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Citizens' Nuclear Information Center

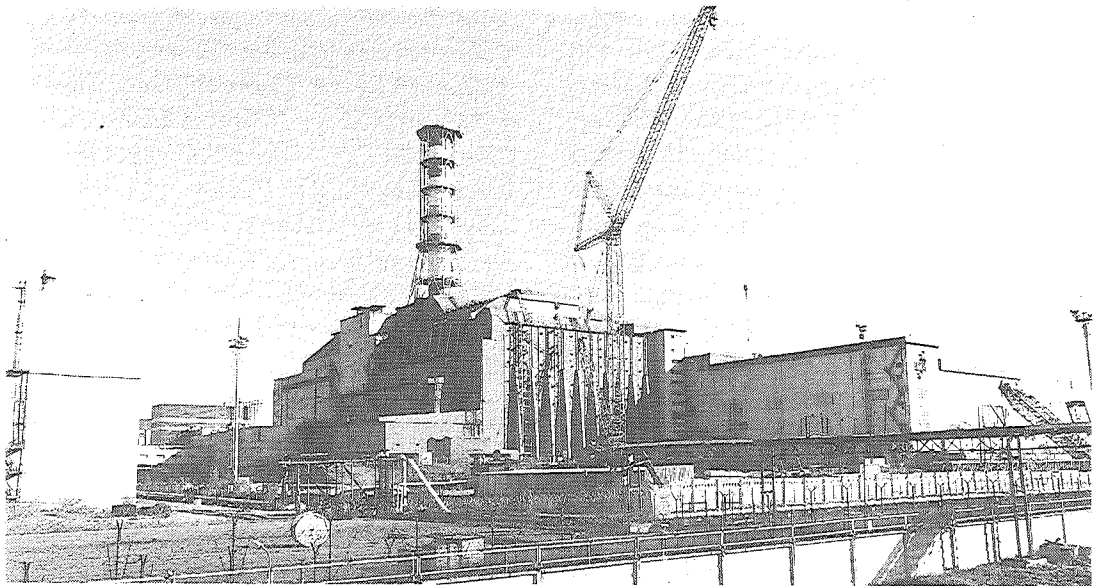
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The 10th Anniversary of the Chernobyl Accident

-Citizens' Aid Movements in Japan-



(Photo by Seiichi Motohashi)

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In Japan, aid activities by citizens for the victims of the Chernobyl nuclear accident began in 1990, four years after the accident. A letter sent from a mathematician in the USSR addressed to Mr. Makoto Yamazato of Nagoya Technical University initiated the rescue movement when soon after Mr Yamazato founded the "Byelorussia Children's Fund." Moreover, responding to the letter



The children from Belarus enjoying a home-stay in Japan.

received by Mr Yamazato, in April 1990, the "Chernobyl Aid Fund" was established in Tokyo. Followed by the establishment of "Chernobyl Aid, Chubu" in Nagoya. A little later, the "Kyushu Chernobyl Support Movement" came into being. Core members of these aid movements were active participants in the anti nuclear-power movement. They thought that the fate of the people of Chernobyl could be our fate tomorrow and that aid movements should not be restrained by national boundaries in helping the radiation victims as radiation itself is not stopped by borders.

Soon after this start, concerned professionals and citizens began to visit Chernobyl, meeting radiation victims and hearing about the reality of their situation from the victims themselves. The visitors established aid organizations such as "Estonian Chernobyl Radiation Victims' Fund" (in Tokyo), "Japan Chernobyl Solidarity Network" (in Nagano) in the summer and the autumn of 1990. Mr Ryuichi Hirokawa, who is a news photographer and had visited the heavily contaminated area, had a central role in setting up the "Chernobyl Children's Fund" (in Tokyo) in the spring

of 1991. Other aid groups were established in other areas in Japan and nowadays there are many other groups and individuals, in addition to the core groups, who are actively participating in the rescue movement.

At first the rescue movements responded to the most basic conditions faced by victims, who lacked medical facilities. They began to raise funds to send medical supplies such as anti-cancer drugs and syringes. One of the first of such actions was the delivery of 450 kg of supplies by the "Chernobyl Aid, Chubu" to Zhitomir in the Ukraine in August of 1990. Each movement established partnerships with local aid groups, hospitals and concerned organizations in the affected area. By delivering materials directly to their partners, the aid movements have visited radioactively contaminated areas and contacted the victims directly, and in doing so they have come to understand better what the victims need. Therefore, in addition to medicines, over the past five years the aid movements regularly have sent diagnostic apparatus such as ultrasound and blood analysis equipment as well as incubators and sterile rooms. They also sent a safe supply of milk.

Other aid activities, such as dispatching medical doctors to the afflicted area, educating and training Ukrainian and Byelorussian doctors and the treatment of children exposed to radiation, were started. In cooperation with the doctors of the medical department at Hiroshima University, "Jyuno-no-kai," in Hiroshima, has supported these human exchanges with

Ukrainian organizations. The "Japan Chernobyl Solidarity Network," associated with Shinshyu University (in Nagano) has also sustained such relationships with Byelorussian partners.

In total "Jyuno-no-kai" has sent 38 doctors and inspectors and invited 22 children and 22 doctors to Hiroshima. These kind of actions contribute to improving the level of medical technology and promote cooperative research into the effects of the accident.

Another kind of aid activity, invites children, both driven out of and still living in radioactively contaminated areas, to Japan to recuperate. The "Chernobyl Aid Fund," which has a partnership with civil aid organizations in Minsk, had a central role in organizing these activities where between '92 and '95 more than 350 children were invited to Hokkaido and Youroh-machi in Gifu Prefecture. During a month long home-stay the children became healthier, both physically and mentally with the support of the local citizens and children. But when they went home they left behind the fear of a nuclear accident in the hearts of their host families. Some host families have since visited the children in CIS.

Encouraged by the recuperation movements, the "Chernobyl Support Movement, Kyushu" and the "Chernobyl Children's Fund" established sanatoria in Byelorussia in 1993 and 1994 respectively. Children in the contaminated area go

to recuperate at domestic or overseas sanatoria once or twice a year. The domestic sanatoria solved the difficulties of bringing children to faraway Japan.

In addition to coordinating activities such as medical aid, medical exchanges and organizing recuperation, mentioned above, the Chernobyl citizens' rescue movement has ceaselessly strived to organize rallies and conferences, inviting doctors and rescue activists from the contaminated area, investigating the health status of refugees from the accident, publishing the writings of children and letters from mothers who come from the contaminated area, sending Christmas cards to the area and participating in symposia.

When the Chernobyl aid movements began in Japan some criticized their involvement by saying "This is an escape from domestic anti-nuclear movement." But the aid movement is in the position to tell the Japanese people how serious the effect of the accident had been as they have visited the site and got to know the residents of the exposed area. They were able to find out the falsehoods of the IAEA report and the truth of the cover-up by the authorities which has caused victims so much unnecessary extra suffering.

We highly commend the contributions of the Japanese anti-nuclear movement by these activities during those five years.

(Akiko Wada)

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NOTICE: 26 April of this year is the 10th anniversary of the Chernobyl accident. As this issue of Nuke Info Tokyo is covering the work of the Chernobyl Aid Movement in Japan CNIC would like to remind its readers that, last year, it published the proceedings of Belarus-Japan Symposium on "Acute and Late Consequences of Nuclear Catastrophes: Hiroshima-Nagasaki & Chernobyl." This comprehensive study of the effects of the accident costs 5000 plus p.&p., about 3000 from overseas (this is about \$90).

Japanese MOX Fabrication Contracts Made Without a Users License

— *Jinzaburo Takagi*

The February 26 issue of Yomiuri Shimbun reported that TEPCO (Tokyo Electric Power Co.) and KEPCO (Kansai Electric Power Co.) had already signed contracts secretly, commissioning major domestic heavy electric/heavy industry manufactures to fabricate MOX from plutonium extracted from Japanese spent nuclear fuel in European reprocessing plants. CNIC obtained confirmation from the two utility companies that this is true.

According to the utilities, TEPCO concluded a contract with Toshiba last April to have 400 kg of its plutonium fabricated into BWR MOX fuel assemblies (about 60 assemblies) and Toshiba signed a contract with Commax for actual fabrication in Europe. Where as the Yomiuri article reported that the BWR fuel assemblies were to be fabricated by Belgonucleaire in Dessel, Belgium and this is indeed very likely, it has not been confirmed at this time by either the Japanese or Belgium side. But since for Commax, which is a French-Belgian fuel dealer, Dessel may be the only possibility for having the Japanese MOX fabricated, the somewhat unclear response by the company is probably due to the fact that there is still no Japan-Belgium nuclear cooperation agreement. Such an agreement is necessary for any kind of nuclear trade between any two countries.

As for the KEPCO deal, it was confirmed that the company signed a contract with Mitsubishi Heavy Industries last December and Mitsubishi concluded a contract with BNFL commissioning fabrication of 16 PWR MOX fuel assemblies in Sellafield.

The revelation of the secret MOX contracts has been met with great surprise and negative reactions. Indeed, the contract of TEPCO and KEPCO is along the line envisaged by Atomic

Energy Council's Long Term Nuclear Energy Program decided in 1994, but everybody now knows the program is almost dead, particularly after the Monju accident. The electric companies stated that they would have most of the 45 tonnes of plutonium separated and fabricated into fuel in Europe and transported in that form to Japan, but there has been no public discussion on the use of MOX in LWRs and no formal relicensing application for burning of MOX in Japanese reactors.

Before the accident at Monju, the utilities planned to start official talks with local governments to get their "understanding" for MOX use at their sites, but this was indefinitely postponed after the Monju accident. There are now increasing concerns over large-scale plutonium use in LWRs among local residents and their concerns and fears are well represented by the Proposal of Three Prefectural Governors (see next page).

It is now widely believed that the secret contracts, made without advance consensus, have made it more difficult for the Japanese utilities to get approval from the local governments for MOX use and without their approval Japan can not go ahead with the MOX program. If the European MOX fabricators were to go ahead with the contracts even under these circumstances, it would surely result in a huge MOX fuel surplus in Europe.

In a recent development the Belgian State Court Advocate General declared Belgonucleaire's license to build a new MOX plant illegal. We will report in detail on this in the next issue.

Under the present situation, our IMA project (see column) has become all the more important and timely and we ask our readers to support and watch the progress of this project.

Proposal Concerning Future Nuclear Power Policy Implementation

January 23rd, 1996

<p>To: Prime Minister Ryutaro Hashimoto</p> <p>From: Governor of Fukushima Prefecture Governor of Niigata Prefecture Governor of Fukui Prefecture</p>	<p>Eisaku Sato Ikuo Hirayama Yukio Kurita</p>
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Introduction

On December 8th of last year there was a sodium leakage accident in the secondary loop of the fast breeder prototype reactor Monju resulting in a shutdown of the reactor.

This was a serious accident concerning the very heart of securing the safety of the fast breeder reactor considered to be the central pillar of the nuclear fuel cycle. Moreover, the Power Reactor and Nuclear Fuel Development Corporation's inadequate responses to the accident, including its methods of information release, has given citizens of Japan serious anxiety and distrust concerning our country's nuclear power development.

We believe that the current situation does not limit itself to debate over Monju's technological safety nor the regional problems of reactor-site local and regional authorities but concern Japan's energy policy itself.

We believe that if anxiety toward proliferation and plutonium's safety and other related nuclear issues --concern for which has mounted to an unprecedented degree both domestically and internationally--is to be seriously addressed, discussion and deliberation should be conducted not confined to past positions. It is vital that the government clearly delineate its responsibility and obtain again the Japanese people's consensus on this matter. This must include in its scope deliberation on the direction to be taken concerning our nuclear power policy itself and all issues closely related to it. This should include deliberation on; the nuclear fuel cycle (i.e. plutonium utilization policy) of which the fast breeder reactor is the central core, while taking into consideration a thorough investigation into the cause of the (December 8) accident.

In order to secure the safety of this multi-disciplined, massive and complicated nuclear technology, opinions of not only experts but others should be heard. Japanese citizens, residents --in other words the viewpoint from daily living itself-- should be heard during this deliberation. And the above should be implemented in a manner that will thoroughly reflect these views of the public.

We believe that unless the Government becomes thoroughly aware of these circumstances and works toward addressing these necessary areas, it will not be possible to obtain the understanding and approval of the Japanese people concerning issues of vital importance which would affect the course of our nation...the direction to be taken on our nation's nuclear and energy policy.

At present there is no consensus among the Japanese people with regards to approval and understanding on this issue. Under these circumstances we fear that nuclear facility-site local and

regional authorities which have contributed greatly to nuclear and energy policy, and also which now continue to face the various problems emanating from the nuclear fuel cycle policy, will not be able to obtain the public's understanding and cooperation. Rather, anxiety and distrust toward nuclear policy administration will only be increased.

Therefore, based upon the basic understanding stated above, we propose the following concerning the direction of our nation's nuclear energy policy.

Proposal

1. Extensive review should take place concerning the basic direction of our country's nuclear energy policy including the nuclear fuel cycle. This would include such areas as the light water reactor MOX fuel use program and back-end policy (how spent nuclear fuel will be stored and kept in the future, high level waste disposal issues, etc.).

For this purpose, a set-up with authorized power must be established in order that the Atomic Energy Commission thoroughly reflects the views of Japanese citizens and regions.

2. To achieve the consensus proposed above, there should be thorough access to information from the initial stage of the review process. In order that the public be able to exchange a wide variety of views on safety and other issues, forums, symposia and public hearings should be conducted by relevant administrative ministries and agencies, and this should be organized and conducted in various areas throughout Japan.

3. The Long-term Nuclear Energy Program should itself, if necessary, be revised after implementation of the above procedures, without waiting for the next scheduled review period.

When the government seeks the public's consensus according to the procedures proposed above, it should make the entire future of the light water reactor MOX program and back-end policy clear and concrete, including the various issues arising from them. This should be submitted to the affected local and regional authorities.

IMA PROJECT

The full title of the IMA (International MOX Assessment) is "A COMPREHENSIVE SOCIAL IMPACT ASSESSMENT OF MOX (uranium-plutonium mixed oxide fuel) USE IN LIGHT WATER REACTORS", which is a two year international study project initiated in November 1995 with funding from the Toyota Foundation. J. Takagi is the project director and CNIC is the coordinating organization. Involved are eight co-researchers including M. Schneider(France), M. Sailer (Germany) and F. Barnaby (UK).

It is the first comprehensive independent assessment of MOX use covering a wide spectrum of aspects ranging from safety, security, economics and human rights.

The project will have a workshop (October 24-25) and public meeting (October 26) for the intermediate report of the study in Kyoto this autumn. The public meeting is basically open to everybody, but because of the limited number of seats, we ask that interested persons contact CNIC (by fax or e-mail) in advance.

Revised Costs Prompt Significant Changes in Rokkasho Design

On January 23, the Japan Nuclear Fuel Industries, Inc (JNFI) announced revisions in construction costs and plant design for the nuclear processing plant currently under construction in Aomori Prefecture's Rokkasho village. In 1989, the cost of construction, including the cost of returned vitrified high level waste storage facility, was estimated at 840 billion yen. Due to repeated delays in carrying out the planned construction, costs have risen significantly since then. In order to meet these cost constraints fundamental changes in the plant's reprocessing operations have been proposed.

The proposed changes in plant design include:

- (1) to simplify the purification process of uranium and plutonium solutions from two steps to one
- (2) to combine the evaporation and drying processes of low level liquid waste into one
- (3) to move the storage of high-level liquid waste to inside a vitrification facility and reduce the number of storage tanks from 16 to 8
- (4) to enlarge the facility for housing spent fuel transportation casks.

The plant's operation has consequently been delayed and is now expected to begin in 2003.

The cost of constructing the reprocessing plant has doubled to 1.9 trillion yen with higher than expected construction costs, personnel expenses and the rising price in goods noted as the contributing factors to the increased cost estimate. According to an official of JNFI, the first estimate of 840 billion yen was made by referring to the costs of constructing COGEMA's UP-3 and BNFL's THORP (Thermal Oxide Reprocessing Plant). The great disparity between the two estimates indicates the inaccuracies in the method used to make the calculations.

Up to this point, no details of the proposed cost-saving measures have been disclosed. Only

a rough estimate of construction costs for the Rokkasho plant has been announced publicly. If the cost of the returned vitrified high level waste storage facilities is included, it is estimated that the overall cost of constructing the plant would exceed 2 trillion yen. Since the Rokkasho plant will become, when complete, the world's most expensive single plant, it is inevitable that even within Japan domestic criticism of policies concerning plutonium use will increase.

JNFI states that with the technology provided by COGEMA and already in use at UP-3, it will be possible for the Rokkasho plant to have an annual throughput of 800 tHM (tonnes of Heavy Metal). However, the burn-up of spent fuel to be reprocessed at Rokkasho will differ significantly from that at UP-3. (The average burn-up at UP-3 is about 38,000 MW/D while at Rokkasho it will be 45,000 MW/D.) There are many problems (such as the dissolution of the fuel and neutron emission) associated with attempting to directly apply the operating conditions of UP-3 to the future operation of Rokkasho. Also, it is possible that in the future the enlargement of the facilities to store spent fuel transport casks will lead to the permanent storage of spent fuel on site. Therefore, even if the plant were to be abandoned in the future, it is highly likely that it would become a nuclear waste site.

The Japan Atomic Energy Commission has limited their review of the relicensing of the Rokkasho reprocessing plant to the proposed changes referred to above. In light of the recent Monju accident and the resulting absolute loss of trust in the government's role in assuring safety regarding nuclear energy, it is imperative for the government to conduct a thorough review of all aspects of the Rokkasho facility, not merely the proposed changes.

Situation of Nuclear Power in South Korea

Kenichi Nishina

Yonggwang 4 has been in commercial operation since 1st January 1996. Currently eleven nuclear power plants are operating in South Korea. Four plants in Kori, four in Yonggwang, two in Uljin, and one in Wolsong. Only Wolsong 1 is a CANDU heavy water reactor; the others are PWRs. The South Korean government has been promoting nuclear power since 1978 when it began commercial operation of Kori 1, while Uljin 3,4 and Wolsong 2,3,4 were under construction.

Though the electric power generation of South Korea showed rapid growth from 118.6TWh in 1991 to 165TWh in 1994, the electric power generated by nuclear plants only grew from 56.3TWh in 1991 to 58.7TWh in 1994, because they could not build nuclear plants easily due to the strong opposition by residents of the proposed sites. The growth of power generation was attributed to fossil fuels, which grew from 56TWh in 1991 to 101.4TWh in 1994.

In 1982, in addition to the four areas where plants had already been built, nine areas were selected as proposed site for the construction of new N-plants. However, in response to a strong anti-nuclear movement, in January 1996, the South Korean government announced that they were abandoning construction of N-plants at almost all of the nine areas. Most likely the nuclear promotion plan will continue by constructing the new plants at the existing sites.

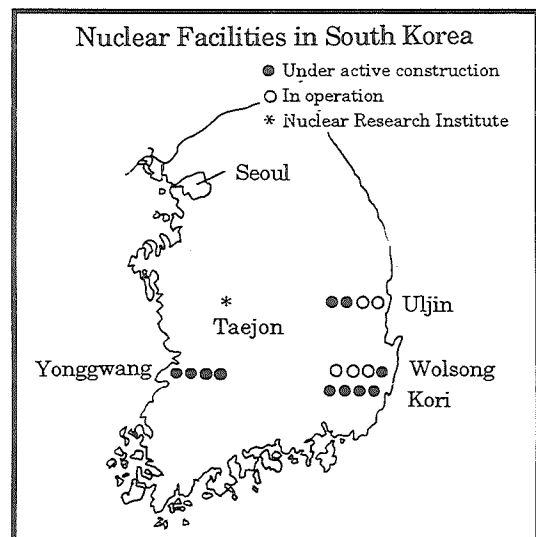
Residents of the N-plant sites have campaigned against the excessive extra construction, and for compensation for the damage caused by hot water from the plants. The most notable protests have been at Yonggwang County, Chongrah-Nam Prefecture.

For example, due to citizen opposition the county reversed its former decision to permit the construction of Yonggwang 5 and 6. The plan to build a radioactive waste depository on a tiny island in the West Sea, Kulope-do, was

abandoned last year, because some active geological faults were identified around the island. In this case as well, the opposition of the local residents was intensive.

Under these circumstances, Korean Electric Power Corporation and nuclear industries are eager to export nuclear power plants into the Asian region starting with China. President Kim Yongsam also thinks the exportation of nuclear technology and facilities is one of the most important issues related to Asian foreign policy.

The Korean government has never clearly stated its policy about the reprocessing of spent nuclear fuel. "Korean Nuclear Yearbook 1995" says "It is glad to say that the basic research of recycling spent nuclear fuel has progressed, especially the research on the combined Light/Heavy Water Reactor which directly use spent nuclear fuel from LWRs in HWRs. And, in addition, the conceptual research on the future of the fuel cycle to introduce MOX fuel is expected to have the most noticeable impact on the nation's policy on the management of spent nuclear fuel."



NEWS WATCH

The International Conference on Asian Nuclear Cooperation

The 7th International Conference for Nuclear Cooperation in Asia, which Japan's Atomic Energy Commission has been holding annually since 1990, was held from March 5-7, in Tokyo. The countries that participated were Japan, China, South Korea, Indonesia, Malaysia, the Philippines, Thailand, Vietnam, and Australia. It was the first time that Vietnam participated as an official member. In its country report China indicated that it aims to expand its use of nuclear power to 40GW-50GW by the year 2020 revealed its plan to construct an experimental reprocessing facility with an annual reprocessing capacity of 50 tHM by the year 2000 and to put it operational for commercial use after 2010; and Russia is now advising it on building an FBR experimental reactor (65 MW) by 2000.

Indonesia restated its target to put its first nuclear plant in operation at the beginning of the 21st century, indicating that NEWJEC (a subsidiary of Kansai Electric Power Co.) would complete a feasibility study by May 1996. It also emphasized that the key to the introduction of nuclear power in the country was financing, and revealed that it would compile an outcome of discussions by December on how to raise fund such as the BOO (Build Operate Own) method, in which the builder recovers his investment by owning and operating the power plant he built.

Participants from Vietnam, Thailand and the Philippines reported that their countries had been planning to introduce nuclear power and investigations were taking place concerning this matter. South Korea expressed its desire to participate in the International Thermonuclear

Experimental Reactor (ITER).

International cooperation in concrete terms has been promoted in the following five areas: (1) research reactors, (2) medicine, (3) agriculture, (4) public acceptance and (5) radioactive waste management. It was decided to add a new theme, starting this year "safety culture." The meeting was closed after deciding that the seminar on radioactive waste management would be held in Malaysia and the one on safety culture in Australia.

Nation's First N-Plant Referendum to be Held

The nation's first referendum on the construction of nuclear power plants will take place in the town of Maki in, Niigata prefecture on 4th August. The decision to hold the referendum was made during the city assembly on 21st March after Mr. Takaaki Sasaguchi a leading proponent of the referendum, was elected as the new mayor of Maki. (see "News Watch", NIT, No. 51)

In Japan, 1 city and 4 towns including Maki, plan to hold referenda about N-plant. There has never before been such a citizens-based referendum in Japan. Up until this the pro-nuclear side has used various tactics to avoid holding the referenda. For example, the pro-nuclear mayor of Kubokawa City resigned just before a planned referendum and the Kyushu Electric Power Co. decided to freeze the construction of the plant in Kushima City.

This referendum has become the center of the public attention because for the first time the input of local citizens is an essential part of the decision to construct nuclear power plants.

Internal Pump Tripped at Kashiwazaki 6

Tokyo Electric Power Co.(TEPCO)'s Kashiwazaki 6, the world first advanced BWR (ABWR), has been undergoing a trial run since December 23, 1995. On February 22, when the reactor was in operation at 25% output, one of the 10 internal pumps suddenly tripped. It tripped again on the 23rd even after the power circuit base board was replaced, TEPCO suspended operation of the reactor and began investigating the cause.

Finally on March 11 TEPCO published a report of the cause, according to which due to a malfunction of a control circuit, the pump's operation was automatically suspended; but as the condenser of the power source circuit was not fully discharged, an overcurrent occurred; then the protective circuit started running, and the power circuit was cut off, causing the pump to stop.

The recirculation pumps of BWRs often cause trouble, and one of the characteristics of

the ABWR is that the pumps are internal. They are built into the reactor's pressure vessel. This is the first accident to occur in this advanced point. The reactor resumed operation on March 12.

Recycled Nuclear Waste to be Used in Parks

Kansai Electric Power Co. is replacing the upper lid and steam generator of its Takahama No. 1's (PWR, 826 MW) reactor vessel. For this operation an opening is being made in the shielding walls of the reactor container. Some of the concrete waste produced are to be used as pedestals for sculptures to be set in a park in Takahama Town.

There is a plan to "recycle" a massive amount of waste concrete and metals produced when a decommissioned reactor is dismantled, and Takahama's case seems to be like a rehearsal. If we were to allow this happen, it might lead to radioactive contamination in the environment close to our daily lives.

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Notice: CNIC would like to apologize to our readers for the poor quality of proof reading that resulted in a great many typographical and grammatical errors in No. 51 of Nuke Info Tokyo. We would like to assure our readers that in the future we will make every effort to ensure it does not happen again. Thank you for understanding.

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