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Can Japan Change?

Appeal for People's Participation in Energy Policy Making

What did COP3 Leave Us With

The Third Conference of the Parties to the United Nation's Framework Convention on Climate Change (COP3), held in Kyoto, began on Dec. 1st and ended on the 11th, one day later than scheduled due to an extension.

The outcome was a disaster. Up to the period 2008 to 2012 a minimum average reduction of greenhouse gas emissions of only 5.2% over the 1990 level was called for in developed countries. In addition, the newly adopted protocol is problematical and is said to be full of loopholes, because of the so called "net approach which counts forests as the carbon sink," a theory which is still scientifically uncertain. The Kyoto Protocol also permits "emission trading" and "joint implementation."

The Protocol can be praised in the sense that nuclear power was never mentioned, and renewable energy and energy efficiency were promoted. However, Japanese Prime Minister Ryutaro Hashimoto mentioned the promotion of nuclear power in his speech at the start of the ministers' negotiations. The nuclear industry was highly visible; international institutes such as FORAMATOM and the Uranium Institute, the Nuclear Energy Institute from U.S., British Energy from U.K., the Central Research Institute of Electric Power Industry, and the Federation of Electric Power Companies of Japan organized exhibitions and symposiums to promote nuclear power, but ended up playing an unimportant role at the Kyoto Conference.

Japanese Gov't Attitude After COP3

The Japanese government has begun to find ways to achieve the agreement adopted at the Kyoto Conference. A definite plan that will be the most important measure for the nation, is the revision of the "Long Term Energy Supply and Demand Outlook." However, the current Outlook projected in 1994 by the Ministry of International Trade and Industry's (MITI) Advisory Committee for Energy has the following problems: 1. Most of the members of the Committee and its sub-committees are from the industries and utilities, and no participation from NPOs which represent citizens' opinion and non-biased perspectives; 2. it is called the "Outlook," but is basically a target for the nation's energy policy, though it is not discussed in the Diet; 3. there is no release of data from the Outlook, which is made-up only by a handful of government officials; 4. It emphasizes only the supply side which supports non-limited economic growths; 5. almost no concerns for the environment can be observed.

The government now declares it will make a more positive commitment in CO_2 reduction. However, MITI officials say there is no need for additional efforts, even after COP3 which adopted a stricter reduction target of 6% compared to Japan's original target of 2.5%. They say, Japan can achieve the new target by counting the carbon absorption of forests (sinks) as 3.7%, and the "Joint Implementation" and "Emission Trading" as 1.8%. But this is a misinterpretation of the Kyoto

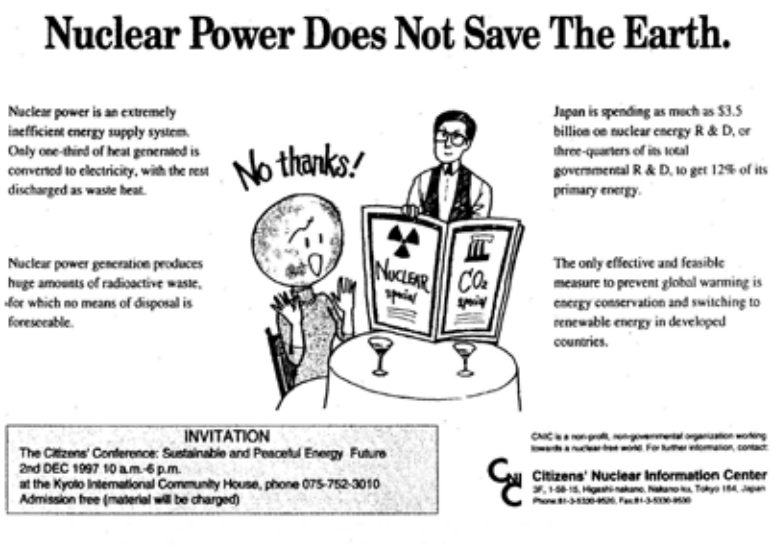
In this issue:

Protocol since the forestry activities counted should be "limited to afforestation, reforestation, and deforestation since 1990," according to Article 3 of the Protocol. A correct interpretation suggests that the Japanese reduction by the "net approach" should be only 0.3%. The Japanese government has been trying to jeopardize the result of the Kyoto Conference since the Conference ended, and has continued to seek loopholes in the Protocol.

At various committees, MITI has continued to emphasize this as the government consensus, but it seems some experts have voiced opposing opinions in committees under the Environment Agency. These experts say estimation of 3.7% is based on the maximum assumption, beyond the agreement of the Kyoto, and Japan must make additional efforts for reducing greenhouse gas emissions (GHG).

Although in the Kyoto Protocol, the promotion of renewables and energy efficiency was encouraged, the Japanese government's energy policy has remained unchanged. The key items submitted by the Advisory Committee for Energy were: 1) energy conservation on the demand side; 2)promotion of nuclear power; 3)promotion of new energy according to the "New Energy Law."

However, at the Electric Utility Industry Council, which deals with the electricity part of the Outlook, the following items have been adopted as the key item: 1)future of fossil plants (emphasis on gas plants); 2)CO_2 emission increase resulting from the new electric power bidding system introduced as a result of deregulation; 3)promotion of nuclear energy. -- by Mika Ohbayashi



* Ad. that ran in the Japan Times before and during COP3

The Workshop on "Sustainable Energy Future in Asia" at COP3
The International Citizens' Conference "A Sustainable and Peaceful Energy Future"

CNIC participated in the Kyoto Conference as an observer officially recognized by the United Nations, and warned of the dangers of nuclear power by holding a workshop (Dec.1) and press conference (Dec.3) as well as sponsoring an exhibition. Apart from the activities at the Conference, CNIC co-sponsored with Friends of the Earth Japan the International Citizens' Conference — "A Sustainable and Peaceful Energy Future" at Kyoto International Community House.

The Workshop at COP3

Dec. 1 was the first day of COP3 and the whole atmosphere was still uneasy. The workshop site was some distance from the main conference hall and was held only in English, however, many people attended as well as journalists, and the discussion was quite lively.

The speakers and the titles of their speeches were: Christopher Flavin (the U.S., Worldwatch Institute) "Sustainable Financial Support of Energy in Asia," John Byrne (the U.S., The Center for Energy and Environmental Policy, University of Delaware) "Potential of Sustainable Energy in Asian Region," Sui-San Lim (Germany, Oeko Institute) "Comparison of Greenhouse Gas Emission and Abatement Cost from Nuclear and Alternative Energy Resources from Lifecycle Perspective," Lando Verasco (The Philippines, International Institute for Energy Conservation) "Energy Conservation: Leading Southeast Asia to Sustainable Energy Future." The workshop was chaired by Claire Greensfelder from Plutonium Free Future, the U.S, and Dr. Jinzaburo Takagi of CNIC.

The Citizens' Conference

The conference, jointly organized with FoE, saw an audience exceeding the 250 seats with some people who had to find seats on the floor. The discussion was quite lively and continued from 10AM until 6PM. Altogether as many as 400 people participated.

The keynote speech and special speeches were given in the morning, and in the afternoon two separate workshops were held. A plenary conference session was then held to round off the day. Takesato Watanabe (Doshisha University,

Kyoto) and Mayumi Oda (the U.S., Plutonium Free Future) chaired the conference.

The keynote speech "Change for a Sustainable and Peaceful Energy Policy," was given by Dr. Edda Mueller from the Wuppertal Institute in Germany. Dr. Mueller has been the main advocator of a 25% reduction in CO_2 emissions as a target of the German reduction program, participating in negotiations in the EU on energy as well as climate policies. She is also an expert on the nuclear energy issue and told the audience that nuclear technology is already out of date in Europe.

A special speech, entitled "Nuclear Phase Out and the Role of Citizens," was given by Dr. Takagi from CNIC. He introduced results from the study "Climate Change and the Nuclear Issue," explaining that expanding nuclear power has never contributed to a reduction of CO_2 emissions in Japan. He also appealed to the participants to bear in mind that citizens' participation is strongly needed in order to realize a sustainable energy society.

Dr. John Green from FoE Scotland gave a special speech entitled "Sustainable Energy Production and Consumption Policies in Europe." He said that in Europe as well, the nuclear industry is using the expression "a Green Shield" in efforts to promote nuclear energy. He pointed out that in fact renewable energy such as wind power is cheaper than nuclear power (currently 4.5cents /kWh in the U.K.). He also detailed EC's plan that develops 10 million kW generating capacity by both wind power and biomass, and to install half a million solar panels on roofs by the year 2010.

In the afternoon two workshops; 1 - "A Sustainable Energy Future" (by CNIC) and 2 - "Climate Change and Financial Aid for a Sustainable Energy Future" (by FoE) were held. Workshop 1 was chaired by Aileen Smith (Green Action, Kyoto) and Yukio Yamaguchi (Hosei University), and the commentators were Michael Sailer (Oeko Institute, Germany) and Dr. Mueller.

First, Lando Verasco reported on the possibilities and the actual work on energy saving in Southeast Asia. In the Philippines, government regulations require 136 utilities to submit Demand Side Management (DSM) plans. Air conditioners are required to carry a label showing the energy efficiency, and an estimated 400,000kW will be saved by the year 2005.

John Byrne showed that sustainable energy systems and the improvement of energy efficiency are quite possible in Asia, based on the result of a study carried out with the Chinese and Korean governments. He also showed that in the U.S.,one dollar invested in improvement of energy efficiency reduced CO_2 emissions by seven times as much as compared to 1 dollar invested in nuclear power, indicating that reliance on nuclear power as means to combat global warming is economically unsound.

Anung Karyadi (Indonesia, WALHI) reported that in Indonesia 5.1% of total energy is produced by renewables and explained the possibilities of developing energy supported by the richness and diversity of nature.

Sui-San Lim introduced the report about former Soviet Union countries, and showed that efficient running of the already existing fossil-fuel plants and hydro power plants, introduction of the natural gas combined cycle, and development of wind power could save 2 to 3 million kW and replace nuclear power.

Claire Greensfelder reported that the nuclear industry in the U.S. is weakening, that a number of accidents have occurred, and that substantial fines have been imposed for withholding information; and yet still the industry is trying to sell the "old fashioned" nuclear technology to Asia.

Corason Fabros (Nuclear Free Philippines Coalition) explained that the government had chosen ten sites for nuclear power stations and has been promoting nuclear power through educational campaigns. She spoke on how she would like to encourage the public to discuss renewable options much more actively so that the government would drop the nuclear option.

Soek Kang-Hoon (Korea, Green Korea) explained that even in Korea, where nuclear power has been promoted strongly, it is becoming more and more difficult to find candidate sites. He also said that the monopoly system of the utility company has been a big obstacle in the abolition of nuclear power.

After the workshops, all the participants came together again to hear the reports from each workshop and to discuss the creation of citizens' energy policies towards a sustainable energy society. It is important to share concrete approaches and suggestions in order not to allow "loopholes" in the protocol. Our organization is determined to set up a network among Asian countries as well as in Japan in order to create a nuclear free and sustainable energy society.

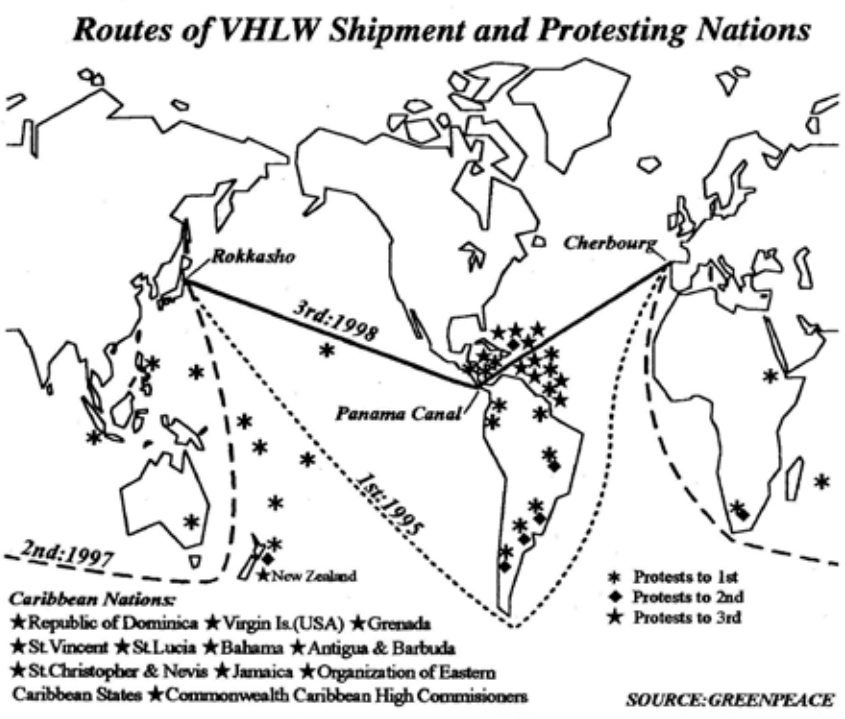
(M.O.)

Japan's High Level Waste to Pass Panama Canal

Dangerous Precedence for Upcoming MOX Shipments

The nuclear cargo ship Pacific Swan left port Cherbourg on January 21, carrying 60 canisters containing glass logs of vitrified high level waste (VHLW), the largest amount ever transported as VHLW. The Federation of Electric Power Companies (FEPCO) announced on January 22 that the ship will go through the Panama Canal and arrive at Mutsu-Ogawara port in Rokkasho, Aomori in early March.

CNIC released a statement on the day the ship left the port, criticizing the French and Japanese governments, Compagnie General des Matieaires Nucleaires (COGEMA) of France, and Japanese utilities for enforcing the shipment of VHLW for the first time through the Panama Canal amid world-wide protests and without consultations with the en-route countries.



This is the third shipment of VHLW from France to Japan, but it is the largest in terms of the number of glass logs and total amount of radioactivity (around 1 exa becquerels or 1x1018 Bq). Upcoming shipments are supposed to carry as many as 150 logs each time. The radioactivity involved will far exceed the past shipments including that of irradiated nuclear fuel transports that went through the Panama Canal.

On the occasions of the past two shipments, CNIC pointed out the danger of maritime transport of large amounts of RAM (radioactive materials), particularly that of VHLW transport, in view of the canister contamination incident that occurred during the first shipment. At that time, CNIC urged the authorities of the related countries (Japan, France, U.K. and U.S.A) to conduct and publish a full EIA (Environmental Impact Assessment) before the shipment takes place, however the shipments were carried out in utter disregard of our warnings and demands.

Furthermore, it is reported that on November 30, a Panamanian-flag container ship Carla broke down into two pieces due to the stormy weather, and the fore section of the ship sank into the bottom of Atlantic Ocean north of the Azores. The ship carried three Cs-137 containers with a total amount of Cesium-137 of 330 tera-becquerels.

On December 24 CNIC sent a letter to related authorities demanding for an investigation on the cause of the ship damage, and a thorough review on the safety of transport based on the results of the investigation before any other future shipments take place. They again dismissed our demand and carried out this shipment.

We are particularly concerned about this shipment on Pacific Swan, because it has to pass through the densely populated regions along the Panama Canal and near the Caribbean and Pacific islands, making the shipment even more dangerous than the ones before which took routes around South America and South Africa. With the completion of this shipment, the nuclear industry intends to set a precedence for VHLW and MOX (plutonium-uranium mixed oxide fuel) transports taking the shortest and most economic route. Japanese utilities plan to conduct the first MOX shipment from Europe to Japan by the end of this year at the earliest, although it is likely that it will be delayed substantially.

CNIC believes that strong voices of opposition from potential en-route countries are imperative in order to relieve them from the threat of radiation catastrophe.

-- by Jinzaburo Takagi

Tokai Reprocessing Plant Accident Final Report

-- Search for the truth abandoned after failure to specify cause of accident

The "Fact-Finding Commission on the Fire and Explosion Accident at the Tokai Reprocessing Plant Bituminization Facility" concluded the report on its probe of the accident on December 15 and submitted it to the Science and Technology Agency (STA) Director-General Sadakazu Tanigaki. The report, however, was unable to determine anything about the accident's cause. Moreover, the report's assessment of worker radiation exposure is vague, and does not question STA's responsibility for inadequate safety review when permission was granted to build the facility. For these and other reasons, the report will be unable to escape criticism as being flawed.

A good indication of the commission's failure to identify the accident's cause is that the entire text dealing with the cause uses expressions such as "possibly" and "conceivably." This is obvious from a glance at the diagram entitled " Hypothesized Fire Scenario" in the report. Dotted lines are used to indicate possibilities, and until the stage where the fire actually breaks out, there is not a single solid line.

Furthermore, a detailed investigation of the bituminization room, a precise analysis of hot samples such as actual asphalt blocks, and other studies would be essential to determining the accident's cause, but the commission postpones these to a mid- and long-term agenda. By submitting the report, the commission completed its appointed task and disbanded, the remaining tasks being left to the Power Reactor and Nuclear Fuel Development Corporation (PNC) and the STA; thus the investigation into the cause of the accident is relegated to those who were responsible for it. This provides little hope that a thorough investigation will be carried out.

The assessment of worker exposure also concludes on a highly vague note. After going through repeated changes, it finally used nose smears to determine that maximum exposure had been 2.56 mSv, a very heavy amount. Since the Radiation Council is considering the adoption by Japan of the ICRP's 1990 recommendation, which specifies a maximum annual worker exposure of 20 mSv (but leaves a loophole that exposure not exceed 100 mSv averaged over five years), radiation exposure must therefore be given a more exact assessment.

Issuance of the final report without identifying the accident's cause was probably meant to accommodate the STA's schedule, which calls for reorganizing the PNC, i.e., establishing a new corporation, this autumn. Additionally, the government has more or less decided to build a new facility to pelletize wastes instead of restarting the bituminization facility.

Completion of the final report will perhaps also influence plans to ship spent nuclear fuel to Rokkasho reprocessing plant. Morio Kimura, Governor of Aomori has put on hold the signing of the safety agreement, which must precede shipments of spent fuel to Rokkasho, until the Tokai accident's cause is determined. Nevertheless, it is highly unlikely that the final report will be able to receive the consent of the Aomori citizens.

On the day the final report was released, the Citizens' Accident Investigation Committee (represented by Mr. Kiyoaki Tanno) sent to STA and the commission a statement that criticized the report and called for decommissioning of the Tokai reprocessing plant. Citizens criticized the commission's conclusions and are working on an accident investigation of their own.

-- by Hideyuki Ban

The Right Livelihood Award Ceremony

-- by Jinzaburo Takagi

Receiver of 1997 RLA:(from left to right)
Michael Succow, Mycle Schneider, Joseph KiZerbo,Jinzaburo Takagi, Jim Duehring

The Award Ceremony of 1997 Right Livelihood Award took place on December 8, 1997 at a ceremonial hall of the Swedish Parliament in Stockholm. I attended the ceremony with my partner Kuniko to receive the award, which I shared with Mycle Schneider of WISE-Paris for our anti-plutonium works and activities.

The ceremony was opened by the welcome speech of the Speaker of Swedish Parliament, Mrs. Brigitta Dahl, followed by the introduction/keynote speech of Jakob von Uexkull, Founder and Chairman of the RLA Foundation. He then presented the awards to five recipients from the four continents.

The other recipients were Michael Succow of Germany who was honored for his extensive achievements in environmental conservation in former East Germany and several East European Countries, Cindy Duehring of U.S.A. who won the award for her internationally-recognized research into the multiple chemical sensitivities and creation of an international network dealing with chemical injuries, and Joseph Ki-Zerbo of Burkina Faso who was honored for a lifetime of scholarship and activism which laid out the history of Black Africa and for promoting a people-centered vision of African future. Cindy Duehring's husband Jim Duehring attended the ceremony to receive the award on behalf of his wife who is herself a victim of pesticide poisoning and had to stay in the confines of her home.

After a break, five recipients each made their speeches of acceptance. The speeches covered an extremely wide spectrum of urgent issues of the contemporary age - from nuclear and environmental issues to human rights and criticism of globalization - which were all very impressive and inspiring to me. At the end of the ceremony, I strongly felt that this should be a new start of my life and CNIC's activities.

Once again, I would like to thank everyone who have collaborated with me and CNIC and continued to support our work.

Nuclear Developments in Asia - Part III

Thailand, Vietnam, and Malaysia

Back in 1974, the Thai government once granted permission to build a nuclear power plant. This permission was for the Electricity Generating Authority of Thailand (EGAT), which intended to build a 600 MW plant at Ao Phai. Announced in 1967, the plan called for operation to start between 1981 to 1982, but it was canceled after the 1979 Three Mile Island accident owing to skyrocketing cost estimates, resistance from local citizens, and other reasons.

Currently, EGAT has plans to bring two 1,000 MW-class reactors on line in 2006, and one more each year thereafter. There are five candidate sites, but they have not been publicly announced for fear of opposition movements.

In December 1995, the government set to work on a feasibility study for nuclear plant construction. Studies are to be conducted by the Committee for Studies on Nuclear Power Plant Construction, which was set up by the Ministry of Science, Technology and the Environment (MOSTE), but the transition to a new administration has put it behind schedule. The committee will also include members chosen from environmental organizations and other NGOs.

In July 1996, Vietnam started two kinds of feasibility studies aimed at instituting nuclear power in 2010 and thereafter. One is being conducted by the Vietnam Atomic Energy Commission (VINATOM) in cooperation with the Electric Power Agency and the Ministry of Industry. A report covering points such as potential sites, development costs, and lead times is expected to be issued in July 1998 . The other is being carried out by VINATOM with the cooperation of other government bodies and research organizations. In the process of developing Vietnam's energy strategy up to 2000, it will examine the scientific, technical, and social problems posed by nuclear power.

VINATOM entered into a cooperation agreement in September 1996 with France's Commissariat a l'Energie Atomique (CEA), from which it will seek cooperation in areas such as personnel training.

In Malaysia, Tenaga Nasional Berhad (TNB), which was created by privatizing the National Electricity Board (NEB) in 1990, is considering the introduction of a mid-sized or small reactor around 2005.

Common to all three countries is their view of nuclear power as the "last resort" for providing energy, not as a must.

Nearly half of total electricity demand is concentrated in these countries' capital city areas, and is therefore swayed significantly by business conditions. Generating facility capacities as of the end of 1994 were about 15,000 MW for Thailand, 7,000 MW for Malaysia, and 3,000 MW for Vietnam. Obviously they would face excessive risk in building high-output nuclear plants. What is more, none of the plans of the three countries contains any concrete measures at all for the procurement of capital.

In Thailand and Malaysia, people who oppose nuclear power can be found even in their governments, parliaments, and business communities. On June 26, 1997 Thailand's Office of Energy for Peace (OAEP) signed a contract with the U.S. General Atomic Co. for the construction of a nuclear power research center. Japan's Hitachi Ltd. and Hitachi Zosen Corp. will undertake the waste processing facility for the 10 Mwt research reactor to be built at the center. Toshiba will be involved in the electronic equipment and instrumentation for the radioisotope fabrication facility. But the Thai government's Atomic Power Safety Subcommittee has not approved this plan, claiming that adequate controls have yet to be implemented, and the OAEP's relentless pursuit of the plan over objections has fueled opposition to nuclear power within the government. Furthermore, the exercise of political power in Thailand has always been a fairly unstable business anyway.

Although the future of nuclear power is uncertain, all three countries make much use of radioisotopes and radiation in agriculture, medicine, and other fields.

-- by Baku Nishio

Report from Moscow --

Changing Paradigms in Radiobiology:

A report on the 3rd Congress on Radiation Research

by Natalia Mironova

From 14 to 17 October, 1997, the 3rd Congress on Radiation Research was held in Moscow. The discussions focused on the information about health and environmental radiation effects accumulated in the last years of research conducted simultaneously with the development of such sciences as radiobiology, radioecology and genetics. The Organizational Committee of the Congress was chaired by R.V. Petrov, Vice-President, Russian Federation Academy of Sciences (RF AS), and co-chaired by Ye.B. Burlakova, MD, President of RF AS Radiobiology Sciences Panel, A.I. Gaziev, President of the Radiobiology Society.

500 scientists from Russia, Ukraine, Belarus and Georgia presented and discussed the data of their research in eleven sections and three "round tables" of the Congress .

The traditional ideas according to which only exposure to high doses can bring about health effects were dissipating like ice thawing under the bright spring sun as information that has accumulated over the five years since the Ist Congress was being poured out by the researchers.

It has finally been recognized that exposure to low doses calls for different protection methods compared to medium doses. This issue was addressed by Dr. Burlakova. With respect to the paradoxical statement about absence of any radiation-related health effects from 50 years of radiation exposure of the Chelyabinsk populations, N.P. Bochkov commented that those effects simply had not been registered and documented.

Radiobiologists discussed the effects of low doses of ionizing radiation on immunity, hemopoiesis, on cellular metabolism. For example, Ye.B. Burlakova, a Doctor of Biological Sciences, had shown a lack of the cell's adaptive response to low doses and alpha-radiation, i.e., in this case the cell does not sense the danger and its protection mechanism is not activated.

The biophysicists focused on general issues of radiation medicine, radiation epidemiology, the Chernobyl-related phenomenon of radiation affection of the thyroid. Underestimated risk values presented by the IAEA experts after the Chernobyl accident had resulted in the elimination of the UNO assistance program worth of $ 500 mln. In his paper A.F. Tsyb pointed to a more than 10-fold excess cancer rate among adolescents compared to that predicted by the IAEA experts, and over 2-fold excess rate for adult population. "We should be honest and admit that we did not predict such rates of thyroid cancer among children and adolescents" - A.F. Tsyb concluded.

The Congress ended in a round table discussion "Low levels of radiation exposure and human health" which became a spectacular manifestation of opposite opinions on the effects produced by low dose exposure. However, it became absolutely clear that the effects of low doses have a different nature as compared to high doses.

The conclusion which should immediately be applied in practice is that in order to prevent the effects of small doses different therapeutic and prophylaxis methods are needed compared to cases of exposure to high doses.

Plutonium Glut Ever Increasing

STA Releases 1996 Pu Inventory Figures

On December 1, 1997 Japan submitted to IAEA a Note Verbal stating it will publicize annual plutonium inventory figures according to the newly formulated Guidelines for the Management of Plutonium. The guidelines and plutonium inventory figures as of December 31, 1996 were made public by the Science and Technology Agency (STA) on December 8, 1997. Because the way of presenting figures, while following the guidelines which were provided in accordance with international agreements of 9 countries (US, Russia, UK, France, Germany, Belgium, Switzerland and Japan), differs from those of preceding years, only inventory figures rounded to 100kg were available. Nevertheless, CNIC was able to obtain from STA detailed figures exact to the order of 1kg, which are given in Table 1 along with the values for 1995.

In this publication STA also made public the estimated amounts of plutonium contained in spent reactor fuel, which had not been available hitherto (Table 2).

Now that the entire Japanese plutonium program is basically stalled, the entire 20 ton separated plutonium must be essentially regarded as surplus. As has been warned by CNIC, the Japanese plutonium surplus has been steadily increasing in the past five years from 6 tons at the end of 1992 when the plutonium inventory was disclosed for the first time, to a very serious level of 20 tons in 1996.

Table 1. Unirradiated Separated Plutonium Inventory *

Facility	Amount of Pu: 1996	Amount of Pu: 1995
Reprocessing Plant	602	753
MOX Fabrication Plant(s)	3,132	3,146
Reactor Sites	869	39
Critical Assemblies	429	425
Overseas reprocessors	15,090	11,377
Total	20,122	16,099

* Figures as of the end of the year for total plutonium in kg

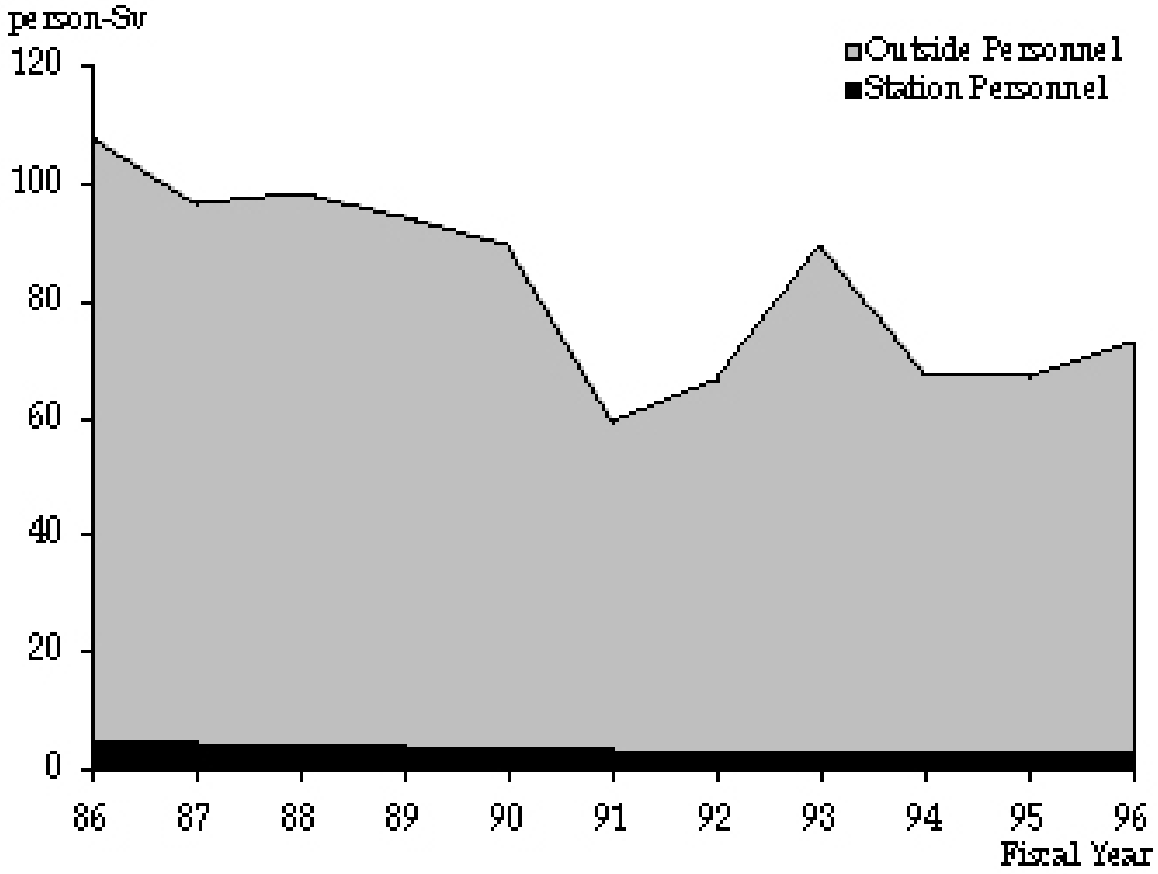
Table 2. Plutonium in Spent Fuel (as of end 1996)

Facility of Storage	Estimated Amount (kg)
Reactor Sites	47,966
Reprocessing plants	742
Other Facilities	49
Total	48,757

Data: Workers' Radiation Exposure at Nuclear Plants

Annual Collective Dose of N-plant Workers (person-Sv)

Fiscal Year	Station Personnel	Outside Personnel	Total
86	4.66	102.78	107.44
87	4.17	91.94	96.11
88	4.14	94.25	98.39
89	3.46	90.34	93.80
90	3.29	86.03	89.32
91	2.86	56.06	58.92
92	2.92	63.53	66.45
93	2.98	86.40	89.38
94	2.66	64.63	67.25
95	2.97	63.87	66.80
96	3.15	69.33	72.47



NEWS WATCH

Cracks and Expansion Found on Control Rods

Cracks and traces of expansion are being found repeatedly on control rods used in boiling water reactors. During a regular inspection of the control rod drive system at Tsuruga 1 (357 MW) on October 23, one control rod stopped functioning. It was found that a part of the rod had expanded and was caught on the channel box of the fuel assembly. The rod also had 11 expanded spots and 143 cracks (24.5 cm maximum). Another rod with 24 cracks (1.9 cm maximum) and 10 expanded spots was also found.

On December 5 at Fukushima 2-1 (1,100 MW) one of the control rods also got caught and stopped moving. It seems the rod only shows traces of expansion but no cracks. The defective control rods were made by Asea Brown Boveri.

STA Begins Training Seminar on Nuclear Power in Indonesia

The STA conducted a 2-week seminar on nuclear safety in Indonesia starting December 8, dispatching experts from Japan. The trainees were Badan Tenga Atom Nasional: National Atomic Energy Agency (BATAN) staff, and university and hospital workers. Though the STA had previously offered training programs by inviting people at senior management level to Japan, it was the first time a seminar had been offered outside of Japan for people at working level.

The visiting lecturers consisted of five staff members from the Japan Atomic Energy Research Institute. Eleven lecturers from Indonesia including four who had received training in Japan, also taught at the seminar.

Advance Payment for Rokkasho Reprocessing Plant

In order to cope with the swollen construction costs of the Rokkasho reprocessing plant, 10 electric companies decided to pay in advance a total of \¥500 billion towards the plant's operation. On December 17, the 10 utilities and Japan Nuclear Fuel Ltd. (JNFL), which is responsible for reprocessing, concluded a memorandum. In addition, the utilities have also provided a total of \¥100 billion in untied aid towards construction of the plant.

The construction cost of the plant has increased from the original estimate of \¥840 billion to \¥1.88 trillion. Even with the above construction aid and advance payment, there will still be a shortage of funds, which is expected to be covered by further investment, most of which is expected to come from the 10 utilities.

Iodine Tablets Distributed to Schools

Hakui City of Ishikawa Prefecture began distributing iodine tablets to day-care centers, kindergartens, and elementary and junior high schools at the end of December, as a preparatory measure against the possible release of radioactivity during an accident at Shika Nuclear Power Plant (BWR, 540 MW). The reactor is located about 19 km away from the city.

In Japan, areas designated as most dangerous during a nuclear accident are those located within 10 km from reactors. Hakui City is outside the designated area, but since 1992 it has autonomously stockpiled iodine tablets in hospitals. The recent measure to distribute tablets to schools was enacted in response to citizen concern that stockpiling the tablets at hospitals may delay distribution to children at the time of an emergency.

Tsuruga 1 to Undergo Shroud Replacement

Nuke Info Tokyo #59 reported that core shroud replacements were expected to take place at Fukushima I, units 1, 2, 3, and 5. Replacement is currently being conducted at unit 3 (BWR, 784 MW). On December 12, Japan Atomic Power Co. (JAPCO) announced that after the completion of work at Fukushima, they will replace the shroud of Tsuruga 1 (BWR, 357 MW). The replacement is scheduled for FY 2000, the reactor's 30th year of operation.

-- by Baku Nishio

Rokkasho reprocessing costs $3,000 /kg?!

A nuclear industry journal Inside Nuclear Power reported in its January 12 issue that it has found out that the reprocessing cost of Rokkasho, as described in the contract, is as high as ¥370 -380 million /tonHM.

Ten Japanese utilities exchanged a memorandum on the costs, amounts etc. of reprocessing at the Rokkasho Plant with Japan Nuclear Fuel Ltd. (JNFL), the owner and operator of the plant. The journal reports based on insider information that the memorandum states the reprocessing cost for the first 700 ton to be ¥370-380 million. It also says the first quarter of the cost will be paid at the time of spent fuel transport to the plant, and the remaining three quarters when the reprocessing has been completed.

The reported cost, more than double that of European reprocessors, corresponds to 1.7-1.8 yen/kwh electricity, an indication of the disastrous economics of Japan's reprocessing strategy.

KEPCO to Begin MOX Fabrication at Sellafield

On January 20, Kansai Electric Power Co. (KEPCO) announced it will start fabrication of MOX fuel at Sellafield by the end of January for use in Takahama 4, the first PWR planned to be fueled with MOX. Although KEPCO' s MOX use at Takahama 4 is not approved by Fukui Prefecture, nor has KEPCO applied for relicensing of the reactor for MOX loading, the company decided to start fabrication by BNFL in order to meet the official schedule for loading MOX assemblies during the outage of the plant in 1999. "Two hundred and some tens of kilograms of the total 4.2 tons of plutonium TEPCO possesses" (Denki Shimbun 21.1.1998) will be used to manufacture eight MOX fuel assemblies with fissile plutonium content of about 6 %.

Although this may be the familiar nuclear industry tactics of creating a fait accompli in order to get MOX utilization approved by the local residents, the start of fabrication before approval of local governments, would most likely trigger negative reactions by the local residents. While MOX fabrication for TEPCO's BWRs is already in progress at Dessel, Belgium, there are also criticisms among the residents for TEPCO's premature moves in Fukushima. The Fukushima Governor has so far remained very careful in showing his attitude toward MOX program.

-- by Jinzaburo Takagi

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