NUKE INFO TOKYO

Jan./Feb. 1991
No. 21

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Comprehensive Critique of Rokkasho Project Published

Rokkasho-mura Nuclear Fuel Cycle Plant Construction Site

IN THIS ISSUE

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As I write this article, the whole of Aomori Prefecture is caught up in a heated gubernatorial election campaign. The election, whose main issue is the Rokkasho nuclear fuel facility project, is to take place on Feb. 3. Anti-nuclear groups including farmers, grassroots citizens, and union workers as

well as socialists and communists, have succeeded in putting up a united candidate Shigeru Kanazawa, a lawyer living in Aomori city and a representative of the Aomori Network Against Nuclear Power and Nuclear Fuel Facilities.

The Liberal Democratic Party (LDP), on the other hand, which has held power in Aomori for 40 years, has failed to unite due to inner conflicts, and there are now two pro-nuclear conservative candidates, Masaya Kitamura, the present Governor, and Tatsuo Yamazaki, a member of the Upper House.

Opinion polls conducted recently by local newspapers show that the three candidates have a nearly equal chance of winning. So there is a good prospect that Aomori will elect an anti-nuke governor for the first time and put an end to the entire Rokkasho nuclear fuel cycle project. (By the time this issue is sent out, the results should be known. See the enclosed slip.)

Because it is vitally important that the residents of Aomori are fully informed about the problems surrounding this extremely controversial and dangerous project before coming to their voting decisions, I have written a comprehensive scientific critique of the project based on our many years of work at CNIC. The 360-page book was published at the beginning of this year, just in time for the election. A very brief summary is given below.

1. Overview

When completed, the Rokkasho nuclear fuel cycle complex will be one of the biggest nuclear centers in the world (see Fig. 1 and the Table). Nevertheless, the geological instability of the region, the high ground-water level and nearness to farms and fisheries as well as populated areas, make Rokkasho one of the least suitable places in the world to site such facilities, with their concentration of vast amounts of nuclear and radioactive substances. A still more ominous feature of the site is that all the facilities will lie under the "specially controlled sky area" of the U.S. and Japanese Airforces since Rokkasho is situated very near to both Misawa air base and Amagamori air-to-ground gunnery and bombing range. There have been ten aircraft-related accidents in the last five years including F-16 fighter-bomber crashes and erroneous dropping of dummy bombs in the surrounding area. Another point of concern is the large amount of radioactive material transported to the facilities by truck and ship. On average, 5.5 tons of uranium, 140 drums of low and intermediate level radwaste, 2.2 tons of spent fuel and one canister of high level waste are to be transported daily to the Rokkasho facilities. The frequency of transportation poses a considerable threat to local residents, particularly in view of recent statistics which indicate traffic accidents are increasing.

2. Uranium Enrichment Plant

While the plant is scheduled to start operation in October 1991, it is highly doubtful that it will make any economic sense due to the small capacity and expected high enrichment cost. Japanese utilities can already procure sufficient enriched uranium under existing contracts from the U.S. DOE and Eurodif (France) at a much lower cost.

The accident hazard of the plant can not be neglected. Our analysis shows that the thousands of tons of uranium hexafluoride (HEX) carried in and treated in the plant every year pose serious risks to residents. When released into the air, HEX easily decomposes into highly toxic hydrogen fluoride and uranyl fluoride. Damage to one HEX cylinder containing about 1.5 tons of uranium would expose residents living as far as 70km downwind to more than the annual dose limit for the public (100 mrem).

3. Low Level Radwaste Storage Center

The name of this facility is doubly misleading. Dubbed a "storage center," it is in fact designed for the dumping (final disposal) of 200,000 200ℓ drums containing a large amount of cemented or bituminized radwaste from nuclear power plants. Neither can this radwaste be described as "low level": the maximum licensed concentration of radioactivity in the drums is about one hundred times higher than that of low-level waste as defined by the Atomic Energy Commission. This high concentration makes the surface γ-ray dose rate quite high, and the 200,000 drums may expose the workers of the facility and even near-by residents to a quite dangerous radiation level. (There is an athletics park in the direct vicinity). In addition, the liquid waste resulting from cleaning the contaminated drums may seriously contaminate Obuchi marsh.

The drums are dumped in shallow underground pits with control walls. While JNFI and STA (Science and Technology Agency) claim that the facility will be strictly controlled for 300 years, application documents state that radioactive release and groundwater contamination is to be monitored only for 30 years. According to my calculations, a local resident drinking well water would be exposed to more than 20 rems a year (200 times higher than the dose limit for the general public) if the radioactive contents of only 3 of the total 200,000 drums leaked and contaminated the ground water.

Such a leak is highly likely in the long term in view of the geological instability of the region and the past frequency of large scale earthquakes.

4. Reprocessing Plant

It is already widely known that there will be enormous daily radioactive discharges from a large reprocessing plant like Rokkasho, in both gas and liquid form. (See NIT No.11 for discharges from Rokkasho plant). Though JNFS claims that the estimated maximum exposure of residents will be only 2.3 mrems per year, my estimate indicates that a level of exposure a hundred times higher may well be possible.

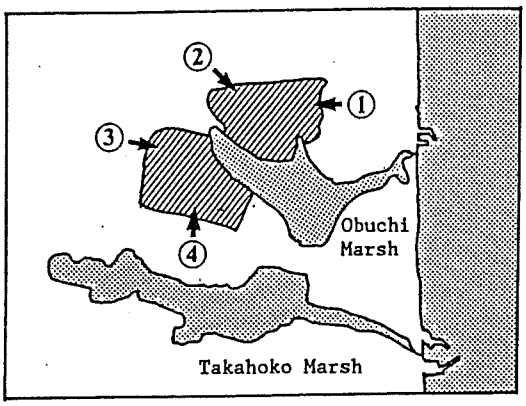
I have also calculated the expected levels of exposure due to accidental releases of radioactivity. Even under the relatively conservative assumption that an accident such as an aircraft crash, earthquake, or loss of coolant caused only the radioactive nuclides contained in $1m^3$ high level liquid waste stored in a $120m^3$ storage tank to be released into the air due to damage of the tank, the contamination zone would spread far beyond Tokyo, as shown in Fig. 2.

The whole of Aomori prefecture would have to be evacuated and the contamination of green vegetables would likely exceed 1,000 Bq Cs-137/kg even 1,000km downwind. This indicates that a single major accident at the Rokkasho plant would have a catastrophic effect on the whole Japanese population. It should also be pointed out that, while the utilities are now likely to lose interest in constructing a large reprocessing plant, due to lack of demand for the plutonium (see NIT No.20), they still want to build the plant for storage of spent nuclear fuel.

5. Radwaste Management Facility

This is an intermediate storage facility for the vitrified high level wastes resulting from the reprocessing of Japanese spent fuel in France and U.K. Worthy of special mention is the fact that a large geological fault lies directly under this facility, where the radioactive wastes from more than one thousand tons of spent fuel are to be stored.

Fig. 1.



1 Uranium Enrichment Plant
2 Low Level Radwaste Storage Center
3 Reprocessing Plant
4 Radwaste Management Facility

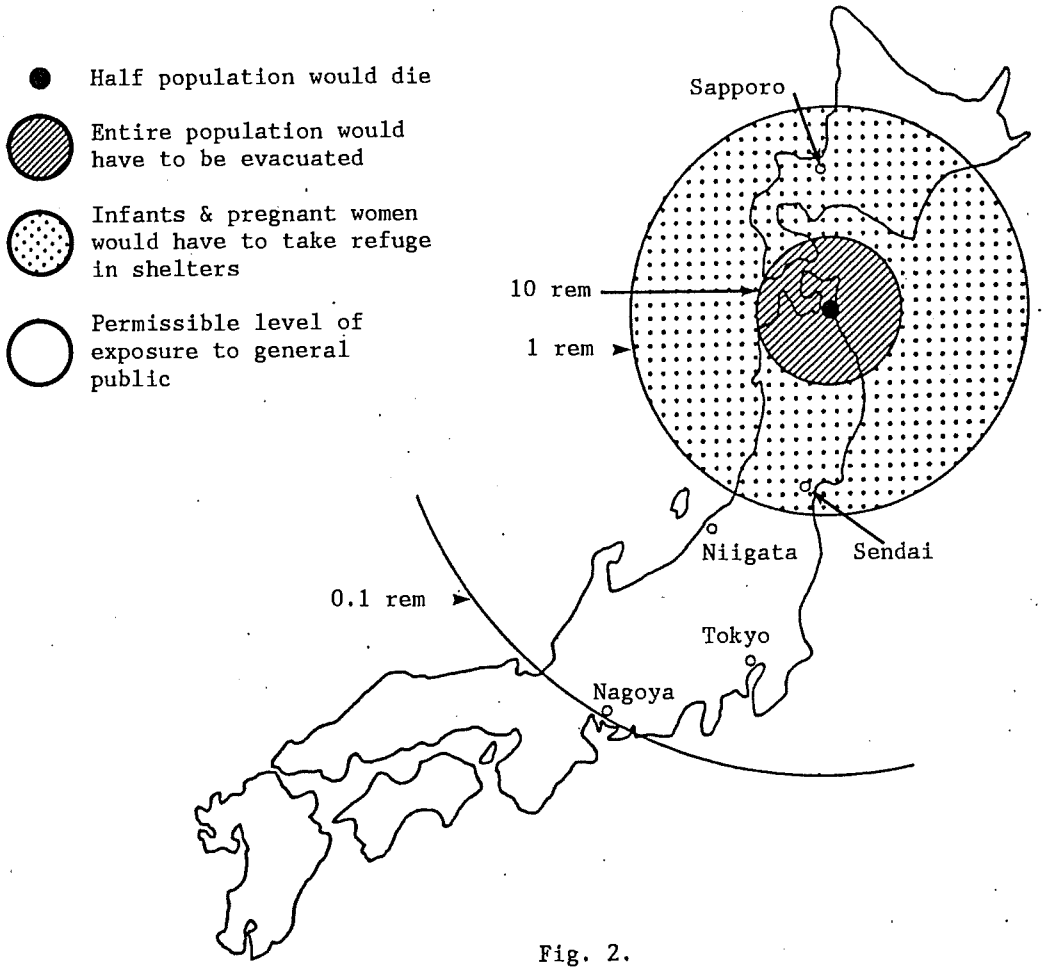


Fig. 2.

Table: Facilities in Rokkasho

Name	Company	Purpose	Capacity Initial	Capacity Future	Present State
Uranium Enrichment Plant	JNFI[1]	enrichment	tSWU 600	1,500	under construction
Low Level Radwaste Storage Center	JNFI	shallow disposal	200,000 drums	1,000,000	under construction
Reprocessing Plant	JNFS[2]	reprocessing storage of fuel	800 3,000	- -	undergoing licensing procedure
Radwaste Management Facility	JNFS	intermediate storage of HLW	1,440 canisters	-	undergoing licensing procedure

1) Japan Nuclear Fuel Industries, Inc.
2) Japan Nuclear Fuel Service, Co.

Horonobe Situation Still Unsettled

The situation surrounding the high-level-waste repository plan in Horonobe is getting more complicated than ever. Although the Horonobe town council is in favor of the repository, believing it would solve the town's depopulation problem, the Hokkaido Prefectural Assembly is against it, and passed an opposing resolution last July. The 6 surrounding towns are also opposed to the plan.

The PNC (Power Reactor & N-Fuel Development Corporation) and the Science & Technology Agency are said to have promised the mayor of Horonobe they will go ahead with the plan if one of the following conditions is met: 1) The Governor of Hokkaido, who opposes the plan at present, is toppled at the next election. 2) The Liberal Democratic Party wins a majority of seats in the Hokkaido Prefectural Assembly. 3) A majority of the surrounding towns pass resolutions supporting the plan.

One neighboring town, Toyotomi, passed such a resolution in June, in the absence of members opposing the repository. Nearly 80% of the town's residents are against the plan and immediately started moves to expel the 2 members responsible for the resolution. A referendum took place on Nov. 25 and the 2 members were duly expelled from the town assembly.

Soon after the Toyotomi referendum, on Dec. 2, a mayoral election was held in Horonobe as the present mayor's term had expired. The present mayor, who is in favor of the repository, took 1,226 of the 2,451 votes cast, and was reelected.

The PNC was relieved at the result, but the Hokkaido Governor has announced he will not go back on his policy of rejecting the hazardous plan. □

International Uranium Forum in Aomori

Prior to the start of the Aomori Gubernatorial election campaign on January 14, the International Uranium Forum was held January 11 and 12 in Misawa City and January 13 in Rokkasho-mura. Misawa is only 30km south of Rokkasho-mura and is home to a huge American Air Base. The Forum was organized by an ecological and spiritual publisher, Yaso-sha as a part of the "Stop N-Fuel Cycle Action '91" campaign.

Speakers from abroad included seven native people from the United States and Canada and activists from Sweden and the United States. Japanese speakers included an activist from Ningyo-toge, the former uranium mining area, Dr. Takagi from Citizens' Nuclear Information Center, and a member of the Upper House from Aomori.

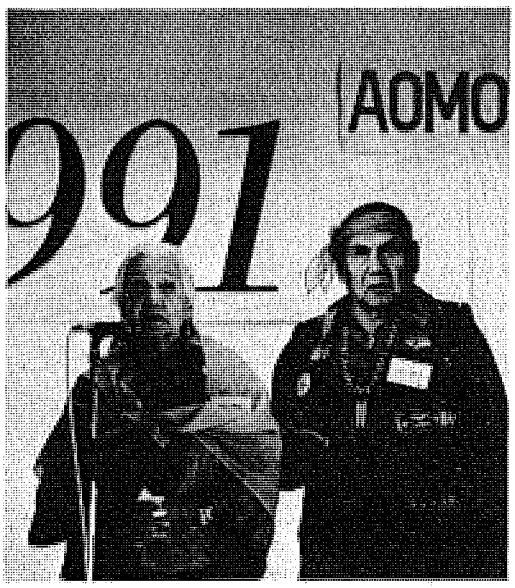
Philip Harrison is a Navaho activist from New Mexico, who has dedicated himself to helping ex-miners and their families. He himself lost his father who used to work in the uranium mines in the 50's and 60's. According to Harrison, of the 1,300 Navaho people who worked in the uranium mines on the reservation, half have already died from lung cancer and the number of deaths is increasing.

Rosalie Tsannie, from Northern Saskatchewan Canada, the world's No.1 uranium production area, is a teacher in the Wallaston Lake Community where she lives. About 80 percent of the 850 residents are native Dene people whose traditional way of life was trapping, hunting, and fishing.

One of the three mines in operation in Northern Sask. is located about 40km from her community on the lake. In November, 1989, there was a leak of millions of gallons of radioactive waste water which ended up in the lake. The company got away with a $10,000 fine. The community is now demanding a public inquiry into the leak, but the government has been refusing to conduct it.

Mr. Ishio from Ningyo-toge also described the deaths of former uranium miners and the huge pile of radioactive waste and tailings that still contaminate nearby soil and water. There is also a uranium enrichment pilot plant in the area. In 1987 there was a leak of hydrogen fluoride gas near the plant as a tank was dropped from a truck, causing the evacuation of 78 local residents.

The speakers demonstrated the hazards of uranium mining as well as nuclear accidents, and urged the 100 or so participants to stop the nuclear fuel cycle facility in Rokkasho-mura.



Nuclear Build-up in North Korea?

As preliminary talks on "normalization" of relations between Japan and the Democratic People's Republic of Korea (North Korea) began in November, 1990, the question of the inspection of nuclear facilities inside North Korea began to draw attention. North Korea became a signatory to the Nuclear Non-Proliferation Treaty (NPT) in 1985. However, it has not yet ratified the "safeguard agreement" with the International Atomic Energy Agency (IAEA), which it should have done, according to the NPT terms, within 18 months after signing.

N. Korea's refusal to accept IAEA inspection has been one of the obstacles that has crippled attempts to "normalize" relations with USA. N. Korea insisted that the US military immediately withdraw all nuclear weapons stored in its South Korean bases before it could agree to IAEA inspection. The US, however, would not comply. The US hopes that Japan, with which N. Korea seeks to establish normal relations, will exert strong pressure on N. Korea to agree to inspection.

However, in talks with Japan and the IAEA, N. Korea, while it still insists on a bilateral agreement with the US before agreeing to inspection, has toned down its demands to a promise from the US not to use its nuclear weapons against the country.

North Korea claims that it has neither the desire nor the capability for nuclear development. According to reports, however, N. Korea sent a threatening note to the USSR just before September 30, 1990, when the latter established relations with South Korea, saying it would no longer be bound by any obligation not to produce nuclear weapons if the USSR opened relations.

The USSR has assisted in N. Korea's nuclear development. It agreed, in 1985, to export nuclear power plants to N. Korea but, as relations worsened, this agreement was 'frozen.' In November 1990, the USSR accused N. Korea of planning to build a nuclear power plant in Sinpo, in the northern part of the country.

In September, 1990, the State Department notified the Japanese government of the following 'facts': 1) Within a nuclear facility located in the mountainous Yongbyong district 88km north of Pyongyang, a nuclear reprocessing facility is being built. The exterior is almost completed. Construction work is being carried out slowly and the facility is likely to start full-scale operation around 1995.
2) A 10-30 MW Soviet-made nuclear reactor has been operating since 1987. Another 50-200 MW French-made nuclear reactor is planned to be completed by 1994. These facilities lack the power transmission lines that would be necessary if they were built to supply electricity. 3) The above facilities, guarded by heavily armed personnel, are surrounded by mountains and kept 'invisible'. □

South Korea to build second CANDU reactor

The Korean Electric Power Co. (KEPCO) announced it concluded an agreement December 28, 1990 with Atomic Energy of Canada, Ltd. to construct a CANDU reactor for Wolsong No. 2 N-plant. Wolsong No.1 reactor, also a CANDU reactor, began operation in 1983, but has suffered numerous problems including a succession of heavy water leaks. □

Anti-Nuke Who's Who

Fusaichi Hirono of Ikata

Ikata Nuclear Power Plant was built and is operated by the Shikoku Electric Power Co. Ikata faces the Seto Inland Sea at the west end of the island of Shikoku. Reactor No.1 began generating power in September 1977, and Reactor No. 2 in March, 1982. Both are PWRs with outputs of 566MW year after it started up, Reactor No. 1 suffered a radiation emission accident caused by a primary cooling water leak, and this was followed by a succession of accidents involving damage to steam generator tubes. Reactor No. 2 has also had problems with metal parts breaking or coming loose. During October 1987 and February 1988, the plant ignored local opposition and conducted load following experiments with Reactor No.2. However, these experiments provided the occasion for an unprecedented manifestation of anti-nuclear sentiment; in less than a month more than one million opposing signatures were collected from all over Japan, and on two occasions several thousand people surrounded Shikoku Electric's main office to voice their opposition to the experiments. Although Shikoku Electric went ahead with the experiments anyway, a subsequent result was that the two anti-nuke groups in the Ehime area suddenly increased to 13 from 2. These organized the "Good-bye Nuclear Power Network" in Ehime Prefecture and the Shikoku region.

Mr. Hirono Fusaichi, featured in this issue, is both chairperson and oldest member of the Ikata Nuclear Plant Opposition Hassei Liaison Council. Mr. Hirono, who was born in 1912 in Ikata Town, is a farmer who still, at the age of 77, works hard to produce mandarin oranges. He has also worked for over 30 years at the local Machimi Agricultural Cooperative, where he has in the past served as director and consultant.

It was while he was director of the cooperative that people first heard a nuclear power plant would be built in Ikata. From that time on, Mr. Hirono has worked for the opposition movement, insisting that "We must not allow Ikata town or future generations to be contaminated by radioactivity: Nuclear Power and humanity cannot coexist." Mr. Hirono also owned land within the original planned site. When he refused to sell up, the plant had to be resited to exclude his land. One cannot speak of the Ikata Nuclear Power Plant opposition struggle without mention of Mr. Hirono.

Says Mr. Hirono: "Although the pro-nuclear local government and the power company agreed that just two reactors would be built in Ikata, they are now pushing ahead with the construction of a third. If they can't even abide by their own agreement, there's no reason to believe they will keep their promise to operate the plant safely. Unless we make them immediately remove the two existing reactors and stop construction of the third, this area which is our home will no longer be a place where people can live with any peace of mind." Even now Mr. Hirono can be seen with a microphone delivering streetcorner anti-nuke addresses to local residents in ringing tones that belie his age. □

NEWS WATCH

Poll shows 90% afraid of N-Power

The Prime Minister's Office December 23 published the results of an opinion poll on nuclear power. This shows that people are now more uneasy about, and more opposed to nuclear power than they were at the time of the previous poll in 1987 (in parenthesis).

* Worried about nuclear power:	90% (86%)
Not worried about nuclear power	6% (8%)
*On the future of nuclear power:	
Should be positively promoted:	5% (7%)
Should be cautiously promoted:	44% (50%)
Opposed to additional construction:	30% (23%)
Should be reduced:	9% (8%)
Should be completely abolished	3% (2%)

Kubokawa Council cancels Feasibility Study

The Town Council of Kubokawa, Kochi Prefecture, passed a resolution December 25, demanding that the mayor immediately cancel the agreement concluded between the town and Shikoku Electric Power Co. six years previously, to conduct a feasibility study for a nuclear power plant site. The former mayor had promoted the plant but abandoned the plan and resigned in 1988. The newly elected mayor is against nuclear power.

Second Asian Confab to be held in March

The Japanese government is planning to hold the second "International Conference for Nuclear Cooperation in Asia" at the end of March. At the first conference, held a year ago, individual countries merely reported on their current situation. At the coming conference, however, it is rumored that the Japanese government will propose the joint use of nuclear reactors for study purposes. The Japanese proposal will include development of utilization technology and joint usage of experimental reactors for materials irradiation, RI production and other purposes.

PNC locates Uranium mine

PNC has finally succeeded in locating a uranium mine capable of commercialization after a long world-wide search from 1987 in a joint-venture project with Canada & Germany. The Management and Coordination Agency had been criticizing PNC for wasting the national budget.

PNC has located the mine in the Midwest deposit of Saskatchewan, Canada, and announced on Dec. 13 that it would transfer mining rights to a private company OURD (Overseas Uranium Resources Development) of Japan.

Expected production is 1,630 tons a year of uranium ore. (The average concentration of uranium in the deposit is 1.25%, with a maximum of 4.5%.) OURD will be transferred mining rights for 245 tons a year,

in accord with its investment rate of 15%.

Nuclear industry shows profit in services

Findings of the 1989 annual JAIF (Japan Atomic Industrial Forum Inc.) questionnaire survey of the nuclear industry have just become available. Sales had decreased slightly after a period of high growth peaking in 1984. In the 1989 business year, however, they not only returned to the 150 million yen level for the first time in five years, but improved a little on 1988 and achieved a new record. Actually sales of nuclear reactor equipment declined while sales in the service sector increased sharply. Sales related to the construction of nuclear fuel cycle facilities also went up.

Fukushima II-3 restarts despite court battle

The No.3 reactor of Fukushima II Nuclear Power Plant, which had to be stopped for almost two years due to damage to the recirculation pump, restarted commercial operation on December 20. To prevent it restarting, a group of TEPCO stock holders had applied to the Tokyo District Court for a provisional injunction to suspend operation but the court rejected their demand on Dec. 28, days after operation had restarted.

No HLW for Kuchiwa, Hiroshima!

The town assembly of Kuchiwa-cho, Hiroshima Prefecture, December 18 passed a resolution against the introduction of radioactive waste into the town. The Chugoku Mountains, where the town is located, are now being considered as a possible HLW disposal site. PNC has also been studying the possibility of mining uranium in Kuchiwa. The resolution condemned these moves, stating: "the rich nature and safe living environment which Kuchiwa prides itself on would be hard to hand down to our children ... we refuse to allow the introduction of radioactive waste into our town both now and for ever."

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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 $40/year, subscriber $20/year). We would also appreciate receiving information and newsletters from groups abroad in exchange for this newsletter. For domestic subscribers, the rate is ¥3,000/year and for a supporting subscription, ¥5,000/year. The subscription fee should be remitted from a post office to our post office account No: Tokyo 6-185799, HANGENPATU-NEWS or by postal money order.

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