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Judgement on JCO Criticality Accident — Missing Links still Remain



The Mito District Court (15km from JCO in Tokaimura) where the ruling on JCO was delivered.

On the morning of March 3, the Mito District court delivered a ruling on JCO Co. (JCO), a nuclear fuel-processing plant in Tokaimura, Ibaraki Prefecture, including a judgment on former and current officials of the company.

It has been three-and-a-half years since the criticality accident at JCO's Tokai facility and just thirty days since a court ruling on the Monju FBR (see NIT 93).

The trial sought to determine responsibility for JCO's illegal operations that led to the accident, including the death of two workers. In its ruling, the Court imposed fines on JCO and also

on the former head of the Tokaimura plant. In its judgments that the Court also ordered suspended prison sentences in the case of the former head of the JCO plant and five other officials who served

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in management positions or as field supervisors at the time of the accident.

The ruling adopted the prosecution's claim that the cause of the accident could not be extended to include the responsibilities of other related organizations. On the other hand, the Court meted out sentences that were lighter than penalties demanded by the prosecution on the grounds that responsibility for the accident could not be restricted to the defendants being accused at the trial (following the claims of the defendants).

Now that the Court has determined that there were additional causes of the criticality accident, -- beyond the roles played by the defendants -- it should clearly spell them out. Although the ruling stated that JCO should receive "the maximum penalty under the relevant law," the penalty was only a one million yen fine. It included 500,000 yen fine for violation of the Law for the Regulation of Nuclear Source, Material, Nuclear Fuel Material and Reactors (Nuclear Reactor Regulation Law) and 500,000 yen fine for violation of the Law on Labor Sanitation. Since both prosecutors and defendants did not make an appeal to the higher courts within two weeks following the Court decision, the results of the ruling case were confirmed on March 18.

PNC's Joyo and JCO

JCO manufactured uranyl nitrate solution in the Conversion Test Building at the Tokai facility, which was used to produce fuels for the experimental fast reactor Joyo, owned and operated by Japan Nuclear Fuel Cycle Development Institute (JNC). JNC was formerly the Power Reactor and Nuclear Fuel Development Corporation (PNC). Therefore, uranium -- which caused the criticality accident -- was supposed to be loaded at Joyo's reactor, otherwise nothing would have happened.

The JCO had been manufacturing a highly enriched uranyl nitrate solution since the 1980s. The criticality accident occurred when workers at JCO attempted to homogenize the density of the solution by pouring it into the Precipitation Tank not used during normal manufacturing process.

Joyo reached its criticality on April 24, 1977. However, just before criticality at Joyo, the Carter administration in the United States announced a non-proliferation policy that sought to freeze the

operation of reprocessing plants and development of fast breeder reactors. Japan-United States negotiations on reprocessing policy subsequently took place. As a result of talks, Japan was prohibited from extracting plutonium powder on its own. Due to restrictions imposed by negotiations, the manufacturer, which was making mixed plutonium and uranium oxide fuels (MOX) for Joyo and other plants was required to mix a plutonium solution and a uranyl nitrate solution. A method developed by the PNC, called the "Microwave Heating Denitration" was used to de-nitrate the solution. In short, the need for manufacturing a uranyl nitrate solution (rather than a powder) was created under such political pressure.

The Joyo initially adopted the "Mark-I" reactor core design, adopting the same breeder reactor core used in Monju. The Mark-I reactor core ceased operations in December 1981, after it reached a thermal output of 50MW in July 1978 and 75MW in July 1979. Subsequently, modifications to Mark-II reactor core (thermal output 100MW) was made. But, the modification was made only to the irradiation reactor core. With further modification to the Mark-II reactor core, it boosted the maximum fuel burnup from 50,000MWd/t to 75,000MWd/t, and it also extended operation days per one cycle from 45 days to 70 days. It was necessary by the re-designed Mark-II reactor core to manufacture 18.8% enriched uranium.

It was in these circumstances that PNC asked JCO to produce 18.8% enriched uranium. (In retrospect, the increased enrichment of uranium for Joyo resulted in a cause of the criticality accident in the Conversion Test Building.) In order to treat such high enriched uranium, modifications to the Conversion Test Building were made and a general safety review undertaken.

One of the important points revealed in the court trial was an officer at the PNC who had been sent to the Science and Technology Agency (STA, currently the Ministry of Education, Culture, Sports, Science and Technology, MEXT) as a safety review officer who conducted the safety review necessary for modification of the Conversion Test Building. For detailed analysis of problems associated with safety inspections, please refer to previous articles in No. 86 and No. 91.

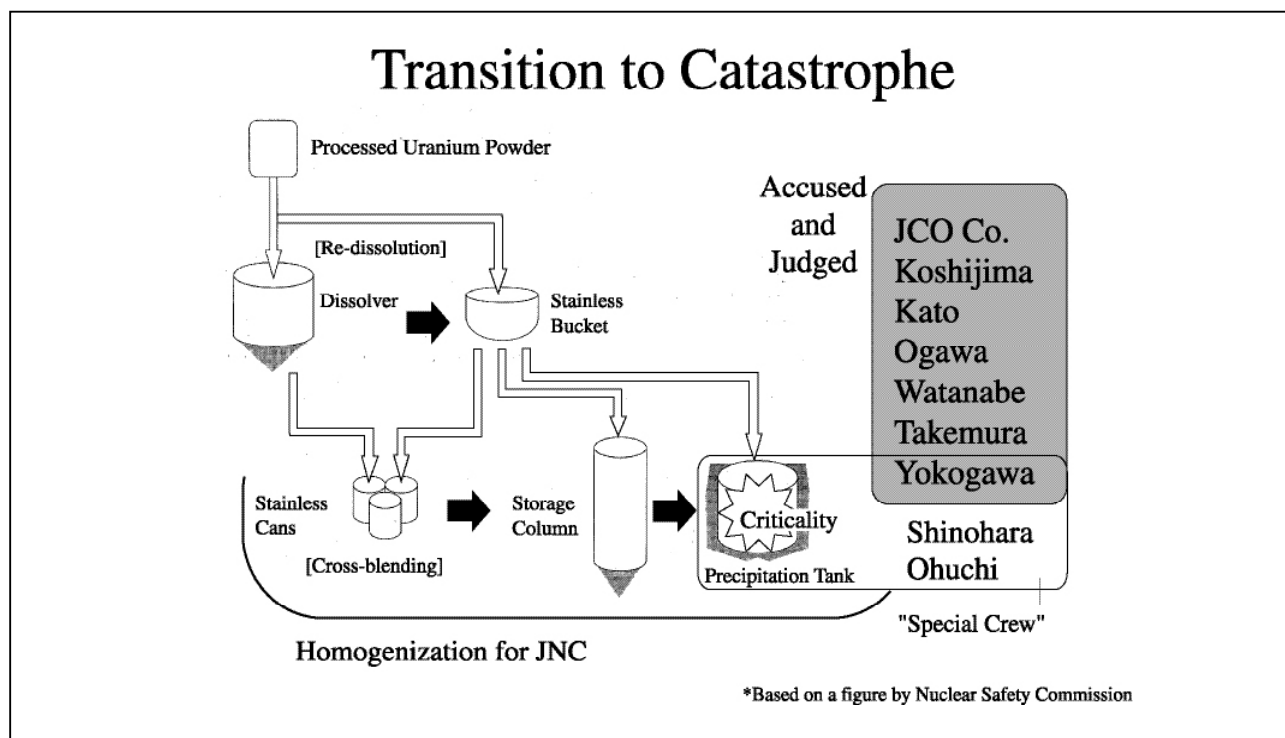


Figure: Transition of Manufacturing Process in the Conversion Test Building at JCO

On January 27, the Court ruled “nullification” of construction approval that had been given in 1983 to the PNC’s fast breeder reactor Monju when it was discovered that there were various frauds in the safety review (ref. No. 93). In the same way, review of JCO should be subject to the similar safety standards, both with respect to inspection procedures and also in terms of human ties with government agencies.

Homogenization of the Solution and PNC

After the plant had passed a safety review, PNC requested JCO to homogenize uranyl nitrate solution up to one lot (40 liters). In such circumstances, JCO invented the so-called “cross-blending” method to homogenize the entire solution by using multiple stainless cans, and began manufacturing the solution in 1986. PNC requested blending the solution to a uniform density, due to the approved conditions established for transporting the solution from the facility to the PNC’s Tokai plant. If PNC had manufactured the solution on its own, it would have avoided such licensing procedures. Thus, the product quality data -- one unit to be considered as 10 cans, each containing 4 liters -- had to be submitted to authorities for inspection prior to shipping.

Yet, if the quality of the solution was different

for each batch (considered as one unit) it would require significant inspection time for testing. Normally it takes several days for one safety analysis. Therefore, homogenizing the solution in a uniform way to one lot of 40 liters would require only one test, reducing time and effort substantially.

During the 1980s, JCO used the “cross-blending” method as described above to make the density of the solution consistent and started to fabricate the solution by using the storage column in the facility during 1990s. Seen in this way, it can be said that the transformation of manufacturing process (from “cross-blending” to the storage column, and then to the precipitation tank) made criticality more likely to happen. Among the three methods, only the precipitation tank had a structural design likely to trigger criticality.

It is also known that workers at the JCO facility carried out “re-dissolution” work by using stainless containers (bucket). But, the direct cause of the accident was in the process used to make the density of the solution consistent. To summarize these points, neither the blending methods performed at the precipitation tank and storage column nor the cross-blending was checked during the safety inspection of the stainless-steel maker (Conversion Test Building in 1984.

Moreover, the Conversion Test Building was originally designed to handle uranium powder and only later, as a result of Japan-United States agreements, was it used to manufacture uranyl solution. In short, JCO was forced to develop many different manufacturing processes in order to make use of the facility's equipment originally intended to produce power products.

In principle, the manufacturer should have designed a different way for manufacturing the solution, separate from processes used for power products. However, the safety review of the Conversion Test Building approved adapting the equipment so that it could be used for making the uranyl nitrate solution. Furthermore, even several years after the safety review, PNC requested JCO undertake a process to make the solution's density consistent, knowing that such work was not approved by the explicit conditions of the license.

Limitation of the Court Trial

Yet, such "factors external to JCO" were used as the defendant's strategy to establish extenuating circumstances at the trial. Lawyers for the prosecutions or lawyers of the accused made efforts to investigate the cause of the accident thoroughly and comprehensively.

The Court did not investigate significant people involved in the accident, including the JCO Accident Examination Committee organized by the Nuclear Safety Committees. Nor were important people called as witness at the trial. The list would include the government's Nuclear Safety Committee that approved the safety review without checking claims by JCO and governmental

officers; the PNC's officer responsible for requesting JCO to create a manufacturing method to assure the solution's consistent density, and the STA official responsible for administering JCO.

There were many uncertainties and inconsistencies in the testimony of accused -- for example, the claim that "nobody has any knowledge of criticality," or again "it was believed that solution was less likely to cause criticality than a powdered form". (Actually, criticality is more likely to occur in a solution form.) Crucial questions regarding why the precipitation tank was invented were not to answered and detailed discussion on how it was used did not take place.

Everyone involved in this trial protected them self and so it ended as though there were no direct causes for the accident, no one to accuse, no one to provide answers. It can be said that the ruling was a kind of negotiated outcome devised to work for prosecutors, accused, the PNC, and the government. Thus our unstinting efforts to reveal the truth in the accident are still necessary.

On April 18 -- next month after the ruling -- JCO announced that it would not to resume the operation of the facility. At the same time, JCO also announced that it planned to dismantle the interior of the Conversion Test Building -- the scene of the accident. Since the investigation of the cause of the accident is still premature, the JCO facility should be preserved as an important historical monument, instead of clearing it as an excuse for the end of trial.

(Satoshi Fujino, CNIC)

Table: Prosecutor's Demand and Court's Judgement of the accused (Higher proportion of J/D means that strict conviction was made of those accused.)

	Prosecutor's Demand (D)		Court's Judgement (J)			J-D	J/D
	Imprisonment (years)	Fine (mil. yen)	Imprisonment (years)	Stay of Execution (years)	Fine (mil. yen)		
JCO		1			1	Same	100%
Koshijima		0.5			0.5	Same	100%
	4		3	5		-1	75%
Kato	3.5		3	4		-0.5	86%
Ogawa	3		2	3		-1	67%
Watanabe	3		2	3		-1	67%
Takemura	3		2.5	4		-0.5	83%
Yokogawa	2.5		2	3		-0.5	80%

ALL 17 of TEPCO's units shut down

Tokyo Electric Power Company Inc. (TEPCO) shut down all of its nuclear power plants (NPPs) for inspection and maintenance purposes on April 15. TEPCO operates 17 units with a total output capacity of 17,308MW, including Fukushima No. 1 (6 BWRs, 4,698MW), Fukushima No. 2 (4 BWRs, 4,400MW), and Kashiwazaki-Kariwa (5 BWRs, 5,500MW + 2 ABWR, 2,712MW). The former two NPPs are in Fukushima Prefecture and the latter in Niigata Prefecture.

On April 15, there emerged a situation where virtually every TEPCO-owned NPP ceased generating electricity.

Dr. Sunshuke Kondo, a professor of Tokyo University called this situation a “simultaneous breakdown” (showing the danger of several NPPs failing at one time). In a recently published article, he asserts that, “it is true that the managers of electric power companies started to suspect nuclear energy, which have the “simultaneous breakdown” risk, as a pillar of electric supply in the age of electricity restructuring.” (Energy Review 2003.1, in Japanese).

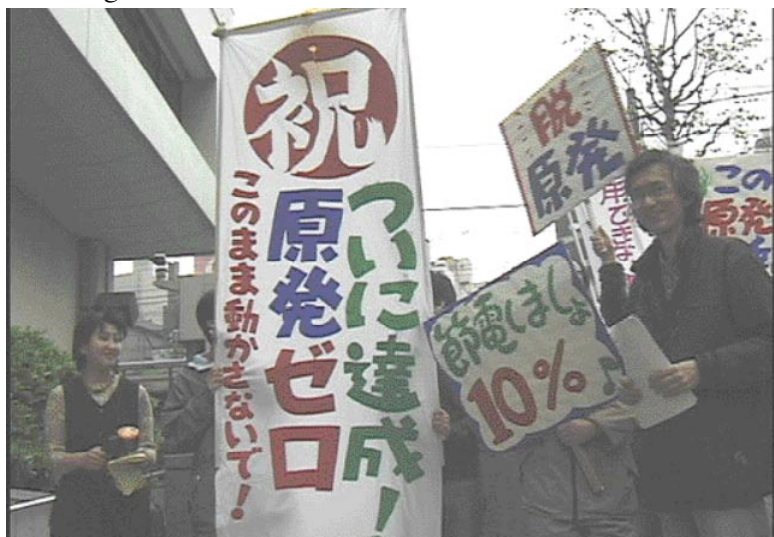
The “simultaneous breakdown” has been regarded as a risk posed in the event of an accident. The risk comes about when an accident in one NPP necessitates a comprehensive investigation of the other NPPs, leading to the failure of all suspected NPPs. The whole situation proved that the revelation of malpractice in NPPs created the “fall down risk.” Thus, we know that relying too much on nuclear power as a basis for a steady electric supply and as a preventive measure for global climate change is a risky course. It also threatens the management of electric companies, as Prof. Kondo pointed out.

Speaking of ensuring a stabilized electric supply system, the current nuclear suspension has not caused

an electric supply crisis. There have not been any blackouts anywhere in TEPCO's 40,000 square-km electricity supply area, despite the fact that all of TEPCO's NPPs were shut down. Indeed, many buildings and streets were lit up more than necessary. Since electric companies have excessive power generating capacity, it is apparent that the electricity supply can be secured while all NPPs are shut down.

Even in the peak load during summer time, it would be possible to shut down all the NPPs if more efforts were put into the reduction of electricity demand. The business risk of electricity companies can be reduced if we stop NPPs and minimize electricity consumption. This would also help stabilize energy supply and combat global warming.

The situation of all 17 TEPCO units suspension has ended on May 7 -- a total of three weeks. On this day, TEPCO was forced to restart the No. 6 of Kashiwazaki-kariwa (ABWR 1356MW). The TEPCO repeatedly emphasized the difference between the ABWR and BWR. However, it also makes it difficult for the TEPCO to resume the operation of BWR. Now that 16 units are still off the line, resuming one unit does not change the whole situation.



Picture: Anti-nukes celebrate the shutdown of 17 nuclear plants in front of the TEPCO building on April 15.

Proposed Plan for Japan's Electric Power Liberalization

Since World War II, Japan's electricity has been supplied under a monopoly system by a small number of large electric power companies.

However, in 1995 the Electric Utilities Industry Law (EUIL) was revised and, for the first time, change came to the system through the establishment of new Independent Power Producers (IPP) and Power Producers and Suppliers (PPS). But the former was strictly limited to wholesale supply to the electric power companies and the latter is restricted to certain geographical areas.

Since then, there has been growing criticism that international competitiveness is being weakened due to the fact that electricity rates in Japan are higher than rates overseas. Consequently the EUIL was revised again in 2000 and a 'Power Producers and Suppliers' system was established. Through this system it has at last become possible for consumers to choose suppliers other than the electric power companies, although this right is restricted to large-scale consumers. This is the beginning of partial liberalization.

Just one year later, in 2001, in order to confirm and reappraise the progress of the system, an inquiry process began to further revise the EUIL.

Then, last year, on 27 December, after long drawn out discussions between the government, whose objective is to stimulate the economy through reduced electricity price, and the electricity companies, who want to preserve the monopolistic system,

the Electric Utilities Subcommittee in the Advisory Committee for Natural Resources and Energy finally settled on the contents of its report. A bill to amend the EUIL had already been introduced in March and it is scheduled to come into operation around June.

Concerning the Contents

It was made clear from the beginning that this report would be based on the principles of the Basic Energy Policy Law (BEPL), sometimes referred to as the "Law to Foist Nuclear Energy Upon Us". As can be seen from the title, 'Framework for a Desirable Electricity Industry System for the Future,' the report is in fact nothing more than a big policy statement. The fine details will be debated for another couple of years, but we have already seen the following developments.

Firstly, although it is only an incremental step, the scope of liberalization is for contracted power of at least 50 kilowatts -- for example, for convenience stores and office buildings. Debate regarding liberalization for general households (full liberalization) is scheduled to begin in 2007. However, this sector uses a larger amount of power than the Ultra High Voltage sector which is the target of liberalization. It represents around 254.5 billion kilowatt hours and 70 million contracts, so it will have a very big impact on the electric power companies. Consequently, it can be expected that there will be some fierce debate

Table: Japan's Electric Liberalization Schedule Categorized by Voltage

	Voltage (V)	Contract (kW)	Share (%)	Industrial	Commercial	Residential
Ultra High Voltage	20,000~	2,000~	26	Access opened Large factories, etc.	Access opened Large department stores, hospital, university, etc.	-
High Voltage	6,000~	500-2,000	14	Open by April 2004 Mid-sized factories	Open by April 2004 Office buildings, supermarket	-
		50-500	23	Open by April 2005 Small-sized factories	Open by April 2005 Small-sized factories and stores	-
Low Voltage/Lighting	100-200	< 50	36	Inquiry process will begin on April 2007 Small-sized factories	Discussion is planned from April 2007 Small and mid-sized buildings and supermarket	Discussion is planned from April 2007 Households

The scope and schedule of Japan's electricity liberalization process discussed at the council meeting

over this in future. The scope and schedule of this electricity liberalization process is shown in the table (page 6).

As part of the new regulatory system, a neutral body to set rules and to monitor the transmission and distribution sectors has been established. It was established because until now the electric power companies set and applied the rules themselves and this had a negative impact on new entrants. Name, membership, etc., haven't been determined yet, but it's assumed that it will be an incorporated body.

Further, rules to activate the distribution of electricity on a national scale have been decided upon. One element of this is that the rules whereby charges were applied each time a supply boundary was crossed will be revised. This supply transfer system was a great burden to new entrants. There will be a single rate for the use of the transmission line, regardless of whether the transaction is inside or outside the supply area.

One more element will be to create a national-scale wholesale electrical power market. Hitherto there was a regional monopoly structure premised upon an overall cost formula. Consequently anticipated demand and investment risk could be calculated with some ease. But from now on, if liberalization progresses, this monopoly system will fall apart. It will therefore be necessary to refine a pricing system based on different methods of judging electrical power development investment and to perfect a method of selling and providing power in situations where there is a mismatch between supply and demand.

But these elements indicate nothing more than that the rules have been established. Until one actually attempts to put it into practice, its effectiveness will not become clear.

The Treatment of Nuclear Energy

In the case of nuclear energy, it is expected that newly installed nuclear power plants will be affected. But there was virtually no such discussion in the subcommittee. The discussions of the liberalization of electrical power took long enough, but the fact that they were brought together comparatively well was, in the end, probably due to the fact that the nuclear energy issue was deferred for future consideration.

However, although it wasn't taken up as a theme for discussion, the following comments were included in the report: "It is necessary to investigate and prepare appropriate rules and measures, both from the perspective of facilitating the promotion of nuclear power stations and backend enterprises, as has always

been the case, and also from the perspective of creating a favorable investment environment. For this purpose, a place should be created for the analysis and assessment of the total cost structure of backend enterprises and of the profitability of nuclear power stations. Then, on the basis of the results obtained, the method of allocating administrative responsibilities should be sorted out and adjustments to the existing system, etc should be made. The aim should be to investigate the economic measures etc and the type of concrete systems and steps that are necessary, including how necessary they are, by the end of 2005."

In Britain the private nuclear energy company British Energy is in danger of becoming insolvent. This is partly due to the fall in wholesale prices caused by the electricity trading system, but it is also thought that another cause is the fact that the company entered into contracts to recycle nuclear waste. This process is actually more expensive than direct disposal of the waste. With previous examples like this, the discussion of how to treat nuclear power within the market is likely to be decided in accordance with the interests of the proponents of nuclear power a few years after electricity trading gets underway.

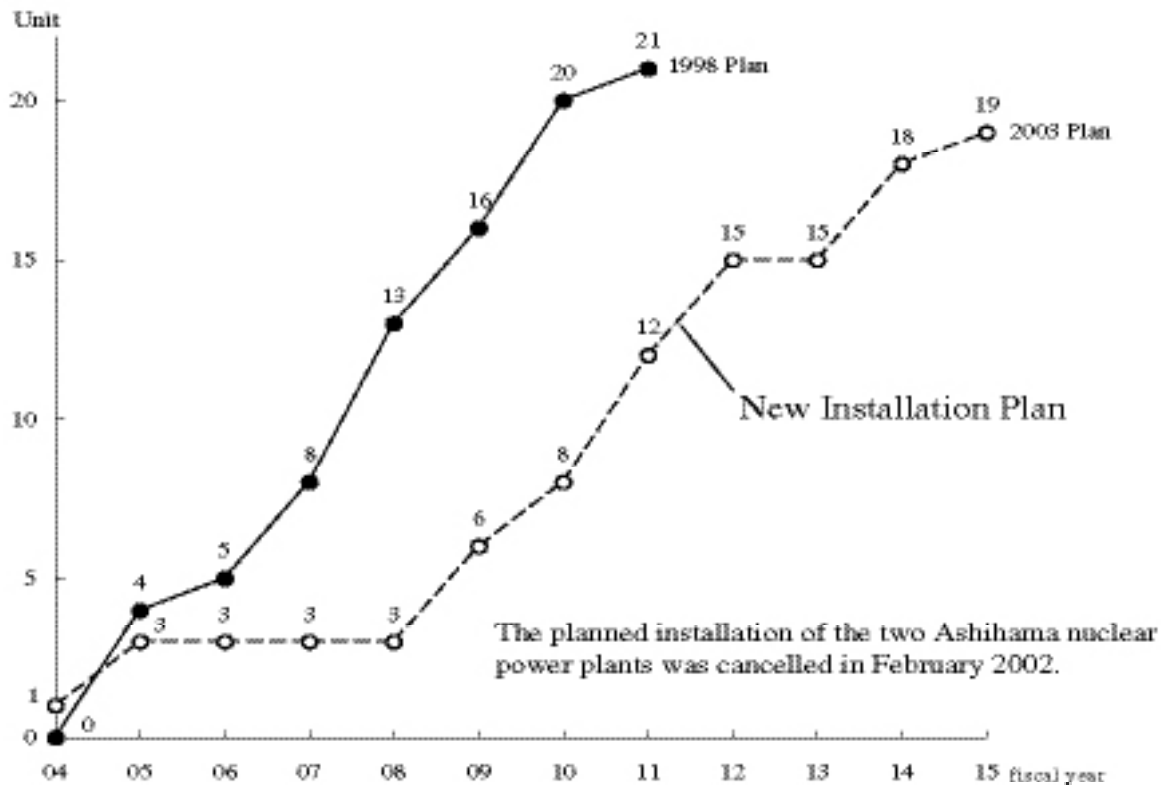
Looked at it from this perspective, not just in regard to electricity liberalization, but also in regard to the incidents of falsification of nuclear data and the subsequent discussion about maintenance standards, although at first glance they all seem to be being discussed as separate issues, one begins to realize that their consequences are being calculated in a very long-term and careful manner.

Final Comments

Just because the direction of liberalisation has been decided, that doesn't mean there's nothing left to worry about. It's too soon to conclude that everything will run smoothly if you leave it to the market. The market will work if those who already wield huge power, the electric power companies, cooperate. Another concern is whether what appears at first glance to be a relaxing of regulations could actually end up leading to a tightening of regulations. It is the Ministry of Economy, Trade and Industry (METI) that is proposing this policy. But it will also be the METI that will regulate electricity liberalization. It follows that a system may be being created in which the proponent of the policy will find it easy to tighten the regulations. As the report now stands, the electricity companies' responsibilities are pointed up, but the state's responsibilities are hardly mentioned at all.

(Tadahiro Katsuta, CNIC)

The Downward Trend of the Nuclear Development Plan In Japan



All electric companies in Japan had completed the Electric Supply Plan for the fiscal year of 2003 by the end of March*. In these plans, each company sets out its plan for starting the operation of new nuclear power plants. Nineteen nuclear power plants are proposed at the moment. Three of these are under construction, and the Basic Power Plant Development Plan, which was published by the Japanese government, includes the construction plans for another eight. However, the property has not been secured for two of these plants. Therefore the procedure for the security inspection is currently suspended while the company applies for permission for establishing these two reactors. Moreover, they have not applied for permission to establish the other four reactors yet.

According to the plan, eight more reactors will start operating by the end of the year 2010. In accordance with the agreement of the Kyoto protocol, Japan is obligated to cut down CO₂ emission to prevent global warming. To meet this condition it is necessary for Japan to start operating twenty more reactors by the end of 2010. So even the existing government plan can only achieve about forty per cent of what is needed. And every time the plan is revised, the plans for three proposed nuclear reactors have been postponed for another year. It is apparent that the plan for the next fiscal year will achieve a smaller reduction in CO₂ emissions than this year.

*Ministry of Economy, Trade and Industry (2003) "Summary of Electric Supply Plan in Fiscal 2003"

Data: Recent Trends in Japanese Nuclear Industry

Figure 1. Change in the electric utilities' expenditures

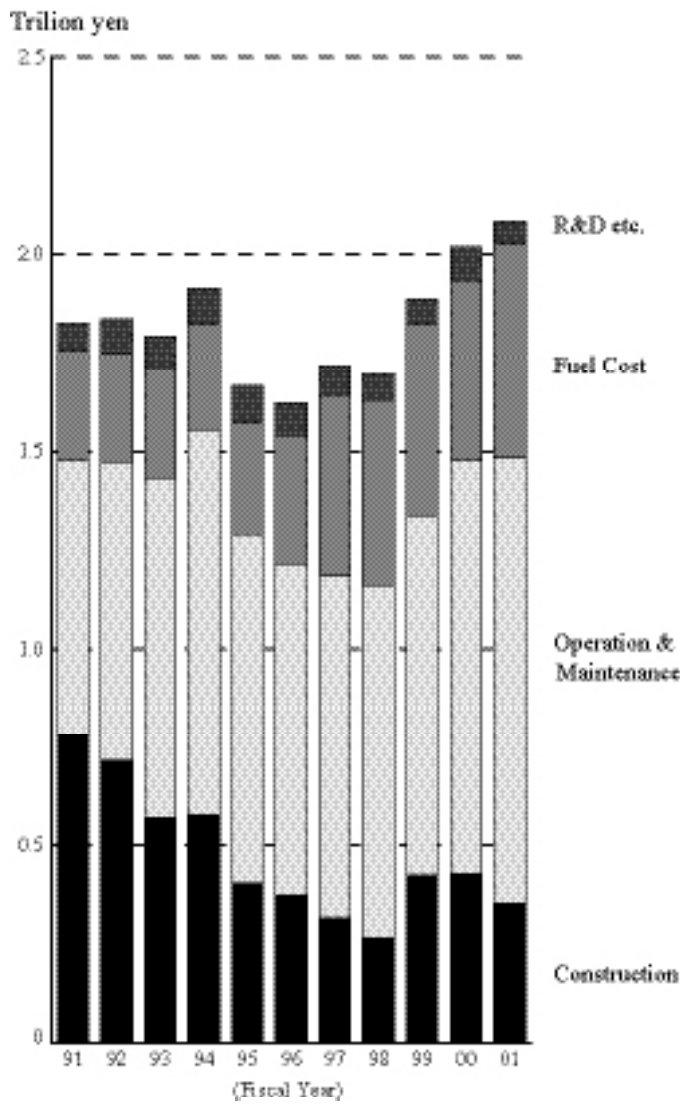
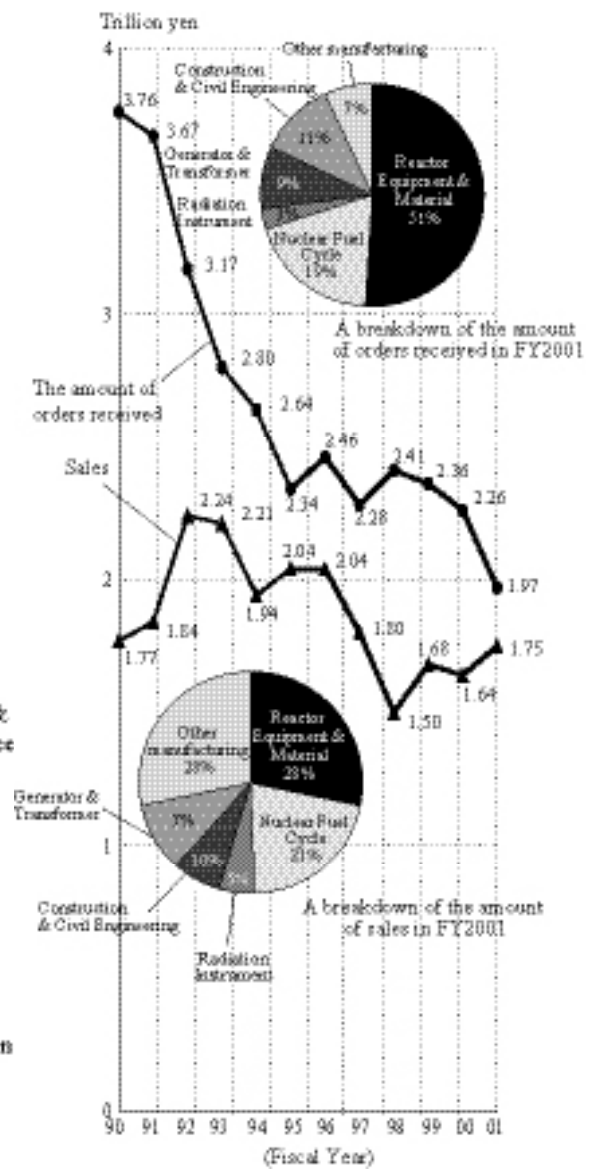


Figure 2. Change in the nuclear industry's sales and orders



Anti-Nuke Who's Who**Kiyoshi Yoshimura (Tsuruga city)****Logical and Stern Critic of Nuclear Energy**

by Teruyuki Matsushita

It was the beginning of the age of nuclear energy in Japan. This 'dream-like' form of energy was first produced at the nuclear power station on the Tsuruga Peninsula. It was said that when the nuclear reactor came, roads would be constructed, new schools, gymnasiums and libraries would be built and electricity would be "too cheap to meter." A high-school student at the time, I was building dreams about the new age.

In 1970, Tsuruga No. 1 and Mihama No. 1 reactors started operating and two years later Mihama No. 2 was started up. During 1974-5 Takahama numbers 1 and 2 commenced operation. With that the concentration of nuclear power stations in Fukui Prefecture began. The Fugen and Monju plans were also laid out and people talked about the brilliant future of nuclear power.

This was the situation in which, on April 16 1976, "the Tsuruga Citizens Group Against Fast Breeder Reactors" (Citizens Group) was formed. Then three months later "Fukui Citizens Council Against Nuclear Power Plants" (Citizens Council) was formed. It was as a central figure in these groups that Kiyoshi Yoshimura attracted national attention.

In the same year, as a result of findings from material published in the book "Nuclear War" by Soichiro Tahara, it was revealed that two fuel rods from Mihama Reactor No.1 had been broken. Despite the fact that there had been a serious accident in the form of the bending and breaking of fuel rods, the incident was covered up for three-and-a-half years. This cover-up was widely reported in the media.

Immediately after the establishment of the Citizens Group and the Citizens Council, the Mihama No. 1 accident was exposed and the significance of the groups' existence was widely discussed. After that the two groups got together to take the lead in arguing with the government and contributing to legal cases. Belatedly, I, too, became a member of the network.

After the nuclear power plants began operating, problems and accidents followed one after the other and the issue of worker exposure to radia-

tion came to the surface. People also began murmuring about sloppy oversight of operations. Worker grievances and other problems were also brought to Yoshimura's attention.



Within a few years of the beginning of the age of nuclear energy, Yoshimura had become a central figure in this highly concentrated region of nuclear power plants. Since then, he has devoted 30 years of this life to the cause of getting rid of nuclear energy. Although he has felt isolated in the region, he has never deviated from his own point of view and has continued his stern critique of nuclear energy. He is truly amazing.

Furthermore, he is very logical in the action that he takes. When he argues with the government or the electricity companies he does so calmly, never losing control. He compiles his materials in advance and sticks to the facts, using them to drive his opponents into a corner. I'm sure his opponents find him very irritating. If he wasn't so scrupulously logical I don't think he could have continued for so long.

The Monju case continued for a very long time and ended in a dramatic victory. It might be said that the successive accidents associated with the nuclear fuel cycle made total victory only a matter of time, but when you consider the special effort that Yoshimura put into this issue, you can imagine what an emotional victory it must have been for him.

He is over 70 years old, but there is still no sign that Yoshimura's critical spirit is waning. I hope that, as a leader in the region, he continues to guide us into the future.

NEWS WATCH

Municipalities Put Tax on Storage of Spent Fuel

Kashiwazaki City Council (Niigata Prefecture) passed a bill for a new bylaw on March 20, stipulating the imposition of a tax on the spent fuel which is now stored on the site of the Tokyo Electric Power Co. Inc's Kashiwazaki-Kariwa Nuclear Plant. This was the first such case in the country, but now Sendai City (Kagoshima Prefecture) is planning to present a similar bill to its City Council in June. It is certain that other municipalities will follow suit.

With regard to the reason for taxation, Kashiwazaki Mayor Saikawa stated that while revenues related to nuclear power plants (fixed property tax and subsidies) have been decreasing year by year, the demands for measures related to nuclear power, including those for emergency measures, have been increasing. His explanation reveals the fact that nuclear power plants initially increase local finance both in revenues and expenditure and that revenues gradually decrease after reactor operation begins.

With the taxation on the spent fuel to cover for the revenue decrease, Kashiwazaki City expects a tax revenue of about 3 billion yen in the coming five years. The tax rate is 480 yen per 1 kg HM of spent fuel.

The Tokyo Electric Power Co., Inc. is basically opposed to this taxation, claiming that it would be a double taxation, for Niigata Prefecture puts tax on the acceptance of nuclear fuel into the site. However, there is a view in the electric power industry that taxation would be acceptable if long-term storage of spent fuel on the site were to be allowed, thus taking advantage of taxation. On March 5, the Federation of Electric Power Companies of Japan, which consists of ten electric power companies, indicated its view that although it has not decided

to accept the taxation, it would accept it if more spent fuel would be allowed to be placed on the site for a longer time.

The Kashiwazaki City side reacted against the long-term storage option. A certain industry journal commented that the taxation was originally meant to get rid of the spent fuel sooner. However, if the city comes to count on the storage of spent fuel for revenue, it is inevitable that the authorities would be inclined to increase their tax revenues by allowing the spent fuel to remain longer.

FNCA Meets in Naha

The Forum for Nuclear Cooperation in Asia (FNCA) held its 4th coordinators' meeting in Naha City, Okinawa, on March 5-7. FNCA was formed by Japan's Atomic Energy Commission in March 1999 in order to promote cooperation with other Asian countries in the area of nuclear power. The Coordinators' meeting is formally organized by FNCA, but it is virtually controlled by the Japanese government. In fact, the bulletin of the Japan Atomic Industrial Forum, Inc. reported that it was "held by the Cabinet Office and the Ministry of Education, Culture, Sports, Science and Technology."

FNCA involves nine countries, i.e., Japan, Australia, China, Indonesia, South Korea, Malaysia, Philippines, Thailand and Vietnam, with the International Atomic Energy Agency (IAEA) as an observer. The coordinators' meeting was attended by coordinators of these countries and other concerned parties. Okinawa Prefectural governor Inamine attended the opening ceremony, stating that making melon flies infertile by irradiation helped get rid of them. During the meeting Japan requested the members to add the construction of new reactors to the Clean Development Mechanism for prevention of global warming. China and South Korea are said to have agreed.

METI Works Out New Preferential Measures for Nuclear Power

The Ministry of Economy, Trade and Industry (METI) is trying to prolong the life of nuclear power by working out new preferential measures. It aims to secure appropriate investment so that electric companies would not retreat from nuclear power to avoid risks in the midst of the situation in which liberalization of electric utility industries is expanding.

A bill for a partial revision of the "Law for the Adjustment of Areas Adjacent to Power Generating Facilities and the Special Budget Law for the Development of Electric Power" was submitted to the Diet. It means to review the system of the so-called special subsidies for power development, the subsidies for power plant siting. These financial schemes were created to promote the establishment of all kinds of power stations, but are said to have been revised to selectively assist the siting of nuclear power, hydro-power and geothermal power plants. In substance the subsidies will be intensively put into nuclear power and nuclear-fuel cycle facilities. New subsidies will be granted for the Plu-thermal project and financial backing will be increased for storage of spent fuel (revision of government ordinance). The target projects for subsidies will be greatly expanded, for example, to the promotion of local industries and welfare services.

Under the current system the power output is calculated by multiplying the plants' generation capacity by a certain ratio of utilization. This will change to make the actual power output a standard for subsidy, or to add something extra by taking the power generation achievement into consideration (Grant regulations = revision of notification). It is a scheme to have local governments cooperate in the policy, which puts priority on safety in operation.

Most of the subsidies will not be disbursed unless the construction of a reactor does get under way; otherwise they are left as surplus

funds. With a large amount of the surplus generated every year, the General Accounting Office has required improvements on the matter. The step which has been taken to improve the situation is the establishment of the Fund for the Adjustment of Areas Adjacent to Power Generating Facilities, which allows surplus funds to be accumulated until the time when the funds can be used.

Another preferential measure is to improve the rule for transmission lines, for example, the rule for securing the capacity of a transmission line. This is a rule to control new thermal power entrants during the periods when power demand falls, such as mornings of New Year days and the "Golden Week" (Japan's seasonal holidays during the first week of May), in order to guarantee the operation of nuclear power plants. It is a relief measure for nuclear power, which cannot be adjusted in its output. Concretely, electric companies can make use of conditions for "the prioritized order for load dispatching," which has already been stipulated in the Electric Utility Law, and the rule is set to compensate existing electric power companies for the financial damages incurred by new entrants.

There is also a development of the rule for securing the capacity of transmission lines. As the capacity of the basic transmission lines which are used for trading power among the utilities is limited, the rule aims to preferentially allow power generated by nuclear plants to be transmitted. The electric power companies which owns many nuclear power plants, will not be able to maintain its profit without selling powers to other electric companies. Therefore, deciding whether or not to secure the capacity of a transmission line is a matter of life or death for them.

Furthermore, additional rescue measures are set to be considered next year. These mean that the government is to shoulder the costs incurred by the back-end measures.

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. 00160-0-185799, HANGENPATU-NEWS. Due to costly processing fees on personal checks, when sending the subscription fee from overseas, please send it by international postal money order. We would also appreciate receiving information and newsletters from groups abroad in exchange for this newsletter.