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☞ Citizens' Nuclear Information Center

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Fukushima II-3 Struggles Continue



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Amid strong protests, new fuel was brought in for Fukushima II-3 reactor on August 6 (Hiroshima Day!) and 10. Tokyo Electric Power Company (TEPCO) now only awaits approval from the Nuclear Safety Commission and the two local town assemblies before it can restart the reactor. Meanwhile people opposing the startup have been staging a variety of protests at the gate.

In May, when TEPCO started to conduct a door-to-door campaign telling nearby residents the reactor is now safe and ready for normal operation, some of the local residents, with activists from Tokyo and other areas, started their own door-to-door campaigns. They also collected 7,300 signatures for a petition against the restart of the reactor, representing a little over one third of the total local population. This certainly indicates a change of heart among residents of the local towns, where TEPCO has always had a high profile. For a long time, people have found they had no choice but to accept nuclear power stations. In small, rural towns, it is very difficult to say no to the decisions of the town assembly or the Japanese government.

The serious accident that occurred last January shook the local township. Since then, more and more local residents have been saying no to the reactor. In June some local women took turns staging a hunger strike and letters and telegrams supporting their action were sent in from all over Japan. On July 22, another resident started a hunger strike under the wisteria arbor at the gate of the plant. Other residents later joined the sit-in, and activists from Tokyo and other areas have visited to take part.

The protesters tried to set up a good relationship with the guard and the workers coming in and out of the gate every day. As the days went by, workers started to wave to the protesters at the gate. Local residents hearing about the sit-in from the workers visited the wisteria arbor to show their support and sometimes brought food or drinks. Letters, telegrams, and gifts also started to pour in from all over Japan, which encouraged and pleased "the residents under the wisteria arbor." At night some of them sang songs and danced to keep up their spirits.

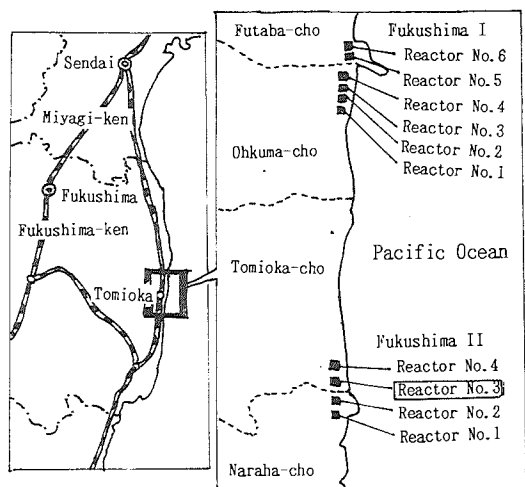
On the last weekend in August a special gathering was held at the

arbor and about sixty people participated. They exchanged information, shared experiences, and conducted a door-to-door campaign in the town. One of the local participants was a high school teacher and activists from other areas were quite moved when he talked of his hardships at school. Many of his students hope to be hired by TEPCO since it is the most prestigious employer in the area. The gathering enabled both local residents and activists from other areas to share their experiences and strengthen their unity.

In spite of the refueling in early August, these people are determined to keep up the pressure on TEPCO and the local assemblies to demolish the reactor.

Now some local residents are asking for a local referendum on whether to resume operation or not and also for a public debate with TEPCO. These demands are not likely to be accepted in the assembly, but this certainly shows the residents have a new awareness of the issues.

On Sunday October 7, the Socialist Party, Japan's second largest party, will hold a rally in the local park and in the afternoon grassroots activists are having a concert at the gate near the arbor. Through these activities they hope to put pressure on TEPCO and local assemblies to demolish the II-3 reactor. □



A Critique of the 1990 ICRP Draft Recommendations for Radiation Standards

The International Commission on Radiological Protection (ICRP) held its general assembly in Washington on June 22, and decided to adopt a series of new recommendations for radiation protection. In their reports of the decision, however, most news media made it appear that the Commission's new recommendations would drastically tighten radiation control in the nuclear industry. For instance, the June 23 issue of the Mainichi Daily News reports:

"Washington (Kyodo) - The annual dose of radiation considered acceptable for workers at nuclear power plants is far too high and should be reduced sharply, an international radiation protection organization said Friday."

Such articles are probably based on the Commission's press release, which was intended to avert criticisms that the ICRP is too industry-oriented and does not fulfil its function as an organization for protecting workers and the public from radiation hazards. What is most likely to happen, in fact, is that the ICRP will issue a new publication by the end of this year, recommending essentially that the much-criticized present standards be retained.

The proposed new recommendations are based on the draft reports prepared in February of this year by an ICRP task group headed by ICRP chairman D. Beninson (Recommendations of the Commission - 1990, ICRP/90/G-01). Since the publication of the 1977 recommendations, known as ICRP Pub.26, which now forms the basis of radiation regulations in most countries including

Japan, the ICRP has come in for sharp criticism, mainly because Pub.26 neglects some important studies conducted at actual work places, such as the investigation of T. F. Mancuso et al. which disclosed the high cancer mortality of exposed workers at the Hanford nuclear facilities. These neglected reports suggested there was a need to drastically tighten radiation regulation standards, probably by an order of magnitude or even more.

Also, since the 1977 recommendations were published, a joint US-Japan team conducted a review study of atomic-bomb radiation doses at Hiroshima and Nagasaki and compiled the results in a document called DS86 in 1986 (see NIT No.2). These results, together with the latest records of ever-increasing cancer deaths among atomic bomb survivors, undoubtedly suggest that the cancer causing effect of low-level ionizing radiation is far greater than has hitherto been accepted.

The change in risk estimates can be seen clearly in Table 1. The table shows the estimated "risk coefficient" for radiation-induced fatal cancer per 10,000 person·Sv (Sievert), where the risk coefficient is an index of the cancer-causing effect of radiation, expressed as the number of cancer deaths caused by a population dose of 10,000 person·Sv (one million person·rem). A population dose of 10,000 person·Sv corresponds to exposure of 10,000 persons to 1 Sv each or of 100,000 persons to 0.1 Sv each. It is believed that the cancer incidence is approximately proportional to the amount of population exposure.

Table 1 shows that recent estimates are about 10 times higher than the old ones, with the single exception of the ICRP 1990 estimate given in the February draft report. It should be noted that the ICRP has reached a risk estimate half as low as the estimates of other organizations, in spite of the fact that it based its estimate essentially on the same data, especially on the recent A-bomb survivor studies known as LSS (life span studies). The ICRP's reasoning for its low estimate is not backed by evidence and does not appear to bear close scientific scrutiny.

What are more controversial are the new recommendations for dose limits. The proposed annual dose limits shown in Table 2 are essentially the same as the 1977 recommendations, despite the fact that the Commission's own estimate of radiation-induced cancer risk has now increased by a factor of 4 to 5 (see Table 1). The only change towards tighter standards is the additional limit of 100 mSv over 5 years added to the existing limit of 50 mSv per year that is retained in the new recommendations. This 5 year limit, when considered over a 5 year period, means a 60% reduction in the annual dose limit. It will not, however, do much to protect subcontracted workers who comprise most of the Japanese radiation workforce, since they are employed under short term (1 year or less) contracts.

In addition, some other proposed dose limits not included in Table 2, such as an occupational exposure limit in the event of an emergency, are even looser than the existing limits. To our surprise, the raising of the occupational emergency exposure limit is one of the "lessons" ICRP has learned from the Chernobyl Accident.

The Commission should have recommended that the annual limit be cut at least by a factor of 4 to 5, if it were faithful to its own assessment that the 1977 estimate of radiation risk was underestimated by

this factor.

To summarize, recent studies clearly point to the necessity of reducing the annual dose limit at least by a factor of 10, and the 1990 draft recommendations of the ICRP are not acceptable from the point of view of protecting workers and the public from radiation hazards. The Commission's proposals not only contradict recent scientific findings but are inconsistent in themselves.

The ICRP has presumably reached its controversial conclusion because it thinks that stricter standards would jeopardize the already declining nuclear industry to the point where its very subsistence was under threat.

Anyway, the final recommendations are yet to be released. In the meantime, we ask our readers to write to the ICRP, asking it to change its industry-oriented stance and return to its original role as an organization for radiological protection.

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(note) After writing this article, the author has received a new book by Dr. J. W. Gofman: Radiation - Induced Cancer from Low-Dose Exposure - An Independent Analysis. Gofman suggests a risk coefficient much higher than those of UNSCEAR ('88) and RERF ('88) and argues his case in a very persuasive manner, based on independent analysis of recent data relating to the atomic bomb survivors. The author would like to discuss this stimulating work in NIT at the next opportunity.

Table 1. Risk Coefficient for Cancer
(Estimated lifetime mortality from cancer
for a population dose of 10,000 person·Sv)

Source of estimate	Number of deaths	
	Absolute model*	Relative model**
ICRP (1977)	100-125	
UNSCEAR (1977)	100-260	
BEIR-III (1980)	167	501

UNSCEAR (1988)	400-500	700-1,100
RERF (1988)		1,300
BEIR-V (1990)		885
ICRP (1990)	500	

UNSCEAR: UN Scientific Committee on the Effects of Atomic Radiation
BEIR: Committee on Biological Effects of Ionizing Radiation, National Academy of Sciences

RERF: Radiation Effects Research Foundation (Hiroshima)

* This mode assumes that cancer incidence from radiation is independent of natural cancer incidence.

** This mode assumes that cancer incidence from radiation is proportional to natural cancer incidence. Recent reports show that this model fits the actual incidence pattern better.

Table 2. Recommended Dose Limits (ICRP 1990)

Application	Dose limit	
	Occupational	Public
Effective dose equivalent*	100 mSv over 5 years 50 mSv in any 1 year	1 mSv per year averaged over any 5 consecutive years
Annual dose equivalent in		
the lens of the eye	150 mSv	15 mSv
the skin	500 mSv	50 mSv
the hands	500 mSv	50 mSv
Mean dose equivalent to the fetus**		5 mSv after diagnosis

* Actually, this term is changed to "effectance" in the new recommendations, but it is virtually equal to the annual dose in the usual sense.

** This value relates to the occupational exposure of pregnant women.

Hokkaido Government Opposes HLW Plan in Horonobe

The Hokkaido Government has passed a resolution opposing the construction by PNC (Power Reactor and Nuclear Fuel Development Corporation) of a High-Level Waste Repository in Horonobe City, Hokkaido. The government finally passed the resolution at midnight July 20th, after a long discussion.

This facility would be an intermediate repository to house 2,000 canisters of vitrified high-level waste from Tokai reprocessing plant in Ibaraki prefecture, for 30 to 50 years. As well as this facility, PNC plans to construct a Deep Underground Experimental Facility and a Hot Test Facility, to conduct experiments for final disposal, a dump site to bury 200,000 drums of low-level waste (including TRU), and a Research Center, carry out R&D on the effective use of heat emitted by the vitrified high-level waste. The whole facility would be called a "Storage Engineering Center," and would represent a massive concentration of radioactivity in one place. However, the "Research Center for Effective Use of Heat" appears to be just a "carrot" to win local acceptance and is likely to be of no benefit, but to pose considerable risks, to the local community.

The local town, Horonobe, wants the plan to go ahead, but most of the surrounding towns and villages are against it, with the dairy farmers putting up the stiffest resistance.

The majority of Hokkaido residents are also opposed to the plan and the Governor has expressed his opposition many times. But in October, 1985 the Hokkaido Assembly, dominated at that time by the Liberal Democratic Party, adopted a resolution to go ahead with the plan. Nevertheless, some LDP

members did voice their opposition, since they owed much of their support to farmers and fishermen, and PNC was able to do no more than carry out a boring test as part of a feasibility study.

However, PNC resumed negotiations with neighboring towns last summer ('89) in an effort to get their approval and make it easier to go ahead with the plan.

Following this, local residents, Hokkaido citizens' groups and unions opposed to the plan started to negotiate with members of the Hokkaido Assembly from all parties to table a resolution. Although the LDP had lost seats on the Assembly in the spring '87 election, the Democratic Socialist Party, supported by the unions of Hokkaido Electric and the nuclear related industries, would not consent to an opposing resolution, and the issue could not even be debated in the Dec. '89 or March '90 sessions of the Assembly.

The resolution was finally passed this July, supported by 57 Japan Socialist Party, Komei-to, DSP and Communist Party members and opposed by 48 LDP members.

The LDP tried hard to block the resolution by asking the Secretary of the Science & Technology Agency to declare that the "Storage Engineering Center will not become a final disposal site" and proposing a "Resolution against a Final Disposal Site" on the last day of the session.

But all their efforts proved to be in vain, as the people of Hokkaido knew the dangers posed by the facilities and that once they are built, they will eventually be turned into a final disposal site.

This is the first resolution opposing a nuclear facility ever to have been passed by a prefectural assembly. □

Anti-Nuke Who's Who



Kyoko Kimura of Fukuoka

Kyoko Kimura is an feminist and anti-nuke activist living in Kyushu, the southern island of Japan. There are two nuclear reactors in Genkai (PWR 550MWe each) on the northwest coast of Kyushu, about 56Km west of Fukuoka City where Kyoko lives. Genkai 3 and 4 are now under construction. For the last eight years Genkai 1 has had serious problems due to corroded tubes in the steam generators. As many as 2,519 of the 6,776 tubes have been damaged. Of these damaged tubes, 776 have been plugged and 1,743 have been fixed by the "sleeve-repair method," in which new tubes are inserted into damaged ones. Anti-nuke groups in Northern Kyushu have been asking Kyushu Electric Power Company to find the cause of the trouble and decommission the reactor.

Kyoko thinks it is a threat to people's lives to continue operating the reactor and strongly hopes it will be stopped. Last summer both Genkai 1 and 2 were closed down for annual inspection and weren't generating electricity, but there was no shortage. This proved that even at the time of peak electricity consumption when people use air conditioning on hot summer days, two reactors weren't really necessary. However, Kyushu Electric wouldn't admit this and are now building two

more reactors.

In 1980, one year after the Three Mile Island accident, Kyoko and several other women formed the "Women's Forum for a Nuclear-free World." This group distributed the newsletter "Spiderwort News" which proclaimed in the first issue: "we are not interested in just obtaining scientific knowledge and becoming specialists on nuclear power. Rather we would like to start working towards liberating ourselves as women. We would like to value the creativity and ideas of each member."

Kyoko's mother was living in Nagasaki at the time of the bombing and Kyoko was born two years later. When she was in grade three in senior high school a male student a year younger than herself died from leukemia. The incident showed her the threat that second generation Hibakushas (Atomic bomb survivors) are living under. To her it was natural to think that nuclear power also has its problems. But it wasn't because she is a second generation Hibakusha that she started to fight against nuclear power. She had other reasons as well, to do with being a woman living in Japan.

Then last summer she had a chance to meet with Hibakushas in Nagasaki and to learn of their anti-nuclear power stance, based on their experiences as Hibakusha. They said that "we are the ones who know most about the effects of radiation. More exposure just means faster death." They have been demanding that the government admit its responsibility for the war and give Hibakushas medical and social assistance. The government has been ignoring their demands and many Hibakushas are forced to live in silence and poverty. Kyoko realized that the government had to keep them quiet in order to develop and promote nuclear power in Japan.

To her, choosing a life without nuclear power is to act radically for freedom, human rights, and our precious lives. □

Workers' Radiation Exposure in 1989

The radiation exposure dose from nuclear plants in Japan, although it has shown some fluctuation, is tending to decrease as a whole. One possible reason for this trend is that the anti-nuclear movement has continuously called for stricter regulation of workers' exposure. The electric companies' labour union, though it is not against nuclear power generation itself, has also demanded that the exposure rate be lowered as far as possible. Consequently, the electric companies have had to decrease the rate of exposure by introducing robots.

However, in spite of the lower exposure rate as a whole, workers at reactors with a high incidence of trouble are getting higher doses. Robots cannot cope with accidents or breakdowns and workers have to go into the area of the trouble to do the repair work. In addition, since the labour union represents only the company's regular employees, it's demands to lower the level of workers' exposure merely encourage electric companies to subcontract the dirtier jobs. As a result, the level of exposure among subcontracted workers continues to increase, accounting for 96% of total workers' exposure in FY1989.

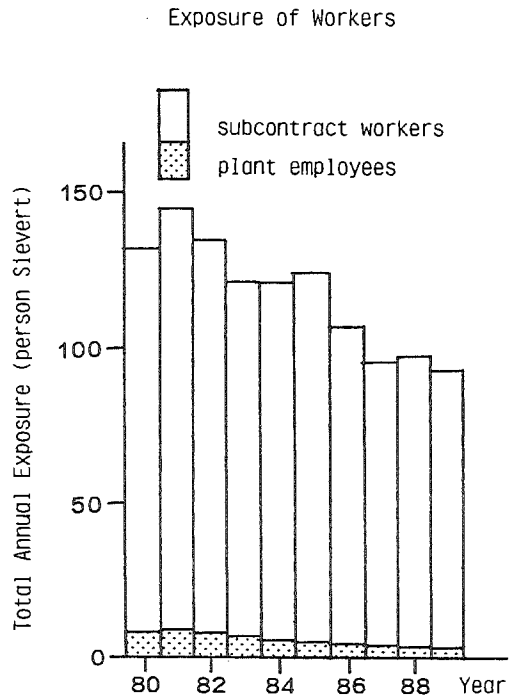


TABLE: NUMBER OF WORKERS AT DIFFERENT EXPOSURE LEVELS

year	kind of workers	< 5mSv	5~15mSv	15~25mSv	25~30mSv	total
1988	plant employee	5,450	116	1	0	5,567
	subcontract	44,334	5,591	821	33	50,779
	total	49,784	5,707	822	33	56,346
1989	plant employee	5,977	63	0	0	6,040
	subcontract	44,894	5,338	642	28	50,902
	total	50,871	5,401	642	28	56,942



Maruki Museum Lamps Lit by Solar Power

The Maruki Museum in Saitama prefecture, which houses the famous masterpiece "Genbaku no Zu" (Hiroshima Panels), painted jointly by artists Iri and Toshi Maruki, has had its power supply cut off by the Tokyo Electric Power Co. The Marukis refused to pay 24% of their electricity bill, equivalent to the ratio of nuclear plants to the total number of plants operated by Tokyo Electric, as a token of their protest against nuclear power. They have been generating their own electricity using liquefied petroleum gas, but recently a 10MWe solar photo electric generator was installed at the museum, and on August 6 a ceremony was held to celebrate their new solar-powered lighting system.

Fishermen Veto Hidaka Nuclear Power Plant Again

Since March 1988, when the fishermen's cooperative of Hidaka-cho, Wakayama prefecture vetoed preparatory research by Kansai Electric Power Inc., which planned to build a nuclear power plant there, it has been under constant pressure from the mayor of Hidaka to go back on its decision. After a "last request" by the mayor, whose term was about to expire, fishermen's representatives held a meeting on September 3 this year. The meeting heard few voices in favor of the plan. Loud applause was given one woman who commented "We have had a hard time for 26 years, split into two groups: for

and against the planned nuclear power station. No more fighting, please!" This led the eleven board members of the cooperative unanimously to reaffirm its refusal to allow preparatory research.

A mayoral election will be held later this month (September), and both prospective candidates have promised in public "not to push forward with the nuclear plan."

Petition to Demand NO-HLW Regulation for Okayama Prefecture

A signature collecting campaign in Okayama prefecture, where there are rumored to be plans for a high-level radioactive waste disposal site, has gathered 340,000 signatures, 24% of the electorate. Since the campaign was conducted under the Local Government Law, it was subjected to severe conditions. But during the two months from June 15, it attracted a large number of supporters. After inspection by the local Election Control Commissions, the signatures will be submitted to the prefectural assembly.

Radioactivity Detected in Titanium Waste

Radioactivity has been detected in the wastes disposed of by titanium manufacturing plants in various parts of Japan, and this has become a big social issue. The problem was first brought to light when a citizens' group in Okayama prefecture used a survey meter to measure the level of radioactivity at an industrial waste dumping site, and detected 5 micro-Sieverts per hour of radioactivity. Since the Okayama waste was a product of the refining

process of titanium oxide from ilmenite, it was decided to measure the waste from titanium plants in other parts of Japan.

The radioactivity seems to be of the thorium series, since monazite ore, which contains a high level of thorium, is also recovered when ilmenite is mined.

This unexpected source of radioactivity has exposed the inadequacy of existing controls on radioactive emissions. The only action government agencies (Science and Technology agency, Ministry of Health and Welfare, Ministry of International Trade and Industry and Ministry of Labor) are yet taking is to measure the radioactivity of ores at the time they are imported and to use ores with as low level of radioactivity as possible.

Maki Mayoral Candidates Compete for Nuclear Freeze Vote

Maki-machi in Niigata prefecture held an election for town mayor, on August 5. Tohoku Electric Power Co. has been planning to build a nuclear plant in the town, but licensing of the plant has been suspended since there is little prospect of acquiring the land for the site due to strong local opposition.

At first the incumbent mayor was the only candidate and it was assumed that he would be reelected

without a vote. In July, however, the former mayor announced he would also stand, and pledged to freeze plans for construction of the nuclear plant. Taken off guard, the incumbent mayor then promised a similar freeze, and in the end he was reelected.

Both the incumbent and former mayors were originally active promoters of the nuclear power plan. The reason they fell over themselves to make such pledges was that the local constituency had become so negative towards nuclear power that they could never have won a competitive election without doing so. Even the local Chamber of Commerce, which has been the principal advocate of the plan, has now begun to say that no development can be expected for the town so long as it depends on a nuclear plant which is unlikely to be built.

Mutsu Fails Tests Again

The nuclear-powered ship Mutsu left Mutsu city, in Aomori prefecture, on July 10 only to return home after a fruitless voyage. It was the first time she had sailed under nuclear power for twenty-one years, since her first voyage in 1969, but successive troubles forced crew to shut down the reactor and on July 30 Mutsu headed home with the help of an auxiliary boiler.

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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 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.

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