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CNIC Citizens' Nuclear Information Center

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US-India Deal: Report from NPT PrepCom



*In a park in Vienna
friends plant a tree
in memory of Mayor Itoh*

*Ceremony in memory of
Nagasaki Mayor Iccho Itoh,
slain on April 17th by a
member of an organized crime
syndicate.*

*The ceremony was held on
May 4th in the park behind the
Vienna International Center
during the NPT PrepCom.*

At the beginning of May, I went to Vienna to attend the first Preparatory Committee for the 2010 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons. When I returned to Tokyo, after the PrepCom had been running for one week, discussion of substantive issues had not even begun. Iran was blocking consensus on the agenda, because the draft under consideration stated that the PrepCom reaffirmed "the need for full compliance with the Treaty".

One would have thought that was a reasonable thing to reaffirm, but evidently Iran feared being made a scapegoat. NGOs and diplomats from other governments pointed out to the Iranian delegation that this phrase not only referred to the state of compliance of non-nuclear weapons states (NNWS) with their obligations under Article 4 of the NPT. It also referred to the nuclear weapons states' (NWS) (lack of) compliance with their

obligations under Article 6. Finally Iran accepted a compromise proposed by South Africa spelling out the understanding that "compliance with the Treaty" means with all provisions of the Treaty. This enabled substantive discussions to begin, albeit much later than scheduled.

The NPT regime faces numerous grave challenges, relating to both nuclear proliferation and disarmament. My main purpose in going to Vienna was to address one of these challenges. I

Contents

US-India deal: Report from NPT PrepCom	1,2
Rokkasho: earthquake/criticality flaws	3
Corrupt nuclear state and industry	4,5
Bilateral Agreements	6.7
2007 Electric Supply Plan and Industry Developments	8,9
Group Intro: No to radioactive waste!	10
News Watch	11,12

Please note CNIC's new address (see title at the top of this page)

wanted to draw attention to the threat posed by the US-India nuclear deal. This deal would undermine the basis of the NPT by allowing India, which is not a member of the NPT and which possesses and has tested nuclear weapons, to engage in nuclear trade with the US and, through amendment of the rules of the Nuclear Suppliers Group of countries (NSG), with the rest of the world (see NIT 117). My objective was to turn disparate national NGO campaigns into an international campaign and to generate formal discussion among NPT states parties.

Thanks to support from the other NGOs present, the first objective was achieved. It was agreed at the Abolition 2000 Annual General Meeting, held on May 6th, that a one-year working group would be set up within the Abolition 2000 network. Already people from seven countries have expressed interest in being involved. Hopefully this will be expanded over the life of the project.

As for the second objective, some of the governmental statements referred (directly or indirectly) to the US-India deal. Some governments spoke of the need to universalize the NPT. It was encouraging that Japan mentioned India, Pakistan and Israel by name when reiterating its call that they accede to the NPT as non-nuclear weapons states. Switzerland went further, saying, "...the project of co-operation in the field of civilian nuclear energy between India and the USA will not be without consequences for the non-proliferation regime based on the NPT. If this project is carried out it will call into question the validity of the compromise which enabled a consensus to be found on the extension of the NPT at the 1995 Review Conference."

Hoping to stimulate more debate, the Abolition 2000 AGM approved a statement to be handed to diplomats recommending that they challenge the US to show how the US-India nuclear deal can be reconciled with the NPT consensus position. The statement made clear that we believe the deal is inconsistent with the consensus position adopted at previous NPT Review Conferences and with UN Security Resolution 1172.

Our purpose in taking this approach was twofold. Firstly, we wanted to expand the debate beyond the NSG. The terms of the legislation

passed by Congress in December last year require Congressional approval of a bilateral agreement between the US and India, negotiation of an IAEA safeguards agreement, and consensus agreement of the NSG. However, it is clearly inappropriate for the NSG, with only 45 member countries, most of which are members of nuclear alliances, to have the final word on the deal when it affects all NPT parties, the majority of which are not members of such alliances. Secondly, we wanted to provoke a debate in which the onus was on the US to justify the deal in terms of the NPT. By demonstrating that precedent is against the deal, we hope to prevent a situation where the burden of proof is shifted to those NPT parties which are concerned about the deal.

We are in no doubt that if the deal were to proceed in its current form it would have a profoundly negative impact on the NPT and the non-proliferation regime in general. We are confident too that the US will fail to convince NPT states parties that the deal is consistent with the current consensus. We recognize that the current situation in which four nuclear-armed states (the above-mentioned three plus North Korea) remain outside the NPT is untenable and that the failure of the five officially recognized NWS to dismantle their nuclear arsenals is the key obstacle to progress. A way forward must be found on these and other issues, but the US-India nuclear deal, which would effectively increase the number of officially recognized NWS from five to six, is not the solution.

Philip White
(CNIC international liaison officer & NIT editor)

Haiku for the season

*colored bamboo leaves
whirling to the earth
rondo in the wind*

by Sachiko Kondoh

Rokkasho Update: Earthquake safety and criticality design flaws

Step 3 of "active tests" at the Rokkasho reprocessing plant were completed on April 26th. Although numerous problems have arisen, Japan Nuclear Fuel Ltd (JNFL) has not officially changed the November 2007 scheduled date for the commencement of commercial operations. Nevertheless, there is no doubt that there will be further delays.

Incident during denitration of mixed uranium/plutonium solution

On March 11th, during uranium/plutonium denitration tests, a second batch of uranium/plutonium solution was accidentally poured into a tray which had not been emptied of the previous batch. The operator noticed an irregularity after denitration of the first batch (7.3 liters) had been completed and denitration of the next batch commenced. In order to prevent criticality accidents, these trays are designed to contain only one batch of plutonium solution at a time. However, the first batch had become a solid as a result of the denitration process, so the volume was less than that of the original solution. It was therefore possible to add a second batch to the tray. The ease with which design measures aimed at preventing criticality accidents were circumvented on this occasion demonstrates the inadequacy of those measures at the Rokkasho reprocessing plant.

Under an agreement between the US and Japanese governments, the Rokkasho reprocessing plant is designed such that plutonium and uranium are separated, then remixed in a 1:1 solution, which is denitrated and stored as a uranium/plutonium mixed oxide (MOX) powder. The denitration process used at the Rokkasho reprocessing plant was originally developed at the Tokai reprocessing facility. It involves heating with microwaves, rather like a microwave oven.

JNFL employs an interlock system, based on weight, to prevent trays containing denitrated MOX powder from being returned to the denitration machine. However on this occasion, due to an equipment problem, the machine had been switched to manual mode and the interlock was not operable. JNFL foresaw the possibility of pouring

two batches of solution into a single tray, but it did not envisage the possibility of a second batch being poured onto a solid mixture of plutonium and uranium. JNFL blamed the operator for not paying sufficient attention to the movement of the tray and not checking carefully enough when adding the solution. It says it will adjust the process and amend the operating manual.

Earthquake safety design flaws

In April, deficiencies were discovered in the earthquake safety design of over ten types of equipment, including the channel box shearing machine, and fuel handling equipment in both the spent fuel pool and equipment in the separation building and the low-level waste processing building. The equipment in question was designed in 1993 by Hitachi Engineering and Services. In 1996 an employee noticed that an incorrect calculation had been made in regard to earthquake safety, but he did not report the mistake. A recalculation showed that the equipment failed to meet earthquake safety design standards and that it would not withstand the type of earthquake envisaged by these standards. If a strong earthquake struck Rokkasho, the equipment could fall and smash the spent fuel in the pool.

The discovery of the mistake at this time was a complete accident. For many years citizens have been criticizing the Nuclear Safety Commission in regard to earthquake safety. Last year, after a five-year process, the earthquake safety guidelines were finally revised and earthquake safety assessments are now being carried out for all nuclear facilities. The design flaw at Rokkasho was discovered during these back checks. JNFL is still piecing together the full picture, but clearly design and construction work will have to be redone. However, in regard to the fuel handling equipment above the spent fuel pool (a crane used to move the spent fuel), JNFL said that it would "carry out calculations using a more realistic analysis model" and continued to use the equipment in order to complete Step 3 of the active tests. Clearly the new calculation will downplay the impact of earthquakes. Work to bring the plant up to earthquake safety standards

Continued on page 7

Nuclear State and Industry: Bottomless Depths of Corruption

As reported in NIT 117, a web of falsification and deception in Japan's electric power industry was uncovered late in 2006. On 30 March 2007, all 12 power companies submitted reports to the government. Their reports, covering nuclear, fossil fuel and hydroelectric power stations, identified a colossal 10,646 irregularities. Of those, 455 cases involved nuclear power plants, including 230 at Tokyo Electric Power Company (TEPCO) and 123 at Chubu Electric¹.

On April 6th, power companies submitted reports to the Nuclear Industrial and Safety Agency (NISA) explaining how they propose to prevent such problems arising in future. NISA responded on April 20th by announcing administrative proceedings against four companies² in relation to seven reactors. The penalty imposed is that the companies must alter their safety provisions. NISA has not demanded that reactors be shut down, nor has it suspended any licenses. With such lenient treatment as this, one can hardly expect that such problems will not arise in future.

A previous TEPCO scandal came to light in August 2002 when a whistleblower revealed that the company had falsified inspection records and concealed problems at its nuclear power plants. Thereafter, similar problems were discovered at plants belonging to other power companies. On that occasion TEPCO was forced to close down all 17 of its nuclear reactors. Four directors accepted responsibility by resigning and the company promised to work to recover public trust. This time there is little evidence of contrition.

During the 2002 scandal, the discovery of corruption in the government's periodic inspections showed the hollowness of Japan's nuclear safety system. This time the Minister for Economy Trade and Industry directed that a thorough investigation be carried out to "uncover the truth with no concealment". However, by rights, these problems should have been identified at the time of the 2002 scandal. The root of the problem is that the government, the power companies and the plant makers are all in bed together. What we are seeing once again is the true nature of Japan's nuclear club.

Prompt Criticality Incident at Shika-1

As reported in NIT 117, Hokuriku Electric

failed to report a criticality incident in June 1999. The incident arose when three control rods dropped out of position during a periodic inspection at the Shika-1 reactor (BWR, 540 MW). The Japan Nuclear Technology Institute concluded that it was possible that the core was in "prompt criticality", meaning that the reaction was sustained by prompt (immediately released) neutrons alone. The incident has been provisionally categorized as a Level 2 incident on the International Nuclear Event Scale (INES).

There are two typical kinds of nuclear accident which can develop into major accidents. These are loss of coolant accidents and reactivity accidents. Three Mile Island (1979) was an example of the former, while Chernobyl (1986) was an example of the latter. A rapid increase of reactivity at the Chernobyl-4 reactor gave rise to an uncontrolled chain reaction. The incident at Shika-1 was a reactivity accident. It demonstrated that nuclear reactors are dangerous even when they are closed for periodic inspections.

Earthquake near Shika NPP

On March 25th this year a magnitude 6.9 earthquake struck the Noto Peninsula on which the Shika nuclear power plant (NPP) is located. The second floor basement of the Shika-1 and Shika-2 reactors registered shakes of 239 gal and 264 gal respectively. These reactors are set so that they scram if there is a quake of 190 gal and 185 gal respectively. As it happens, Shika-1 was down because of the discovery of the criticality incident, while Shika-2 was closed because of problems with its turbines (see NIT 113 & 115). The government's earthquake Headquarters for Earthquake Research Promotion announced that it is likely that a fault that was not considered in Hokuriku Electric's earthquake safety assessments for the Shika reactors moved together with another fault. This is further proof of the inadequacy of earthquake safety measures at nuclear facilities in Japan.

Revelations continue

On April 6th Hitachi submitted a document revealing an additional incident involving TEPCO. In October 1988, one of the 185 control rod drive mechanisms in the Fukushima II-4 reactor was out of order. TEPCO requested Hitachi to inscribe the

serial number of the out of order control rod drive mechanism onto a new one and load it without subjecting it to the required government inspection. Two of the four people involved in this incident are still working at TEPCO. The power company and manufacturer were fully aware that their action was illegal when they conspired to deceive the government, but the government's nuclear safety inspectorate was incapable of uncovering the deception.

During the 2002 TEPCO scandal, a suspension order was imposed on TEPCO's Fukushima I-1 reactor. The order related to falsification of an airtightness test on the reactor containment vessel during a periodic inspection in 1992. (As with the Fukushima II-4 case, Hitachi and TEPCO were both involved.) When the incident came to light, the government imposed a one-year suspension order on the grounds that it was a case of malicious falsification relating to equipment that was important for reactor safety and as such it was even more serious than the systematic falsification of inspection records for voluntary inspections. Why then, one must ask, was not a suspension order imposed for the incident at Fukushima II-4?

Can we be sure that there are no more incidents to be uncovered? Certainly not. NISA admitted as much during a meeting with politicians and citizens groups on April 13th. It seems that the depths of corruption in Japan's nuclear industry are unfathomable.

Can nuclear power be made safe?

Many people saw the 2002 TEPCO scandal as a red light for Japan's nuclear power plan. The general view at the time was that neither the power companies, nor the plant makers, nor the government could be trusted. However, some people hoped that this would be a wake up call. They hoped that in future plants would be operated with more caution and that there would be more disclosure of information.

In September 2002, after reflecting on its misdeeds, TEPCO announced a plan of preventative action. It promised to adopt various measures, including increasing transparency, improving company culture and instilling corporate ethics. Following the latest revelations, on 6 April 2007 TEPCO submitted a 12-point action plan to the government. Other companies also submitted plans, which included such things as prioritizing regulatory compliance. But do these plans address the real problem?

The first thing to realize is that companies exist to make profits. They will only behave ethically if it does not impede this prime objective. They will not prioritize nuclear safety if it threatens their continuing corporate existence. Secondly, the regulatory framework is never perfect. At best, it establishes the minimum necessary conditions. The question then arises of who judges whether the regulations are being followed. It has become clear that we cannot trust the regulator any more than the companies, but even if it wanted to, NISA does not have the ability to properly check what is going on. When representatives of CNIC and other NGOs visited NISA on April 13th, NISA showed not the slightest sign of remorse. The fact that it is located within the Ministry of Economy Trade and Industry, which also has the role of promoting nuclear power, does not help of course.

Despite all the talk of fixing the problems within the nuclear industry, little improvement is seen. As the saying goes, it is hard for a leopard to change its spots. Maintaining complete control over the process of nuclear fission is extraordinarily difficult at the best of times. It is difficult enough when there are no cover-ups or data falsifications. Furthermore, this is an industry where complete freedom of information is impossible for security reasons. Even in the hands of scrupulously honest people, highly skilled and alert to all the dangers, it is doubtful whether human beings are capable of safely operating nuclear power plants. As it is, these ideal conditions will never prevail. We must therefore conclude that the dangers posed by nuclear energy are just too great.

Yukio Yamaguchi (CNIC Co-Director)

- (1) If each incident is counted separately the number is much larger.
- (2) Japan Atomic Power Company, Hokuriku Electric, Chugoku Electric and TEPCO.
- (3) When control rods are removed from BWRs they are positioned below the reactor, whereas they are positioned above the reactor in PWRs. It is possible for control rods to fall out of BWRs under the force of gravity. However, it is also possible for control rods to be expelled upwards from PWRs during start-up.

Japan's Bilateral Nuclear Cooperation Agreements

Bilateral agreements are one of several measures designed to ensure that the use of nuclear energy is restricted to peaceful purposes. Other measures include the Nuclear Nonproliferation Treaty (NPT), safeguards agreements with the International Atomic Energy Agency (IAEA) and export controls.

Safeguards and other non-proliferation measures have been strengthened since the 1998 nuclear tests by India and Pakistan and the exposure of a flourishing nuclear black market, commonly referred to as the "Khan network", after its leader, Pakistani metallurgist A.Q. Khan. And last year we were reminded once again of the seriousness of the problem of nuclear proliferation when North Korea conducted a nuclear test.

On the other hand, the nuclear industry is being restructured (viz. Toshiba's takeover of Westinghouse) in anticipation of a nuclear energy renaissance and the opening up of new markets. India is a particular focus of attention right now, even though it has refused to join the NPT on the grounds that it is an unfair agreement. Instead, remaining outside the NPT system, India developed its own nuclear weapons under the guise of a peaceful nuclear energy program.

Negotiations on a deal to permit nuclear cooperation between India and the US are proceeding apace (see top story). The deal requires the approval of the Nuclear Suppliers' Group, of which Japan is a member, so Japan's response is a matter of great international interest. So far the government has not spelt out the conditions it will require for any such agreement, but there is no doubt that the deal is being discussed as part of negotiations to strengthen economic and security cooperation between the two countries. According to media reports, Prime Minister Abe is considering visiting India in August to further these negotiations.

Meanwhile, the Japanese government announced in April that it had begun negotiations with Russia on a bilateral nuclear agreement. According to media reports, the government wants to send to Russia uranium which was extracted from spent fuel reprocessed in the UK. It wants

Russia to re-enrich this uranium for use in Japanese nuclear power plants. The consequence of such an arrangement would no doubt be that the left-over depleted uranium would be disposed of in Russia. Uranium extracted under the reprocessing contract between Japan and the UK must be returned to Japan. Japanese power companies would rejoice if depleted uranium could be removed along the way and disposed of in Russia, but Russian NGOs have already voiced their concern about environmental pollution.

Russia and Japan signed a nuclear cooperation agreement in 1991. However, this agreement only relates to exchange of information and exchanges between nuclear experts. It does not cover trade in nuclear materials. This would be covered by the new agreement now being negotiated. The purpose of the agreement would be to ensure that Japanese nuclear material is not used in Russia's nuclear weapons program. Assuming it follows similar lines to other bilateral agreements, it would also specify that Japan may not divert material imported from Russia to weapons use. Japan insists that any Japanese nuclear material sent to Russia must be safeguarded. At the moment none of Russia's enrichment plants are covered by IAEA safeguards, but a safeguards system is being developed for the proposed international uranium enrichment centre in the east Siberian city of Angarsk. This is where Japan's reprocessed uranium would be enriched, not far from the World Heritage-listed Lake Baikal.

In reality, nuclear cooperation between the two countries has proceeded further than specified in the existing agreement. Tokyo Electric Power Company (TEPCO) has acknowledged that it

Cartoon by
Shoji Takagi



signed a contract in 1999 with Russian company TENEX for 100 tSWU worth of enriched uranium. The following year Namibian uranium was enriched in Russia then shipped to the US for re-conversion. This enriched uranium was used in reactors at the Fukushima I and Fukushima II power plants. In 2001 TEPCO signed another uranium enrichment services contract with TENEX, this time for 300 tSWU. It is believed that other Japanese companies have entered into similar contracts. Because the uranium delivered to Japan was re-converted in the US, it was covered by the Japan-US bilateral agreement, but Russian enrichment contracts should not have been approved in the absence of a bilateral agreement with Russia. As more details emerge we anticipate increased criticism of these transactions.

On 28 August 2006 a Memorandum of Understanding (MOU) was signed by the governments of Kazakhstan and Japan on promotion of cooperation in the peaceful use of atomic energy. The two countries intend to actively cooperate in the development of Kazakhstan's uranium reserves, said to be the third largest in the world, and in nuclear technology. The plan is that after the above-mentioned reprocessed uranium is enriched in Russia, it will be sent to Kazakhstan for re-conversion. It is reported that Japan also intends to sign a bilateral nuclear cooperation agreement with Kazakhstan. The fact that Kazakhstan recently completed its domestic ratification process for the IAEA Additional Protocol will facilitate negotiations for such an agreement.

In regard to the US-India nuclear cooperation deal, presumably Japan's nuclear industry will want to be involved if the Indian market is opened to the world. A bilateral agreement between India and Japan would be an essential element of a system to ensure that such cooperation is for strictly peaceful purposes. However, there are unresolved questions related to the safeguards agreement being negotiated between India and the IAEA. As part of the US-India deal, India has indicated that it will sign and adhere to an Additional Protocol with respect to civilian nuclear facilities, but it can be assumed that the Additional Protocol that India has in mind is more like the one designed for nuclear weapons states than the one for non-nuclear weapons states. There is a world of difference

between the two.

Currently Japan has bilateral nuclear cooperation agreements with Australia, Canada, China, France, the UK and the US. Also, an agreement with Euratom came into force in November 2006. In addition to these, there is the abovementioned agreement with Russia, which does not involve the transfer of nuclear material. There is also an official document covering exchanges between South Korea and Japan and we have been informed that a MOU with Indonesia will be signed in the near future.

The agreements with the US and Euratom, for example, contain reciprocal clauses banning diversion to military purposes, requiring prior consent for transfer to third countries, and granting the right to demand return of materials and equipment if the agreement is violated. Obviously the content of agreements depends not only on what Japan demands, but also on what the other country is willing to accept. However, in the situation where, unlike in the past, the Japanese nuclear industry is trying to make major inroads into the world market, it is more important than ever to ensure that Japanese nuclear material and equipment is not used to develop nuclear weapons.

Japan's commitment to "peaceful use" will come under the microscope even more than in the past.

Hideyuki Ban (Co-director)
Philip White (NIT editor)

Continued from page 3 will require an extended shutdown, but JNFL would rather sacrifice safety than change its operating schedule.

"Active tests" at Rokkasho are now on hold because of the earthquake safety design flaws. The Nuclear Industrial and Safety Agency has indicated that it will not allow JNFL to proceed to Step 4 until these flaws have been rectified.

Masako Sawai (CNIC)

2007 Electric Power Supply Plan and Nuclear Industry Developments

At the end of March the Agency for Natural Resources and Energy released the 2007 Electric Power Supply Plan. The Plan brings together the plans of all the electric power companies. However, it is quite divorced from reality and is a "plan" in name only. The inherent inconsistencies are clearer than ever in Fiscal Year 2007.

In regard to predicted electricity demand, for the 10-year period to 2016 the average growth rate is set at 0.9% for both total capacity and peak demand. In last year's Plan the growth rate was 0.9% for total capacity, while peak demand was predicted to grow at a rate of just 0.8%. There is a clear trend that even when total capacity grows, peak demand does not grow with it. Indeed, the Plan analyses both the expected outcome for FY2006 and the estimate for FY2007 in this way. The reason for going against the trend and predicting growth in peak demand is presumably that this is the basis for increasing electricity generation capacity. In order to justify plans to build large-scale nuclear power plants, there must be demand to match this increased capacity.

It is difficult to adjust the output of nuclear power plants, so if large-scale plants continue to be built, the percentage of nuclear in total

electric power generation will become even larger. According to the Plan, the electricity generated by nuclear power plants in FY2006 is expected to be 30.6% of total electricity generation. The Plan predicts that this will rise to 41.2% in 2016. However, nuclear is not the only area where capacity is predicted to increase. Over the next 10 years nuclear capacity is predicted to increase by 11.91 GW, while capacity is predicted to increase by 2.94 GW and 4.46 GW for coal-fired plants and LNG plants respectively. But even though capacity increases, electricity generation falls by 26.5 TWh for coal and 10.3 TWh for LNG. The reason for this is that electricity generation from nuclear increases by 142.2 TWh. The net result is that whereas in 2006 the capacity factor for coal-fired plants was 74%, this is predicted to fall to 61% in 2016. Although this might be good from the point of view of CO2 emissions, it is very wasteful economically. In the case of LNG the reduction is smaller - from 49% to 44%. That is because coal is competing with nuclear for base-load generation, so it is affected more by increased nuclear capacity.

This assumes, of course, that the Plan should be taken at face value. The increased nuclear capacity of 11.91 GW in ten years is calculated on the basis that 12.262 GW will be gained from nine new

Table 1: Nuclear Power Development Plan (1)

Power Company	Location	Power (MW)	Commence(d) Construction	Commence Operations	Status
Hokkaido Electric	Tomari-3	912	Nov.03	Dec.09	Under Construction
Tohoku Electric	Namie Odaka Higashidoori-2	825 1,385	FY2013 FY2013 or after	FY2018 FY2018 or after	
Tokyo Electric	Fukushima I-7 Fukushima I-8 Higashidoori-1 Higashidoori-2	1,380 1,380 1,385 1,385	Apr.09 Apr.09 Nov.08 FY 2011 or after	Oct.13 Oct.14 Dec.14 FY2017 or after	Safety Assessment
Chugoku Electric	Shimane-3 Kaminoseki-1 Kaminoseki-2	1,373 1,373 1,373	Dec.05 FY2009 FY2012	Dec.11 FY2014 FY2017	Under Construction
J-Power	Ohma	1,383	Aug.07	Mar.12	Safety Assessment
Japan Atomic Power Company	Tsuruga-3 Tsuruga-4	1,538 1,538	Oct.10 Oct.10	Mar.16 Mar.17	Safety Assessment Safety Assessment
Total	13 Reactors	17,230			

1. Table made by CNIC based on 2007 *Electric Power Supply Plan* (1 April 2007 – 31 March 2008)

plants and 0.357 GW will be lost when Tsuruga-1 closes. However, besides the two reactors currently under construction, the predicted start-up dates for the other seven planned reactors have all been pushed back year after year.

The predicted start-up date for Ohma is the same as last year, but the date for commencing construction has been pushed back one year. The predicted start-up date has been delayed sixteen times so far and further delays are inevitable. As a result of more scandals involving Tokyo Electric Power Company (TEPCO), the stance of the governor of Fukushima Prefecture has hardened, so it is impossible to predict when, if ever, Units 7 & 8 at the Fukushima I plant will be built. The start-up dates for these reactors were postponed for the twelfth time in the latest Plan. Up until the year before last, Kaminoseki-1 had been postponed six times. The fact that there is no change this time is just a pose. TEPCO's Higashidoori-1 has been postponed for the tenth time. Tsuruga-3&4, which had been postponed five times up until the year before last, were not further postponed in last year's Plan, but it seems that the two-year postponement this year is making up for the undue optimism of last year.

In other words, the expansion of nuclear power predicted in this year's Plan exists only on paper. This can also be seen in the nuclear industry sales forecast (figure 1), even though this forecast itself is based on wishful thinking.

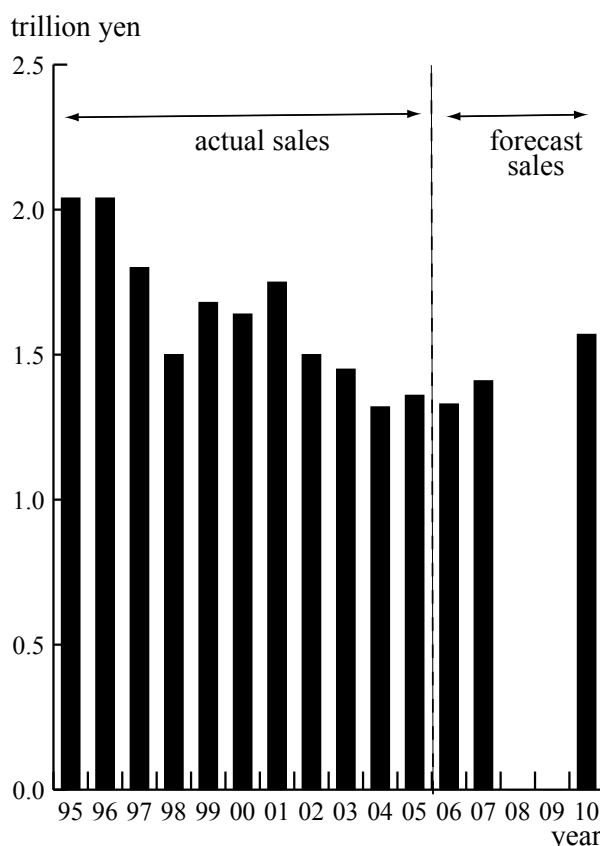
The nuclear industry is well aware that it need not concern itself about extravagant predictions of growth in peak demand, nor about extraordinary reductions in the capacity factor of coal-fired plants. We can safely assume that there are two predictions in existence: the prediction shown in the FY2007 Electric Power Supply Plan, and the one on which industry bases its business plans.

Nishio Baku (CNIC Co-Director)

GW = gigawatts = 10^9 watts

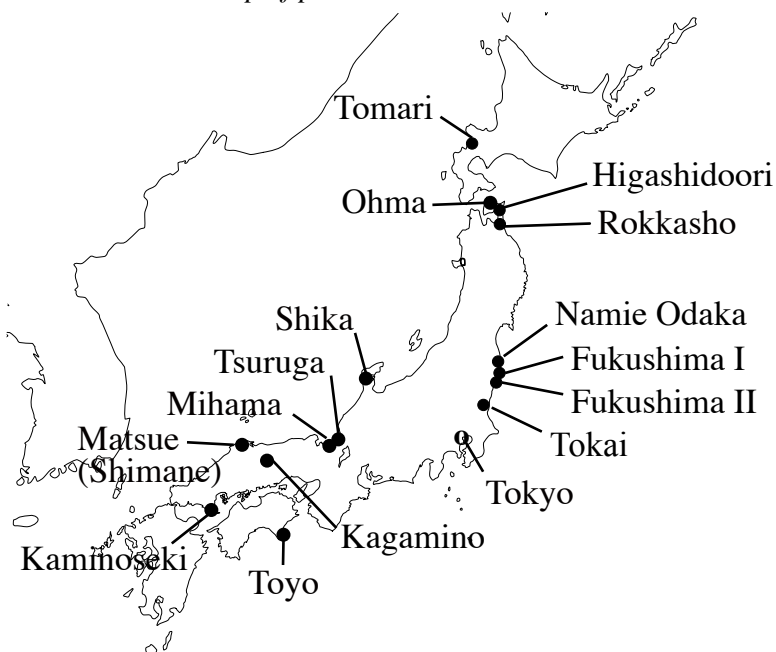
TWh = terawatt hour = 10^{12} watt hours

Figure 1 Nuclear Industry Actual and Forecast Sales



Based on survey by Japan Atomic Industry Forum

Map of places mentioned in NIT 118



Group Introduction:

No to Radioactive Waste! Committee for a Prefectural Ordinance

by members of the group

In 1981 experiments for a high-level radioactive waste dump were carried out at the Sanpo mine in Okayama Prefecture. This was the first of many attempts to site a high-level waste dump in the Prefecture. A signature campaign was begun in 1990 to establish an ordinance to keep high-level waste out of Okayama, but although over 340,000 people signed the petition, the ordinance still has not been adopted. Nevertheless, the campaign continues and the group takes its name from this campaign.

Kamisaibara Village, on the border of Okayama and Tottori Prefectures, was the site of an experimental uranium enrichment facility owned by the Power Reactor and Nuclear Fuel Development Corporation (PNC) (now Japan Atomic Energy Agency (JAEA)). In 1998, after PNC was reorganized, it was decided that the facility would be closed. In April 1996 the local mayor was quoted as saying that he was hoping for projects that would attract subsidies to the village and that a high-level waste dump was one possibility, then in 1998 the mayor and the speaker of the local assembly suggested to PNC that a dump be located on the former uranium enrichment site.

It was at that time that we first interviewed the mayor to find out his true motive in submitting the request to PNC. He said, "Your group is campaigning very fiercely. I imagined you to be a fearsome bunch, but I am surprised to find that you are ordinary people." From then on we were always careful to approach local governments as ordinary people and to explain in ordinary language. The first time we leafleted all houses in Kamisaibara Village was in 1999. Some people refused to listen to us. We felt the limitations of outsiders trying to persuade village people, but we asked them as fellow human beings to understand our concerns about radioactivity and pointed out that people downstream were affected too. Every year thereafter we have continued to leaflet all homes in the village. Nowadays people thank us for taking the trouble to come to their village.

The Diet passed the high-level waste disposal law in 2000 and in October that year the Nuclear Waste Management Organization (NUMO) was established. In 2001 it was decided that the dump site would be chosen through public applications, with the mayor as the respondent. We feared that these would be "public applications" in name only, while in reality local politicians and other influential people would lay the ground work. It seemed to us that "public



applications" were being called with Kamisaibara in mind. The village's 1998 request for public projects, its extensive land holdings, its long association with PNC and the population's familiarity with radioactivity made Kamisaibara a prime candidate.

We calculated that applications would be called around the end of 2002. We chose November to visit the mayors of all 78 municipalities in Okayama Prefecture. Sure enough, public applications were called on December 19th, but by then we had already visited most of the municipalities.

Be sure to meet the mayors and explain in simple language the dangers of high-level waste and geological disposal! This is our iron-clad principle. By February 2003 we had received replies from 77 mayors saying they would not apply to host the dump. The only hold-out was Kamisaibara. Whenever there is a change of mayor or when municipalities merge we resubmit our demands. We now have replies rejecting the dump from 27 municipalities, including Kagamino Town, the post-merger name of Kamisaibara Village. (There are far fewer municipalities now than there were in 2002. Ed.) Their replies are not legally binding, but they are priceless to us.

The following are some lessons that we have learnt through our campaign:

1. Carefully analyze the situation and anticipate the moves of NUMO and the Agency for Natural Resources and Energy;
 2. Create an organization that can respond rapidly;
 3. Meet people face to face and speak frankly and specifically about the dangers of high-level waste and geological disposal;
 4. Develop people and groups within local communities who understand and support our goals.
- Each year the pressure to accept a high-level waste dump increases, so we know we must continue our campaign with tenacity.

The conference shown in the above photo was held in Okayama City in February 2007. The purpose was to spread the success of the campaign in Okayama Prefecture to the rest of Japan. 300 people attended from Japan and South Korea.

NEWS WATCH

Mihama-3 criminal case finalized

On 26 February 2007 the cases of five employees of Kansai Electric Power Company (KEPCO) and an employee of a KEPCO subsidiary were sent to the Fukui District Public Prosecutors Office in relation to the Mihama-3 accident (9 August 2004 - see NIT 102, 103, 106). Five people died in the accident and six others were injured. Police sought charges against the employees for manslaughter resulting from professional negligence.

On March 20th the Fukui public prosecutor decided not to indict one of the KEPCO employees and filed only summary indictments against the other five people. On the 23rd the summary court ordered that fines ranging from 300,000 yen to 500,000 yen be paid by May 9th, so the case was all over on May 10th.

Relatives of the deceased expressed dissatisfaction that charges were not laid and that papers were not even filed against KEPCO executives. They indicated that they will apply for a review of the criminal investigation.

MHI and Areva agree on basic specs. for new reactor

On April 11th in Tokyo Mitsubishi Heavy Industries President Kazuo Tsukuda and Areva President Anne Lauvergeon announced agreement on basic specifications for a new reactor. The reactor is a 1100 MW PWR, which would be capable of using MOX fuel. A design outline will be completed in June and work on the basic design will start in July.

Uranium exceeding nuclear limit handled at nuclear fuel plant

On April 5th Nuclear Fuel Industries, Ltd. (NFI) announced that on three occasions on February 24th a quantity of uranium exceeding the permitted nuclear limit was handled at its nuclear fuel fabrication plant in Tokai Village, Ibaraki Prefecture. The problem arose when examining uranium oxide powder enriched to 4.9% in America. Eighteen kilograms remained after a sample was extracted. This should have been

transported in a container capable of handling up to 106kg, but by mistake it was transported in a container capable of handling only 15kg.

Fortunately criticality was not reached, but on April 13th the Nuclear and Industrial Safety Agency gave NFI a stern warning and demanded that it implement preventative measures.

Application for clearance for waste from Tokai-1

On April 27th the Japan Atomic Power Company (JAPCO) applied to the Minister of Economy, Trade and Industry for confirmation under "clearance" arrangements of radioactivity concentration measurements and assessment results for 107 tons of metal waste arising from dismantling of the Tokai-1 reactor (GCR, 166MW, 1966-98). This is the first application since the introduction of a "clearance" system in Japan (see NIT 104, 105 and 106). JAPCO estimates that a further 4,800 tons of metal and 35,400 tons of concrete will be scheduled for clearance.

Residents of Toyo Town reject high-level waste dump

Toyo Town, Kochi Prefecture, was the first town in Japan to submit a formal application to become a candidate for a high-level waste dump (see NIT 117). However on April 22nd the mayor who submitted the application was defeated in an election and the following day the new mayor submitted a cancellation notice to the Nuclear Waste Management Organization of Japan (NUMO). On the 25th NUMO applied to the Minister for Economy, Trade and Industry for an alteration to its business plan. This was approved on the 26th and Toyo Town's candidacy was annulled.

The former mayor submitted the application to NUMO on January 25th this year. In doing so, he went against the wishes of the townspeople and council members, the governors of Kochi and neighboring Tokushima, as well as the surrounding municipalities. The town council passed a resolution recommending that the mayor resign. After he refused to do so, residents began recall

proceedings. He finally resigned on April 5th when it had become clear that if he did not do so he would be recalled. He stood in the election which followed, but was opposed by a former council member of neighboring Muroto City, who promised to cancel the dump application. The former mayor said that if the town became a dump candidate electricity rates would be cut, subsidies would be provided for people requiring nursing care, school lunches would be provided free of charge, and so on, but he only managed to garner 29% of the vote, compared to 71% for the other candidate.

MHI becomes core FBR developer

The Ministry of Education, Culture, Sports, Science and Technology (MEXT), the Ministry of Economy, Trade and Industry (METI), the Federation of Electric Power Companies (FEPCO), and the Japan Atomic Energy Agency (JAEA), all of which are involved in promoting research and development towards the realization of Japan's fast breeder reactor (FBR) cycle, announced on April 18th that Mitsubishi Heavy Industries, Ltd. (MHI) had been selected as the core plant maker for the FBR development program. Notice of selection was handed by JAEA president, Toshio Okazaki, to MHI president, Kazuo Tsukuda, the following day.

The decision to vest responsibility and authority in a single company was due to the failure of the "all Japan" style used in past development projects (Mutsu nuclear powered ship, Advanced Test Reactor, Monju FBR). However, there is also great risk in the one company approach. Two Japanese companies are said to have submitted applications, which means that, of the three major plant makers in Japan, either Toshiba or Hitachi did not apply.

Shake at Shika 1.9 times greater than predicted

On April 19th the Nuclear and Industrial Safety Agency released the results of the periodic analysis carried out by Hokuriku Electric of the strength of

the shake (acceleration) at the Shika nuclear power plant at the time of the March 25th earthquake on the Noto Peninsula. The measurement for the 0.625-second period was 711 gal. Based on the old earthquake guidelines (revised in September 2006 - see NIT 114), the "extreme design earthquake" (S2) was estimated to be 374 gal. The shake caused by the March 25 earthquake was 1.9 times stronger than this. The measurement for the 0.37-second period of 696 gal was also larger than the estimated S2 figure of 645 gal.

Increased uranium imports from Kazakhstan

On April 30th a joint government and private sector mission to Kazakhstan signed a 24-point agreement on cooperation with Kazakhstan companies including national atomic company Kazatomprom. The mission, led by Minister of Economy, Trade and Industry, Akira Amari, included heads of power companies and other private sector companies. It was predicted that, through participation in development of uranium mines and purchase of refined uranium ore, imports of uranium from Kazakhstan would increase from the current 1% to 30-40% of total Japanese consumption. Besides this, Toshiba Corporation agreed with Kazatomprom to begin investigating the possibility of cooperating in the construction of nuclear power plants and in nuclear fuel business. Also, Global Nuclear Fuel Japan Co. Ltd., Mitsubishi Nuclear Fuel Co. Ltd., and Nuclear Fuel Industries, Ltd. signed a memorandum of understanding with Kazatomprom on cooperation in the field of uranium reconversion. Reconversion in Kazakhstan is planned for Japanese uranium recovered from reprocessing (see article on page 6 and NIT 117).

Nuke Info Tokyo is a bi-monthly newsletter that aims to provide foreign friends with up-to-date information on the Japanese nuclear industry as well as on the movements against it. Please write to us for a subscription (Regular subscriber - \$30 or ¥3,000/year; supporting subscriber \$50 or ¥5,000/year). When paying in Japan, the subscription fee should be remitted from a post office to our post office account No. 00140-3-63145, Genshiryoku Shiryou Jouhoushitsu. Due to costly processing fees on personal checks, when sending the subscription fee from overseas, please send it by international postal money order. Alternatively, you can ask us to send you details regarding bank transfers. We would also appreciate receiving information and newsletters from groups abroad in exchange for this newsletter.

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