

NUKE INFO TOKYO

Dec. 1987 — No. 2

56 Citizens' Nuclear Information Center

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TOKYO RALLY DRAWS A CROWD

About 1,200 people rallied in Tokyo on Sunday, October 25, to speak out against nuclear power. The event foreshadowed "Nuclear Power Day", which was held on October 26. This day, sponsored by utility companies, commemorates the first day of operation of Japan's first power demonstration reactor in 1963. Every October, anti-nuke groups throughout Japan stage a multitude of events to counter the propaganda campaign that utility companies wage at this time of year.

This year's rally in Tokyo was sponsored by "Stop Nuclear Power! Tokyo Action '87," a liaison organization of about 60 groups. Highlights of the rally were creative dancing and music, as well as a play that elementary and junior high school students had produced themselves. In addition, reports from the First Global Radiation Victims Conference, held in New York in September, and reports from the symposium on Environment and Literature, held in Irkutsk near Lake Baykal in the USSR in August, were given.



After the rally, protesters took to the streets of Ginza, one of the most popular areas for shopping in Tokyo, with colorful banners and placards, and handed out anti-nuclear leaflets to passers-by. Some of the protesters surrounded the head office building of the Tokyo Electric Power company, one of the largest companies in Japan. They wore barrels made of cardboard stamped with radiation marks. These barrels represented radioactive waste drums.

Since the Chernobyl accident, the anti-nuke movement in Japan has had a surge at the grassroot's level. Women and children especially have been participating in growing numbers in anti-nuke rallies like this one. ○

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REASSESSMENT OF ATOMIC BOMB CASUALTIES STRONGLY SUGGESTS A HIGHER RADIATION RISK

J. Takagi

Citizens' Nuclear Info. Center

Cancer risk estimates for exposure to low-level ionizing radiation by UNSCEAR (United Nations Scientific Committee on the Effects of Ionizing Radiation) and ICRP (International Commission on Radiological Protection) depend largely on the dose-effect relationship observed in atomic bomb survivors.

A dosimetry system called T65D (Tentative 1965 Dose) has hitherto served as the basic data for this purpose. Recent reassessment of atomic bomb radiation, however, has resulted in a significantly different and more reliable dosimetry system called DS86.¹

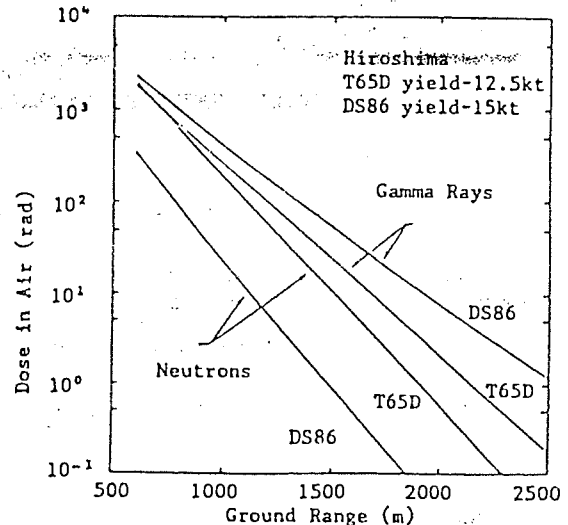
The main differences between DS86 and T65D doses in air are:

- (1) For gamma-rays in Nagasaki there is no significant difference between DS86 and T65D. As to neutrons in Nagasaki DS86 doses are smaller by factor 2 to 3 than T65D doses.
- (2) For Hiroshima DS86 gives 2 to 3.5 higher gamma-ray doses, while neutrons doses in DS86 have been reduced to about 1/10 of the T65D doses.

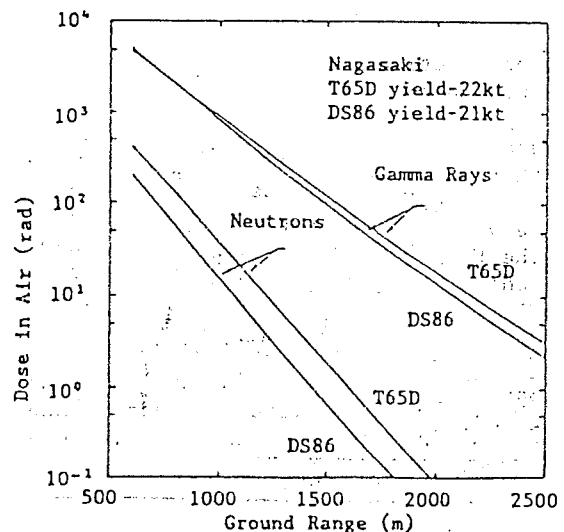
There have also been some changes in assessment of shielding effect of houses and of absorption in organs.

What is the overall effect of the changes in the dosimetry system on radiation risk estimates? On this topic a very important paper was published in August by D. L. Preston and D. A. Pierce.² It was a technical report for RERF (Radiation Effect Research Foundation, Hiroshima). The paper deals with the effects of changes in atomic bomb dosimetry on cancer mortality risk estimates. When the paper was published in August, RERF reported its implications to the news media:

"In terms of total kerma (essentially whole-body gamma-ray plus neutron exposure), the risk estimates for both types of cancer are 75%-85% higher with



COMPARISON OF DS86 AND T65D VALUES FOR THE NEUTRON AND GAMMA-RAY KERMA IN HIROSHIMA



COMPARISON OF DS86 AND T65D VALUES FOR THE NEUTRON AND GAMMA-RAY KERMA IN NAGASAKI

the new dosimetry.... Without regard to RBE, the risk estimates for total organ dose are essentially unchanged by the dosimetry revision. However,

with increasingly assumed values of RBE, the estimated low-LET risk decreases much less rapidly under the new dosimetry, due to the smaller neutron component. Thus at an assumed constant RBE of 10, for example, the effect of the dosimetry revision is to increase organ dose risk estimates, relative to those based on the old dosimetry, by 30% for nonleukemia and 80% for leukemia. At an RBE of 20 these increases are 72% and 136%, respectively."

These findings lead us to believe that the necessary revision of the present UNSCEAR/ICRP cancer risk estimates is no more than about 100% (factor 2), although a reduction by factor 2 of the permissible dose limit might be significant enough to the nuclear industry.

However, the paper contains more important considerations which was not included in the summary given to the media. With respect to the lifetime risk estimates for nonleukemia cancers, the paper reports the following:

"Some results, in units of death per 10,000 persons at an exposure of 10 mSv are (for different assumptions of neutron contribution):

RBE*	Linear† estimate	Range suggested†† by use of UNSCEAR factors for low-dose extrapolation
5	16.7	5.6 - 11.1
10	16.2	5.4 - 10.8
20	15.2	5.1 - 10.1

And for leukemia, the mortality risk estimate in the same unit is:

RBE*	Linear† estimate	Range suggested†† by use of UNSCEAR factors for low-dose extrapolation
5	1.3	0.4 - 0.9
10	1.2	0.4 - 0.8
20	1.1	0.4 - 0.7

* RBE is the "relative biological effect" of neutrons as compared to γ ray.

† Mortality risk estimate obtained by assuming a linear relationship between radiation dose and cancer mortality.

†† Mortality risk estimate obtained by assuming a non-linear dose effect relationship.

The implication of these results is quite evident. The tables suggest a cancer mortality rate higher by a factor of 5 to 17 than the estimates of UNSCEAR/ICRP of 1 per 100 persons Sievert for all kinds of cancers including leukemia.

This change is partly attributable to the change in dosimetry, but also to the large increase of cancer deaths in atomic bomb survivors in recent years. Even after more than 40 years from the time of the bombing, cancer incidences and deaths are being observed among survivors! Thus, we have to consider even the revised estimates mentioned above as still tentative, and realize that further upward reassessment may still be necessary in the future. (The large uncertainty attached to the above estimates comes from different assumptions about the dose-response curve, which are not dealt with here).

The new risk estimate is very close to the ones proposed by several scientists based on actual experiences of nuclear plant workers and nuclear weapons test victims. This agreement calls for the immediate revision of the present radiation regulations which have been based upon ICRP recommendations. □

¹ US-Japan Joint Reassessment of Atomic Bomb Radiation Dosimetry in Hiroshima and Nagasaki, Final Report (1987).

² D. L. Preston and D. A. Pierce, The Effect of Changes in Dosimetry on Cancer Mortality Risk Estimates in the Atomic Bomb Survivors, RERF TR9-87 (1987)

³ D. L. Preston et al.: Life Span Study Report 10: RERF TR1-86 (1987).

IMPORTED FOODS CONTINUE TO BE CONTAMINATED

Following the Chernobyl accident, fall-out could be observed in Japan, 8,000 km away from the damaged reactor. Although the level of radiation observed here was approximately 1/100 of the radiation counted in Europe, it was too serious to be ignored; e.g. significant level of I-131 was observed - up to 500 Bq/ℓ in rain-water, 400 Bq/Kg in spinach, 25 Bq/ℓ in cow's milk.

Today the fall-out effects seems to have become less apparent, except in some areas of Japan. High levels of radiation have been found in tea-leaves: 227 Bq/Kg in 1986 & 9.1 Bq/Kg in 1987. Some tea-planters voluntarily dumped their product because of this.

A matter of concern here is that quite a number of imported foods are contaminated. High levels of radio-

TABLE 1. IMPORTED FOODS WITH CONTAMINATION
EXCEEDING THE REGULATION LEVEL
(REPORTED BY THE MINISTRY OF PUBLIC WELFARE)

Date	Foods	Producer	Cesium Concentration
1987. 1. 9	hazel nuts	Turkey	520 - 980
2. 6	bay leaf	Turkey	490 - 720
2. 6	sage	Turkey	1,000 - 2,000
2. 6	cattle(intestine)	Finland	440
2.13	reindeer(caribou) meat	Sweden	389
3.27	thyme	France	1,715
3.27	sage	Turkey	1,198
5. 8	bay-laurel	Turkey	496 - 551
5. 8	sage	Greece	1,758
5. 8	heath flowers	France	1,425
5.28	almonds	Italy	408
5.28	chamomile herb tea	Spain	8,780
6.12	rose hip herb tea (linden)	Yugoslavia	673 - 955
6.12	sage	Yugoslavia	497
6.12	black current(pure)	France	425
6.12	sage	Albania	1,895
7.24	hazel nuts(paste)	Italy	390
7.24	hazel nuts(paste)	Turkey	379
8.21	herb heath	France	1,072
9.11	bay leaf	Turkey	1,042
10.21	beef-extract	Ireland	622
10.28	ice cream paste	Italy	417
10.28	dry herb	Yugoslavia	536

active cesium have been observed in various foods imported from Europe. The Ministry of Public Welfare ordered that foods imported from Europe be examined at the ports of entry, and that any item with radiation levels exceeding 370 Bq/Kg or \geq be shipped back. As shown in the table below, twelve occasions of reshipment have been reported so far.

Passing the inspection that the Ministry of Public Welfare requires does not always guarantee safety. Some foods stamped 'safe' showed

levels of radiation exceeding the 'permissive safety level.' Shows Table 2 below examples of radiation levels observed in imported foods. Foods with high radiation included, among other things, Italian spaghetti, West German cheese, spices from Greece & Turkey & Turkish hazel-nuts.

Recently a monitoring center to record the level of radiation contamination in foods was established by a group of citizens desiring to keep watch on the levels of radiation in foods. □

TABLE 2. RADIOACTIVE CESIUM IN FOODS

Foods	Producer	$^{137}\text{Cs} + ^{134}\text{Cs}$ (Bq/Kg)	remark
spaghetti	A Italy	60.0	a
	B Italy	48.9	a
	C Italy	22.2	a
	D Italy	124	a
	E Italy	46.4	b
	F Italy	30.2	b
	G Italy	55.3	b
	H Italy	27.9	b
	I Italy	57.0	b
cheese	J Japan	ND	b
	K Japan	ND	b
	L Japan	ND	b
bay leaf	A West Germany	5.9	b
	B West Germany	16.8	b
chocolate	A Turkey	211	a
	B Turkey	744	a
green tea	West Germany	27.0	b
	Japan	81.7	b

a. measured by K. Ogino and M. Kohno (Kyoto Univ.)

b. measured at Citizens' Measurement Center for Contaminated Foods

ND: not detected

ANTI-NUKE WHO'S WHO



Ms. Fusae Kawazoe
of Sendai, KYUSHU

Women have been playing an increasingly important role in the anti-nuke movement in Japan, as is illustrated by the work of Fusae Kawazoe. Ms. Kawazoe, who lives in Sendai, Kyushu, about a ten minute walk from two 890 MW reactors, has been a leader in the fight against nuclear power.

In 1964, the Sendai city assembly had approved the construction of nuclear power plants that had been proposed by the Kyushu Electric Power Co., Inc. This was before any commercial reactor had begun operation in Japan. At this time, no objections from the citizens of Sendai were made. Most people accepted, without question, the propaganda supplied by the utility company. People were told that nuclear power was the "peaceful use of the atom," and that nuclear reactors would bring "prosperity" to their city. As a result, the company had no difficulty in purchasing the land they needed from local residents.

It was not until 1973, when Dr. S. Kume, from Osaka, was invited to give a lecture on the dangers of nuclear power, that people's consciousness about the Sendai reactor began to be raised. The information Dr. Kume presented to people was much

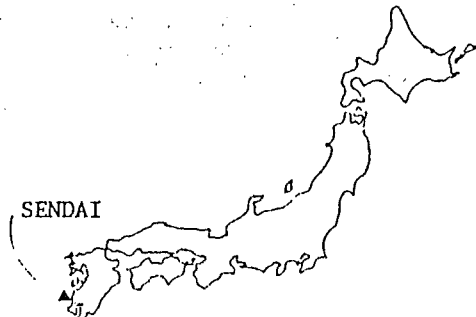
different from the information the utility company had been spreading. It was then that Ms. Kawazoe, herself uninformed until this point, began her campaign.

Sendai is a natural environment, and many residents rely on the ocean and the mountains for their livelihoods. Ms. Kawazoe, and her group of fellow mothers, became determined to stop the construction plans, in order to maintain Sendai's natural environment for their children, and for their grandchildren. They started collecting signatures to show the city assembly the residents' strong opposition to the plans.

They managed to obtain signature from 83 % of the residents. However, the construction went ahead as planned in 1979.

After construction of the plants began, serious social problems started arising that this previously quiet town had never before experienced. Local fishermen were given large amounts of money as compensation, a move that changed their, and their family's life-styles completely. During the construction, there was an increase in car accidents, noise pollution rose, and there were even some killings among the temporary workers at the site. And, the depletion of fish in the nearby sea began.

The Sendai 1 reactor started operation in 1984 and Sendai 2, in 1985. Ms. Kawazoe, a catholic, and a mother of three sons & two daughters, is still active, informing people in other parts of Japan about the dangers of nuclear power, and the social problems that nuclear power plants create. □



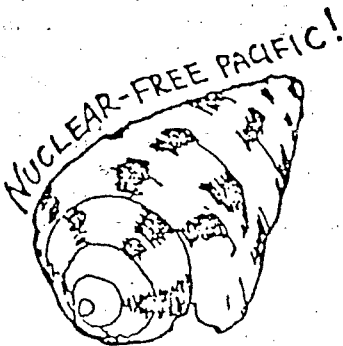
ANTI-NUKE GROUPS ACTIVE AROUND JAPAN

The Nuclear Free
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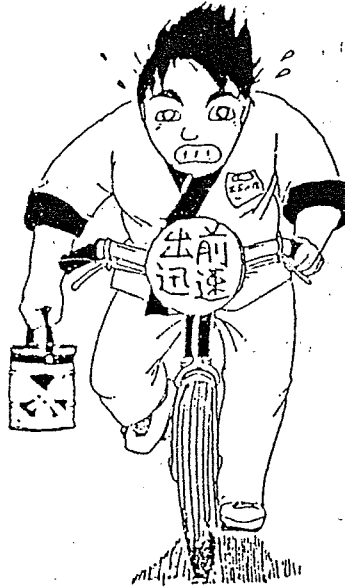
Our group started in 1974 as an anti-pollution citizens' group. We called ourselves "Jishu-Koza," and we were especially concerned about the "export" of pollution to third world countries by Japanese enterprises. It wasn't until about 1980 that we became involved with nuclear issues.

Through our early involvement in the movement to oppose petroleum storage in Belau (Palau), by Nissho Iwai, and other Japanese companies, we came to have close relations with the people in the Pacific region. We took part in the First Nuclear and Independent Pacific Conference held in Hawaii in May, 1980, and since that time we have focused our attention on the prevention of nuclear waste dumping in the Pacific by the Japanese government. Our anti-dumping campaign has included collecting signatures in Japan against ocean dumping, as well as arranging campaign tours by people of the Pacific regions throughout Japan. We also joined the international campaign for the collection of

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Anti-Nuke
Delivery Group



We are a group of volunteer lecturers who are trying to inform the public of the possible dangers of nuclear reactors. We are giving basic lectures on radiation hazards, nuclear reactor accidents, and radioactive contamination of imported foods from Europe.

It was earlier this year that Dr. J. Takagi, the chairperson of the Citizens' Nuclear Information Center, began offering a two-month intensive training course for those who wanted to become volunteer lecturers. Since the Chernobyl accident last year, a growing number of Japanese people have become concerned about the dangers of radiation, and have tried to learn about the problem. Soon after the accident, handful of anti-nuke scientists, including Dr. Takagi, suddenly found themselves much busier than before, giving lectures to various people and concerned groups throughout Japan.

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NEWS WATCH

Bar Assoc. Criticized Shimokita Nuclear Facilities

After three years of long, arduous work, the Japanese Federation of Bar Associations finished a 288-page report of its study of the proposal to construct three nuclear-fuel cycle facilities in Shimokita, in Aomori Prefecture. The report exposed the problems of the planned nuclear facilities from the standpoints of "legality and human rights."

In the lengthy report, the federation pointed not only to the dangers of a potentially serious accident at these facilities, but also to the dangers of their daily operations. The report states that the ground around the construction site is wet and soft, and that the site is located too close to the Misawa Air Base, one of the largest air bases in Japan. The report severely criticizes the national and prefectural governments for unfair and undemocratic practices in their decision making processes, and for their lack of safety considerations.

In its conclusion, the report urges the government to postpone construction until the following conditions are met:

1. a scientific study is carried out to determine if it is possible to prevent radioactive fallout in the event of an accident;
2. debate on the issue is held in both the Diet and among Japanese citizens;
3. a feasibility check is made of the construction site by both the government and the local government;
4. local citizens are polled about their opinions on the issue;

The federation's committee on pollution and environmental safety presented this report to officials in charge of nuclear power policy in Tokyo. □

Tsuruga-1 Scrammed in a Chernobyl-like Event

On October 1, Tsuruga 1, a 357MWe boiling water reactor, stopped automatically in an event, which reminds us of the Chernobyl nuclear accident. The plant was at the last stage of a periodic inspection and a test of the turbine system had been planned with the reactor operating at a low power level. When the operator closed a valve attached to the steam condenser to keep the power level at 7 %, the power rose sharply to 11 %, due to excessive pressure in the primary system. This resulted in an anomaly signal, which triggered the reactor scram.

The power surge was caused by a decrease of steam voids in the core as a result of the over-pressure. Such a phenomenon is typical of a BWR reactor. If the scram had failed, a power excursion like the one at Chernobyl might have resulted.

This event poses questions about the credibility of the report published by the NSC (Nuclear Safety Commission) in May of this year. The report states that the main causes of the Chernobyl accident were operation of the reactor at an inadequately low power level as well as, "human errors" committed by the operators. The report ruled out the possibility of a Chernobyl-like accident occurring in Japan, because the type of inadequate test operations allowed in the Soviet Union are not allowed in Japan, and also because

the operators are much better trained in Japan.

The accident at Tsuruga 1, however, revealed that dangerous test operations and operator errors also occur in Japan. And it is such events that the NSC report refuses to address. □

Nuclear Reactors Create Dangerous Surplus Power Situation

In the last four years, 11 new nuclear reactors have begun operation in Japan, making for a total of 36 operational reactors. This increase has coincided with a decrease in the expected power demand. Thus, a steadily growing power surplus now exists.

As a result, power companies are now facing a situation where they must find ways to use the surplus power. For example, they are considering selling it to other utilities, as well as using it at "pumping-up stations." Pumping up stations are hydro-electricity facilities, where water must be pumped up to a high level. It is then allowed to "fall," and thus creates power.

In this search for solutions, the utilities began an experiment in October to halve the output of nuclear plants at night. At night, in particular, when the power demand is lower, the productivity of nuclear plants often exceeds demand. The utilities plan to operate at full capacity for 12 hours in the day time, and reduce operation by 50 per cent for 6 hours at night. For three hours in between, they plan to gradually increase and decrease output. This type of operation, however, could destabilize the reactor, and damage the fuel rods, due to changes in temperature.

It is the excessive construction of nuclear power plants that has helped to create a power surplus. Now, utilities are looking for ways to decrease the surplus, ways that are potentially quite dangerous. □

Citizen Group Voices Opposition to Plutonium Air Transport

On November 4, Japan and the United States signed a new U.S.-Japan Nuclear Power Cooperation Agreement. This new agreement, if approved by Congress, will permit Japan to transport its plutonium from re-processing plants in France & Britain back to Japan by air. The plutonium cargo will be flown from Europe, using a polar route over Canada, with a refueling stop in Alaska. As much as 250 kg of plutonium will be shipped once every two weeks by the middle of the 1990's.

Concerned groups in the U.S. and Canada, as well as the Canadian government, and the Alaskan state government, have been criticizing the shipment plans and are trying to stop them. However, Japanese groups have done very little work on this issue.

One group, however, the Kyoto anti-nuclear group, Medaka-no-Gakko, has been working on the nuclear fuel transport issue in Japan, and has taken various steps to oppose it. Nuclear fuel and uranium are often shipped by freeway in Japan. The Kyoto group has set up cooperative system with other groups along the transport routes to protest the method of transport, and to keep an eye on it.

In 1984, the Kyoto group, with other anti-nuke groups, protested the shipment of plutonium from France by sea. It is hoped that this effort will continue in the fight against the transportation of plutonium by air. If you are interested in helping, or for more information, contact:

Kyoto Anti-Nuclear Medaka-no-Gakko,
Attn. M. Saeki, Kyoto Univ. YMCA Bld.
2F, 21 Yoshida-Ushinomiya Machi,
Sakyo-ku, Kyoto, JAPAN. □

The Nuclear Free
Pacific Center
Tokyo

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signatures calling for the immediate ban of French nuclear testing in the Pacific.

Because of our recent activities, we renamed ourselves, the Nuclear Free Pacific Center Tokyo, on the day of an event which coincided with the Nuclear Free and Independent Pacific Day, on March 1st, last year.

We are now taking part in the citizens' movement against nuclear power in Tokyo, called "Stop Nuclear Power! Tokyo Action '87." We also publish a monthly journal, "Pacifica," in order to inform Japanese people about the views of the Pacific people, and the effects nuclear waste dumping will have on their lives. Our recent activities also include support for the people of Belau, who are fighting to protect their nuclear-free constitution.

We would appreciate any information people have, concerning problems in the Pacific. Our address is:
c/o Jishu-Koza, 1-3-7 Mukogaoka,
Bunkyo-ku, Tokyo, JAPAN 113
phone:03-815-1648

Anti-Nuke
Delivery Group

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As a result, Dr. Takagi decided to train people to be volunteer lecturers in order to meet the growing need for education about nuclear issues.

There are about forty people in our group of lecturers, twenty-five who took the intensive course in January and February, and fifteen who took the second course in June and July. Most of us are in our 20's and 30's and find this kind of volunteer work challenging and stimulating.

When we receive phone calls from groups asking for a lecturer, we try to obtain information on what they specifically want to learn, and the nature of their group, as well as the date, time, and place of the lecture. Then, we pick a person among us who can be available that day, and dispatch her/him to the place. So far, we have given more than fifty lectures to mainly consumers' groups, food cooperatives, and groups of housewives who are concerned about radioactive contamination in imported foods.

We get together at least once a month to exchange teaching experiences, to update our information, and to plan new material.



NUKE INFO TOKYO is a bi-monthly newsletter 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: \$60/year). We also appreciate receiving information and newsletters from groups abroad in exchange of this newsletter.

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