destroyed local economies, damaged human relations, and created communities ruled by, and dependent on, the nuclear industry.

Japanese people are now becoming widely aware of the adverse social consequences of nuclear energy, as well as of its dangers to health. The Chernobyl accident has helped greatly to change public opinion in Japan, as well as in other parts of the world. We are convinced that we can now stop any new construction plan for a nuclear plant. It is important to mention, too, that this opposition to the nuclear industry has been greatly influenced by the women's movement. The Japanese anti-nuke movement has been intensely male-oriented, reflecting the larger Japanese social structure, and women's participation in the fishing regions has, until recently, been limited. But currently, mothers are successfully leading some of the movements in the fishing regions in areas such as Kumano, Tomari (Shimokita), and Kaminoseki. Women's contributions are also being appreciated in other regions. That women are playing an increasingly important role in the Japanese anti-nuke

movement is worthy of special mention because of the potential this has for restructuring the traditional male-dominated society. Since the Chernobyl accident, women's participation has increased dramatically, with many movements led by women springing up in cities around the country.

An issue that has gained much publicity in Japan, and has been the focus of heated opposition recently, is the part of the nuclear fuel cycle known as the "downstream." The Federation of Electric Power Companies announced in 1984 plans to build a large nuclear fuel cycle complex in Rokkasho-mura, on Shimokita Peninsula. The planned complex consisted of a low level radwaste repository for one million 200 ℓ drums, a 150 ton SWU/y enrichment plant and a 800 ton SWU/y reprocessing plant. The whole project is the subject of much controversy. The region is rich in marine products, is a good site for dairy farming, and has an abundance of groundwater sources. Geological research has shown the region to be an inadequate area for a waste facility, due to its unstable soil structure and high groundwater level. The close proximity of U.S. and Japanese military bases is also a major concern to the regional people.

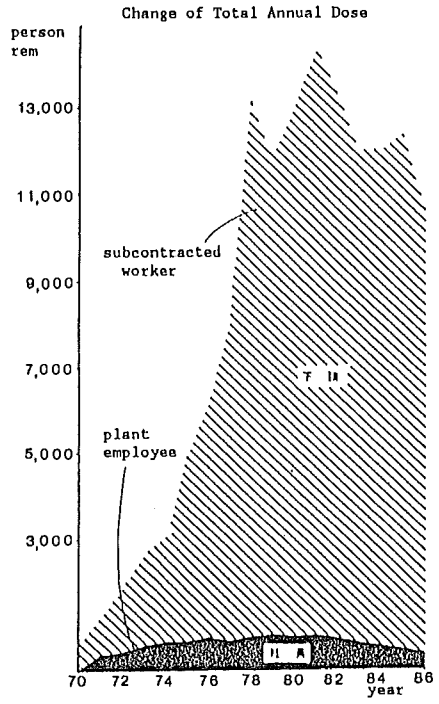
The project is about two years behind schedule due to the strong opposition in the area, led by movements of fishermen and mothers. The marine survey of the area, necessary for licensing, began last year. Resistance led by fishermen was suppressed by the police and the maritime guard. In another area of Japan, Horonobe, Hokkaiko, the PNC (Power Reactor and Nuclear Fuel Development Corporation) is making plans for a high level radwaste intermediate storage facility. A survey of the area was also carried out in spite of opposition by the majority of residents, including the Governor of Hokkaido. In the struggles in both Shimokita and Hokkaido, arrests of fishermen and farmers continues, demonstrating that acquiring dumping places for radwastes is an almost desperate goal for those in power.

Japan is now trying to involve itself in the recycling of plutonium, as part of its nuclear fuel cycle policy. An FBR (Fast Breeder Reactor), called "Monju," and capable of 280 MW, is now under construction in Japan. In addition, an advanced thermal reactor which burns mixed oxide fuel is already operating. The test burning of mixed oxide fuel in a light water reactor began at Tsuruga 1 last year. Thus, the Japanese nuclear industry is at the critical point of determining its involvement in the plutonium economy. In addition to the social and ethical considerations that are drawbacks to involvement, there are questions of economics that are causing hesitation even within the industry. Despite this, the government is eager to push forward its plans for recycling plutonium. This enthusiasm is giving rise to fears among conscientious people about the possible military ambitions of the Japanese government.

The Japanese nuclear industry has come to a turning point in the course of development it will take. As a movement, we need to play close attention to both the industry's and the government's courses of action. This, too, can be a turning point for the Japanese anti-nuclear movement. □

THE NUMBER OF WORKERS EXPOSED TO RADIATION INCREASES

The number of workers engaged in radiation-related work in Japanese nuclear power stations (including the only advanced thermal reactor in Japan) has been increasing in recent years. As many as 59,000 people are reported to have worked in the fiscal year 1986. Since there are some workers who work at more than one plant in a year, however, the actual number of workers are estimated at about 50,000.



The total radiation dose that the workers were exposed to in 1986 declined slightly from the previous year. The number of workers who received a high dose of radiation in 1986 decreased quite a bit from the previous year (see Table 1). This is due to the fact that there were no major repair works at nuclear power facilities in 1986. However, these lack of repairs may lead to an increase in radiation exposure for workers in 1987.

Subcontracted workers account for 95.6% of the total number of exposed workers. This figure has turned out to be the highest ever for 1986, and it is a figure that has been increasing every year. The subcontracted workers are the workers who are subjected to the highest possibility of radiation exposure. They are the people at the bottom of the labor force, and are contracted on a temporary basis. They are the ones most often put in dangerous work situations. As is shown in Table 1, all of the 805 workers who were exposed to more than 1.5 rem in 1986 were subcontracted workers. □

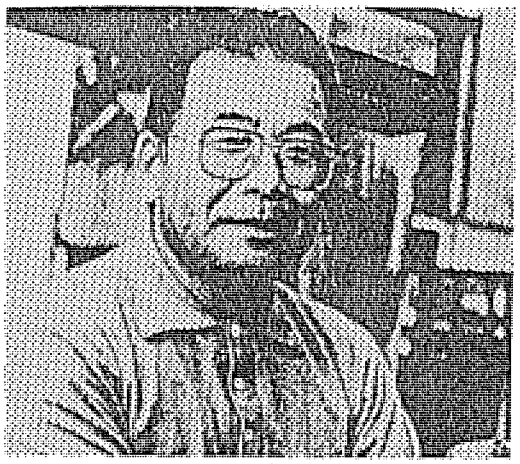
Table 1. Number of Workers at different exposure level

year	kind of workers	number of workers				
		<0.5 rem	0.5~1.5 rem	1.5~2.5 rem	2.5~3.0 rem	3.0~4.0 rem
1985	plant employee	5,446	245	7	0	0
	subcontracted	40,533	6,817	1,372	158	1
	total	45,979	7,062	1,379	158	1
1986	plant employee	5,564	171	0	0	0
	subcontracted	45,878	6,448	754	51	0
	total	51,442	6,619	754	51	0

Table 2.

year	number of workers			total person rem			average dose (rem)		
	plant employee	subcon-tracted	total	plant employee	subcon-tracted	total	plant employee	subcon-tracted	total
1970	823	1,675	2,498	236	326	561	0.29	0.19	0.21
1971	904	4,339	5,243	370	896	1,265	0.41	0.21	0.24
1972	1,056	4,753	5,809	464	1,433	1,897	0.44	0.30	0.33
1973	1,512	6,960	8,472	596	2,098	2,696	0.39	0.30	0.32
1974	2,076	10,282	12,358	701	2,427	3,127	0.34	0.24	0.25
1975	2,282	13,798	16,080	716	4,283	4,998	0.31	0.31	0.31
1976	2,555	17,241	19,796	769	5,473	6,241	0.30	0.32	0.32
1977	3,233	22,129	25,362	726	7,399	8,126	0.22	0.33	0.32
1978	3,758	31,917	35,675	789	12,475	13,266	0.21	0.39	0.37
1979	3,978	31,935	35,913	880	11,122	12,003	0.22	0.35	0.33
1980	4,195	33,009	37,204	851	12,334	13,185	0.20	0.32	0.35
1981	4,614	38,474	43,088	848	13,635	14,485	0.18	0.35	0.34
1982	4,916	38,036	42,952	794	12,641	13,433	0.16	0.33	0.31
1983	5,572	42,682	48,254	677	11,473	12,151	0.12	0.27	0.25
1984	5,784	45,726	51,510	621	11,534	12,156	0.11	0.25	0.24
1985	5,698	48,881	54,579	572	11,933	12,505	0.10	0.24	0.23
1986	5,735	53,131	58,866	466	10,278	10,744	0.08	0.19	0.18
total	58,691	444,968	503,659	11,076	131,760	142,839	0.19	0.30	0.28

ANTI-NUKE WHO'S WHO



Mr, Yukio Kawakami
of Horonobe-cho, HOKKAIDO

Horonobe-cho, a small town in Hokkaido, has been trying to get the government to build a high-level nuclear waste facility there. Proponents see this as a means of revitalizing the town, whose population has been dwindling in recent years. However, not all of the citizens are supporting this plan. Mr. Yukio Kawakami, a 57 year old member of the town council, is the leader of the movement to oppose this plan.

Mr. Kawakami has been a dairy farmer since his settlement in this utmost northern part of Japan thirty years ago. He has a sincere attitude toward life and work, and is unwilling to go along with the town's plan for revitalization. He sees this plan as a form of dependence on the government. He says of the town council, "they support the plan to build the waste facility, even though they know it is deadly."

Mr. Kawakami settled in the Horonobe district in Hokkaido in 1953, as part of a farm construction crew sent to the area from southern Japan. In 1957, after receiving some agricultural training, he settled in the place that is now his home. This place is about 30 km from the town center. At first he had to struggle with the peat bog, which, he said, made his field sneakers wet. The next year he bought his first cows. After leaving them in the barn one day, he returned to find them half sunk in the mud. He started out with only two cows. Today, he owns 75. Mr. Kawakami has always worked hard. He built his house and his barn by himself. He is a skillful blacksmith, and builds most of his own farm machinery.

Although most of the dairy farmers in this region are about 35 million yen in debt each, Mr. Kawakami owns his farm and his debt is about half that of the average farmer's. He is confident about making good money by dairy farming, if it is done properly. However, this attitude is quite different from the mayor's, Mr. Shigematsu, who is looking to the national government, and the construction of a nuclear waste facility, to help the region out of its economic slump.

Mr. Kawakami's involvement with the issue of nuclear waste disposal began during the mayoral campaign in late 1982. He strongly supported Mr. Kamata who ran against Mr. Shigematsu. However, Mr. Kamata was defeated. In the spring of 1983, he was asked by other townspeople to run for the town council, and he won the seat. Since then he has stood firm in his opposition to the nuclear waste facility plan, which the majority of the members in the town council favor. Mr. Kamata, the previous opponent of the plan, has moved out of the town, leaving Mr. Kawakami as the leader of the movement, and as the representative of the region's farmers.

Recently the movement against the nuclear waste facility plan has grown quite strong in Horonobe-cho, due in large part to Mr. Kawakami's efforts. Many people in the region have grown to respect his opinion, and to see his basic concern for the earth as a pressing issue. (K.T.)

JAPANESE GOV'T CONTINUES TO PROMOTE WASTE DUMPING PLAN IN THE PACIFIC

Since 1980, when the Japanese Government announced its plan to dump its nuclear waste in the Pacific Ocean, 600 miles north of the Northern Mariana Islands, the Pacific nations, and concerned groups from all over the world, have been rallying against this prospect. Despite strong opposition and despite the open-ended moratorium on nuclear waste dumping at sea, adopted at the London Dumping Convention (LDC) in 1985, Japan is shamelessly, and adamantly, moving ahead with its efforts.

Japan's strategy for promoting its dumping plan has been to link economic aid to the Pacific nations to conditions that will enable Japan to meet its goals. Recently, when the Minister of Foreign Affairs, Mr. Kuranari, visited several of the Pacific nations, he promised to set up a special aid for them and to endow it with 2 million dollars. As is well known, Japan's economic aid always has strings, and Japan is attempting to use this aid to persuade the Pacific nations to accept its nuclear waste plan.

Japan is also seeking international "rubber stamp" approval for its plan through the LDC. The "panel of experts" which is currently studying the political, legal, economic, and social aspects of nuclear waste dumping at sea, is of special interest to the Japanese nuclear industry, which is pressuring the committee to call off the open-ended moratorium on nuclear waste dumping by 1988.

On May 25 of this year, during the 108th Session of the National Diet of Japan, Yataro Mitsubayashi, the Director of the Science and Technology Agency (STA) made his view on the nuclear waste dumping issue public. He said that he will keep Prime Minister Nakasone's and former Minister of Foreign Affairs, Shintaro Abe's, promise to the Pacific nations. This promise states that Japan will not dump nuclear waste in the Pacific without the "understanding" of the Pacific nations.

Does such a statement mean that Japan has given up its plan? No. In the same session of the Diet, Yoshiyasu Sasaki, the Director of the Atomic Energy Safety Department, a part of the STA, stated that "Japan will put full effort into getting the understanding of the Pacific nations through the LDC, especially through the panel of experts which is studying the political, legal, economic, and social aspects of nuclear waste dumping at sea." This report is to be presented at the LDC in 1988, no matter what kind of report emerges and no matter what kind of resolution is adopted at the LDC, the will of the people of the Pacific must be respected.

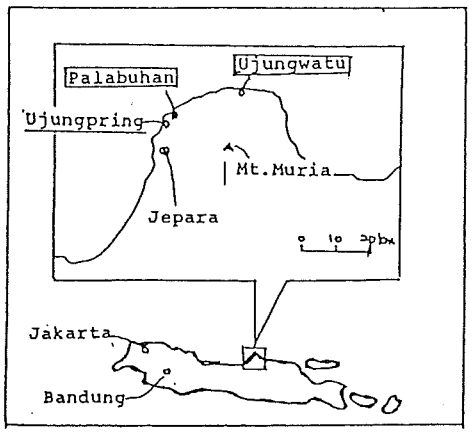
MITSUBISHI MAKES PLANS TO EXPORT NUCLEAR TECHNOLOGY TO INDONESIA

Japan has recently been seeking strong ties with, in particular, Indonesia. Nuclear industry people in both countries have been keeping in close touch through Japan Atomic Industrial Forum (JAIF), as well as through the Japan International Cooperation Agency. The Japanese nuclear consortium (Toyo Engineering, Chiyoda Kako, Nihon Kokan, Mitsui Bussan, Toshiba, etc.) has made a bid for the construction of the neutron beam facility of the Nuclear Research Center in Serpong, which is run by

Indonesia's National Atomic Energy Agency.

The project, however, that is arousing the most current interest in the Japanese industry is Indonesia's plans to build a 600 to 1,000 megawatt commercial nuclear power plant in the middle of Java, to be in operation by the year 2,000. Indonesia has asked several countries to make bids for the construction of this plant, including Framatome of France, Kraftwerk Union of West Germany, Atomic Energy of Canada Ltd., Westinghouse of the United States, and Mitsubishi of Japan. The plans for this, however, are not the usual ones in which Indonesia will merely be paying for the services of the contracted company. Rather, the contractor will build the plant, own it, and make profit by selling electricity to Indonesia's National Electric Power Company. The transfer of plant ownership to Indonesia is conceived of taking place in 15 to 20 years.

In May of this year, France and West Germany delivered their joint proposal to Indonesia. Japan has



also submitted its proposal, which it made jointly with the United States and the Ansaldo Company of Italy. The third competitor, Canada, is also believed to have recently submitted its proposal. The outcome of these bids has yet to be decided. Japan has shown a strong determination to make a winning bid in Indonesia. The establishment of a new Department of Nuclear Projects is just one of their recent efforts. This Department will also be responsible for further foreign expansion. Currently it has its sights set on Turkey and China.

MITSUBISHI'S RADWASTE CAUSES SERIOUS CONCERN IN MALAYSIA

The Asian Rare Earth Company (ARE), which treats heavy metals, has been producing radioactive wastes containing thorium hydroxide. The company is a joint-venture between Mitsubishi Chemicals of Japan, and Ben Minerals of Malaysia. The residents who live opposite the ARE factory, in the town of Bukit Merah, have been horrified by the fact that radioactive wastes are being indiscriminately stored in the factory, and in the temporary dumpsite adjoining the factory. Despite strong and widespread opposition in Malaysia, and from groups around the world, ARE does not plan to stop its operation. Recently Dr. Sadao Ichikawa from Japan investigated the hazard, posed by the dump sites and recommended that ARE be shut down. Dr. Rosalie Bertell from Canada reached the same conclusion in a separate investigation.

On July 18th, 17 Japanese citizens groups appealed to the public in a mass rally on the issue, with Evelyne Hong from Malaysia as the guest speaker. On July 20th, these groups brought a protest to Mitsubishi Chemicals, to the Ministry of International Trade and Industry, and to the Ministry of Foreign Affairs. The response from Mitsubishi was that it does not intend to stop the operation of ARE. The response from the Ministries was that they are not responsible for dealing with the matter.

NEWS WATCH

ILLEGAL ENGINEERING AT TAKAHAMA 1 ACCUSED BY RESIDENTS

In September, an anti-nuclear group in Fukui Prefecture urged the Fukui District Prosecutor to bring suit against the Kansai Electric company for their illegal engineering work at Takahama 1.

On July 11, the number one unit at the Takahama plant had to be stopped manually, due to an unusual vibration in the primary coolant pump. An investigation uncovered a seven kilogram stainless steel fitting, a part from one of the unit's three steam generators. The fitting fell from a nozzle cover and was sucked into the blades of the primary coolant pump. One month after the accident, one of the broken pieces was found at the bottom of the core.

The course of this accident is striking. If the fallen fitting or broken pieces had seriously damaged sensitive core parts, catastrophic results would have occurred. An alarming fact is that the nozzle cover was installed last October without permission of the MITI (Ministry of International Trade and Industry), in order to shorten the periodic inspection time. The nozzle cover isolates the steam generator from the reactor vessel and the spent fuel cavity, and enables inspection of the steam generator while handling spent fuel. After the inspection, the cover is removed, but the metal fitting remains on the generator.

Under the Law for the Regulations of Reactors and Electric Utility Industry Law, any engineering modification requires the utility company to get a permission from the Minister of International Trade and Industry. Kansai Electric, however, covertly changed the design of this fitting, and failed to report it. In addition, the company made this illegal modification on its Ohi 1 and 2, and on its Mihama 2 and 3. This design change, in addition to violating the periodic inspection procedure, could be fatally hazardous to workers during an inspection. The nozzle could break and coolant could flow from the core to the steam generator.

This behavior on the part of the Kansai Electric Company reflects the recent attitudes typical of the utility companies. They are more interested in maintaining a high capacity factor than in maintaining safety.

JAEC ANNOUNCED NEW LONG TERM PLAN

The Japanese Atomic Energy Commission (JAEC) announced on June 22 its new long term nuclear development plan. In the plan, JAEC put up the following three basic goals:

1) The establishment of nuclear power as a base-load power source
2) Encouraging a productive science and technology
3) The involvement in international nuclear development

Concerning the third point, the JAEC declared that Japan should act as a world leader in the development of nuclear power in countries throughout the world. Such confident sayings, however, are hard to square with the prospect itself, especially when we look more closely at the report. The commission, for example, set the target for the capacity of nuclear power by the year 2000 at 53,000 MW, which is a 30% cutback from the former target of 90,000 MW. With such substantial cutbacks, industry sources believe it will be impossible to achieve the new goals.

In addition, the report says that the commercial utilization of plutonium through FBR should be realized by the years 2020 to 2030.

A previous report in 1982 targeted the commercialization of FBR for the year 2010.

The report also indicates declining confidence in other areas of nuclear technology development, such as Advanced Thermal Reactor technology, uranium enrichment, and the reprocessing of spent N-fuel.

PUBLIC "OVER-DEMAND" BLAMED FOR MASSIVE POWER OUTAGE

Tokyo, and four neighboring prefectures, were hit by a massive power outage lasting for more than three hours on July 23. This severely impaired many urban functions. According to the Tokyo Electric Power Company, voltage suddenly plummeted at three substations near Tokyo, due to concentrated mass consumption of electricity, mostly from air-conditioners. This allegedly resulted from a sudden rise in temperature, as high as 39 degree celsius, that occurred after the rather extended rainy season.

Ironically, on the previous day, the Central Electric Power Council had announced its estimate for this summer's electric power demands. The council guaranteed consumers that plenty of electricity was available. It is common knowledge that there is an overabundant power supply in Japan. Thus, it is highly unlikely that the power failure was caused by a supply shortage. Rather, a major problem in maintaining power voltage seems to be that generating facilities, including nuclear power stations, have become too concentrated in certain geographical areas, and have grown too large in scale. As a result, a great volume of power must be transmitted over a long distance, through ultrahigh voltage power lines, and the transmitting system becomes complicated. These are problems within the industry that it refuses to acknowledge. It chooses, rather, to attribute failures to a public "over-demand" for electricity.

NO LESSONS LEARNED FROM CHERNOBYL: GOV'T COMMISSION REPORT

On May 28, 1987, the Japanese government's special commission published a report claiming that serious accidents, such as the one at Chernobyl, could never happen in Japan.

The report, compiled by the Special Commission for Investigation into the Nuclear Power Plant Accident in the Soviet Union, was very disappointing. It included nothing that the Japanese people really wanted to know -- about the safety of Japan's reactors, and the effects of nuclear fallout from Chernobyl in Japan. It merely said that "Japanese safety regulations are already strict enough and reactor types here are different from the ones at Chernobyl." Seriously concerned about such haphazard official reporting, the Citizens' Nuclear Information Center immediately issued a statement criticizing the government. It charged that the government was refusing to learn from the Chernobyl accident, and that with this kind of report, people could not be protected from the threat of a serious nuclear accident.

Further shortcomings of this report are that it makes little reference to the radioactive contamination of the environment and food supplies that has resulted from the Chernobyl accident. At present, Japan depends greatly on food importation from all over the world, including from areas heavily contaminated with radioactivity from Chernobyl. Despite this, the foods that the Ministry of Health and Welfare require to be inspected are still very limited. The food items and countries of origin are designated for inspection only when they happen to be found contaminated through random checking at quarantine stations, after being unloaded.