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6 Citizens' Nuclear Information Center

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TEPCO Debates Nuclear Issue



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NEWS WATCH

Fukushima II Shuts Down/Mitsubishi May Build British N-Plant/Damage Found in SG Tubes/MITI OKs Fukushima II-3/Loop-Type for FBR

On June 10 a public debate was held between Tokyo Electric Power Co. (TEPCO) and a group of anti-nuclear citizens. This was only the second debate of its kind, following that with Chubu Electric last year. It was the first time that TEPCO had agreed to discuss the nuclear issue with citizens. Despite strong demands for such a debate, TEPCO has tended to keep the anti-nuclear movement at arm's length and consistently refused to sit down at the same table.

Since the Chernobyl accident, the general public have become more concerned about the dangers of nuclear power, and TEPCO can no longer ignore the opposition, particularly since the No. 3 reactor of Fukushima II nuclear power station has developed serious problems and criticism of the plant is mounting, not only in the anti-nuclear movement but among the local people, who had previously accepted the power station without much thought.

Half the 800 seats in the hall were allocated to the TEPCO contingent and the other half to the anti-nuclear group. Since it was the first time such a debate had been held in the Tokyo area, all the TV stations and newspapers were there to cover it.

The main theme of the debate was the Fukushima II issue, and the secondary theme future energy policy. TEPCO only agreed to take part in the debate on the condition that it was limited to the Fukushima accident and the energy issue. They refused to debate other issues, such as nuclear waste, worker exposure, safety in general, or the moral issue.

Four TEPCO representatives sat on the left of the stage and four anti-nuclear representatives on the right. The first two and a half hours were spent on the accident. The anti-nuclear side accused TEPCO of failing to cope with the accident properly when it first occurred and of trying to resume operation without retrieving all the metal pieces in the core. They also expressed the fear that accidents would occur again in the same reactor once it was restarted. They asserted repeatedly that TEPCO was not responsible enough to run nuclear power plants, and were greeted with applause from half the audience.

The TEPCO side insisted that the reactor was safe enough to resume operation. However, when it came to a detailed discussion of the metal pieces and broken equipment

they made some embarrassing remarks, which called forth jeers and laughter from the anti-nuclear side.

One of the panelists on the anti-nuclear side was a resident of Fukushima and strongly criticized TEPCO representatives. He argued that TEPCO had simply broken the promise the TEPCO President made when he visited nearby towns right after the accident. The President told nearby residents that TEPCO wouldn't resume operation until all the metal pieces in the reactor had been taken out and the broken parts replaced with new ones. TEPCO representatives, however, said they want to restart the reactor since most of the metal pieces have been taken out and the broken parts are now fixed.

Regarding future energy policy, the anti-nuclear side argued that saving energy was the most important thing and nuclear power could never be an alternative to oil as an energy source, since nuclear power also depends on oil in many ways. The TEPCO representatives agreed with the idea of saving energy, but they wanted to save energy AND have nuclear power.

The anti-nuclear side's argument was well prepared with slides, video tape, and overhead projector. On June 1st, nine days before the debate, the anti-nuclear groups were allowed for the first time to go inside the troubled reactor and had a chance to take pictures of the broken metal pieces. So it was the first time that most of the audience had actually seen the crooked metal parts. These parts were proof of the seriousness of the damage.

The argument got a bit too technical on occasions, but most of the time the anti-nuclear side was a lot more persuasive than TEPCO. It was a pity, however, that the debate ended without any promises or assurances from TEPCO regarding the troubled Fukushima reactor.

At any rate this debate should not be the last and it is hoped that more debates on different issues will be held in the near future. □

Anti-Nuke Shareholders Attend AGMs

The annual shareholders' meetings of Japan's nine major power companies were held on June 28. Japan is divided into nine districts and each district is usually covered by only one power company. The power companies have a high profile in their individual district. Tokyo Electric Power Co.(TEPCO) is one of the largest enterprises in Japan and Kansai Electric is the largest in the Kansai district, where Osaka, Kyoto, and Kobe are located.

Japanese shareholders' meetings are usually smooth and short affairs. But for several years anti-nuclear activists have tried to stage protests at the annual shareholders' meetings, where shareholders have a chance to meet company officials and question them directly on nuclear power.

In every district this year, anti-nuclear activists had purchased



Activists Stage Protest at Kansai Electric Co. while AGM is Taking Place Inside

enough shares to qualify them to attend meetings. The TEPCO meeting was attended by as many as 250 anti-nuclear shareholders, while about 70 attended the Kansai electric meeting and 10 to 25 turned out for the other meetings. Last year Mr. Koji Hirai, an anti-nuclear scientist, presented as many as 125 questions and proposals and TEPCO officials had to spend most of the 2 hour, 13 minute meeting answering them. It turned out to be an unusually long meeting and was well publicized in the media. This year, in every district, anti-nuclear shareholders presented well over 1,000 questions and proposals, hoping to make the meetings last all day.

Unfortunately company officials this year only gave the briefest answers to them or refused to answer them altogether, saying the proposals were irrelevant. Sokai-ya, professional disrupters of shareholders meetings who attempt to extort money from companies by threatening to cause trouble at the AGM, turned out to be defenders of the companies this time. The Sokai-ya, some of whom are like gangsters, tried to silence the anti-nuclear shareholders by hitting them or swearing whenever they tried to speak.

The whole scene was chaotic with the Sokai-ya standing up and screaming while the anti-nuclear shareholders tried to make their points.

Outside the company building activists continued to support those inside with street theater, dancing, singing, and appeals to passers-by. All the meetings ended in two hours or so and the anti-nuclear shareholders felt quite unsatisfied with the way the company officials handled them. □

Opposition Boycotts Public Hearing on Construction of Kashiwazaki No.6 and 7

The World's Largest Nuclear Power Complex, Kashiwazaki-Kariwa, is located on the west coast of Japan in the central part of Niigata prefecture. Seventy thousand people live within a 10km range of the site, and 440,000 within a 30km radius. In September 1969, Tokyo Electric Power Co.(TEPCO) announced a plan to build the world's largest nuclear power station in the area. However, TEPCO, the largest private power company in the world and the second largest enterprise in Japan, met opposition from the local people and this delayed construction for ten years. The company finally managed to start operating the No.1 reactor in 1985 and No.5 started up this year. Presently the No.2 reactor is being tested while Nos. 3 and 4 are under construction. They are all BWR type reactors (1,100MW), but TEPCO is still not satisfied. The company plans to start building Nos. 6 and 7 (1,356MW each) in 1991. They will be of the ABWR (Advanced Boiling Water Reactor) type, the first of their kind to be built. If this plan goes ahead, the Kashiwazaki Power Plant will become the world's largest nuclear power complex, with seven reactors and a total capability of 8,212MW. A feeling of anxiety is now rising even among those who originally favored the nuclear development, but a special subsidy paid to the community in return for the development has kept their mouths shut. Citizens opposed to the plant are trying to get people informed about the seriousness of the accidents at TMI and Chernobyl. They are also trying to make people realize that the accident which happened to the recirculation pump of the No.3 reactor at Fukushima II Nuclear Power Plant (the No.3 reactor is the same type as the those at Kashiwazaki) came very close to a

melt-down.

Economy Over-rides Safety

The Nuclear Safety Commission has swallowed the power company's report without question. It even lacks the personnel to analyze such reports. The residents, naturally, do not trust the Commission. On June 3rd, the Safety Commission held its second hearing on the construction of No.6 and 7 reactors. The content of all comments and questions, however, had to be examined by the Commission beforehand. The time allowed to each speaker was also limited. Those who wanted to attend and listen to the procedure had to apply for permission. We could not see any possibility, under these conditions, of residents' views being fairly presented.

The opposition group, therefore, decided to boycott this 'fake hearing.' Instead, they organized, on May 20, their own Public Debate on the Construction of Kashiwazaki No.6 and 7 Reactors. Mr. Ohigashi, a member of the Citizens' Nuclear Information Center, spoke about the dangerous nature of ABWR Reactors and severely criticized the Safety Commission's findings on the construction plan. Mr. Matsuoka, a member of the People's Research Institute of Energy & Environment, spoke about the radiation contamination in USSR caused by the Chernobyl accident. Mr. Tsuchida, a member of the Institute of Physical and Chemical Research, reported on the Fukushima accident. A local activist then spoke of the contradictions involved in his community being dependent on the nuclear power station. According to Mr. Ohigashi, construction of Kashiwazaki Reactors No.6 and 7 must be stopped because:

- 1) It uses an internal pump system,

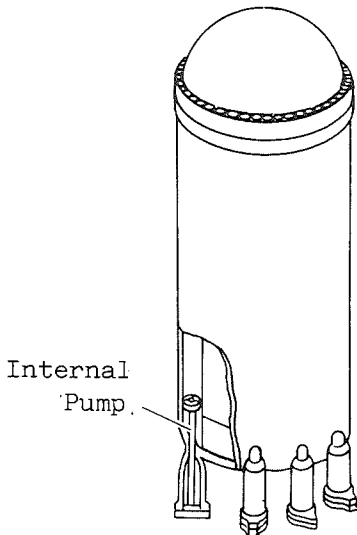
poorly tested for use in BWRs; 2) Reinforced concrete, rather than steel, is to be used to build the containment; 3) The power level may be regulated at any time, increasing the probability of a "nuclear runaway"; 4) The free space of the containment is smaller than that used in 1,100MW type reactors, and workers will have to operate in a smaller room. The stack emitting radio-active gas is only 73m tall, half the ordinary size, so local residents will be exposed to a higher amount of radiation; 5) Both TEPCO and the Safety Commission ignore the possibility of a severe accident. The capacity of the pump attached to the ECCS is considerably lower than its equivalent in 1,100MW reactors. Vent-bulbs, commonly attached to the containment to deal with pressure, are non-existent; 6) As regards the problem of daily exposure to radiation and evacuation plans in time of emergency, only the most basic plan has been drafted, with no consideration of the scale of the facility.

ABWR-type reactors were developed jointly by GE, Hitachi and

Toshiba. The above problems, however, have caused the US NRC to refrain from authorizing even the model of such reactors. Kashiwazaki-Kariwa is going to become a testing ground for this new type of reactor.

3,000 People Protest Fake Hearing

On June 3rd, 3,000 people gathered to protest the 'hearing' organized by the Safety Commission. Local people, labor unionists and other people met early in the morning in Niigata City, 80km from Kashiwazaki, where the 'hearing' was held. The Safety Commission deliberately held the hearing in Niigata, to avoid local people's resistance. Niigata City is the prefectural capital, with a population of half a million. The 'hearing' supposed to be open to the public, was heavily guarded by police. The protest rally and demonstration lasted for three hours until 10 a.m., when the labor unionists left. About 200 grass-roots activists remained, and continued marching for another two hours. The marchers were scorched by the hot sun but they kept their spirits up and distributed leaflets to people in the street, warning them about the ABWR and telling them about the undemocratic nature of the 'hearing'. About ten activists had started a protest fast three days before, and their action drew the attention of the press. Most of these grass-roots activists had spent the previous night participating in an "All Night Protest Gathering" where they attended talks and enjoyed a rock-concert. In the afternoon, the people ended their long day and night protest, their hearts filled with a new determination to halt plans to turn Kashiwazaki into a test ground for the ABWR and to stop all the nuclear power plants in their city. □



ABWR

40 More N-Plants Needed?

—Long Term Energy Outlook—

The Advisory Committee for Energy, which advises the Ministry of International Trade & Industry, has announced its new Long-Term Energy Outlook. It was reported in the press that the Committee declares it necessary to build 40 new nuclear power plants and this gave rise to widespread public concern.

However, a closer reading of the "outlook" reveals that the plan is just a means of testing public opinion, and even the Committee members do not really believe it will be carried out. The real object of the report seems to be to assure people that "since we have nuclear plants there is no need to save energy," thereby maintaining a policy of increasing energy demand. At the same time, if people say NO to nuclear plants, public opinion can be used as an excuse to justify the increased use of fossil fuels.

This is the most significant issue raised by the report: the prolonging of the use of fossil fuels, especially petroleum oil and coal. This runs totally counter to international energy trends.

The "Long-Term Energy Outlook" has consistently over-estimated 20-year demand, then subsequently revised 10-year demand downwards as it became clear that the 20 year figure was hopelessly unrealistic in view of present demand.

This year, however, the committee has revised its 10 year estimate of demand to an even higher level than the previous estimate (1987). This is because demand has been increasing lately due to strong economic growth. However, their so-called "energy-saving policy" has proved to be mere lip service to the idea, and there is no evidence of any real intention on their side to decrease energy consumption.

Total energy demand in FY 1988, was 482 Mil.kl (converted to oil), estimated demand for FY 2000 is 597 Mil.kl, and for FY 2010, 666 Mil.kl.

Nuclear power would account for 13.2% of the total supply in 2000, and 16.7% in 2010. These figures have been lowered since the last "Outlook," taking actual performance into consideration, and estimates of supply from petroleum, coal, and LNG are correspondingly higher.

Since it is clearly impossible to increase the generating capacity of nuclear plants from the 28.9GW of 1988 to 50.5GW in 2000, and 72.5GW in 2010, petroleum and coal will have to be substituted.

Of special concern is the plan to increase the coal generation capacity from 11.12GW of 1988 to 29.6GW in 2000, and 40.0GW in 2010.

What other country in the world is planning to increase coal generation, which discharges the most CO₂ into the atmosphere? This reflects the shameless attitude of the Japanese power industry, which is intent on building as many coal generation plants as it can before international regulations on CO₂ discharge take effect.

We are against nuclear power, but not just against nuclear power. We are against a long-term energy policy which promotes energy waste and increased consumption of fossil fuels. We wish to create a society which does not waste energy and tries to conserve natural resources as best it can. □

Significant Incidents at Nuclear Plants

(August–December 1989)

Date	Plant	Short Description of Event
Aug. 16	Ohi 1	Increased radioactivity level of gases from primary coolant system due to fuel rod damage during degassing for inspection.
Aug. 23	Onagawa 1	5 successive error signals in turbine steam regulator valve control circuit.
Sept. 6	Shimane 1	Reactor manually stopped due to alarm signal from recirculation pump, later found to be caused by dust in vibration detector.
Sept. 11	Tokai 1	Radioactivity level of coolant CO ₂ increased due to pinhole in fuel cladding.
Sept. 18	Hamaoka 3	Malfunction of a main steam isolation valve during function test; reactor manually stopped.
Sept. 18	Fukushima I-1	3 cracks found at welds of steam dryer drain channels.
Oct. 2	Hamaoka 2	Abnormal vibration of high pressure injection pump due to a clogged adhesive tape strip (found during inspection).
Oct. 4	Tokai Repro. Plant	Plant shutdown due to uncontrolled release of iodine-129.
Oct. 5	Takahama 1	Damage to steam generator tubes found.
Oct. 20	Genkai 2	Automatic stoppage of emergency diesel generator due to coil burning during load test.
Oct. 26	Mihama 3	Damage to steam generator tubes found.
Nov. 6	Fugen	Reactor scrammed due to malfunction of an electric relay.
Nov. 7	Mihama 3	Malfunction of a containment isolation valve during function test.
Nov. 8	Fukushima I-1	Numerous cracks found on inner surface of recirculation pump casing.
Nov. 8	Fukushima II-1	Numerous cracks found on inner surface of recirculation pump casing.
Nov. 9	Tokai 1	Radioactivity level of coolant CO ₂ increased due to pinhole in fuel clad.
Nov. 14	Ohi 1	Damage to steam generator tubes found.
Nov. 17	Tokai 1	Leakage of secondary steam from turbine piping.
Nov. 29	Takahama 3	Damage to steam generator tubes found.
Dec. 9	Ikata 2	Corrosion and thinning of condenser tubes found during inspection.
Dec. 15	Takahama 3	Damage to four bolts of primary coolant pump outlet vane.
Dec. 26	Shimane 1	Five cracks found on inner surface of recirculation pump casing.
Dec. 27	Fukushima II-1	Reactor manually stopped due to oil leakage from the turbine bypass valve hydraulic system.
Dec. 27	Tsuruga 1	Automatic stoppage of emergency diesel generator, during function test.

Availability Down Again

The average capacity factor, or availability factor, of all the 36 reactors in Japan fell to 69.6% in FY1989, an even lower figure than the previous year's. This is apparently due to an increase in the number of accidents causing unexpected plant shutdowns, and to extended inspection periods.

High availability factors in the past were only achieved by putting excessive strain on the plant. For instance, power companies did not shut plants down even when the radioactivity content of the cooling water was excessively high and caused pinholes in the fuel rods, neither did they stop operation while repairing the damage.

Plants were kept running despite the dangers because nuclear power is not competitive with

cheaper fossil fuel power generation.

What is really important is that, in spite of such reckless operation, the available factor is actually falling. In some cases, serious accidents have been caused by operators' inability to spot trouble that should have been found during inspections, or their reluctance to stop operation for economic reasons. In addition, reactors are aging faster than anticipated. We are now finding deterioration in various parts, even in reactors which have been in operation for only 10 years. Inspection periods have become longer as a result.

This is especially obvious in the larger types of reactors, as can be seen in Figure 2.

Fig. 1 Change of Capacity Factor

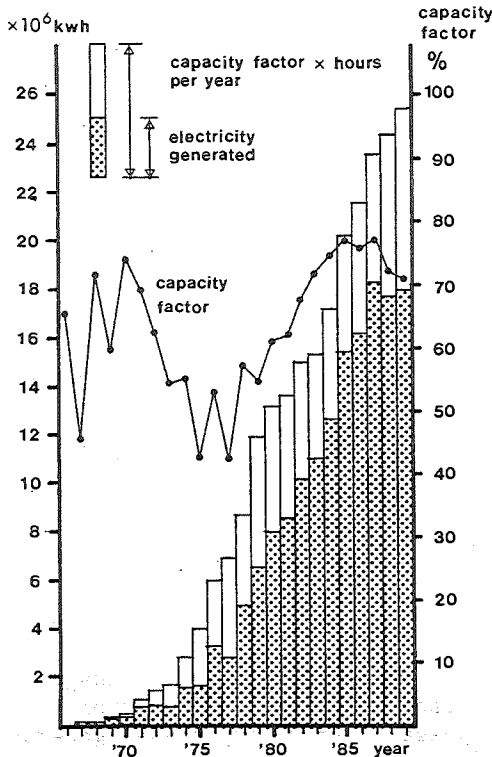
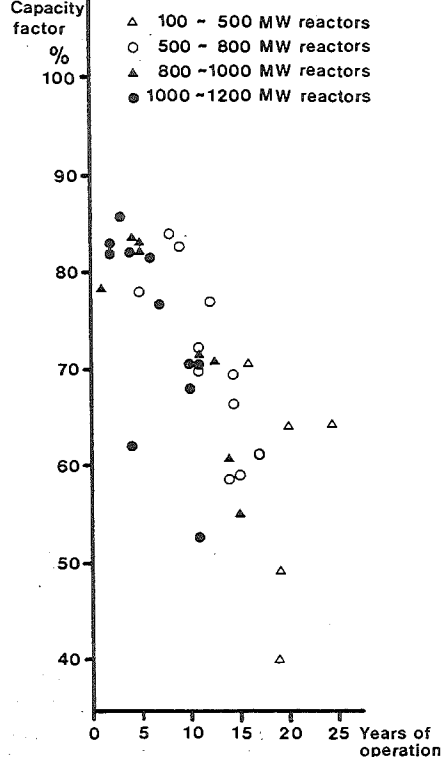


Fig. 2 Capacity Factor vs. Years of Operation





Fukushima II Shuts Down

All four reactors (1,100MW each, BWR) of Fukushima II Nuclear Power Plant, owned by Tokyo Electric Power Co., were shut down completely for three days in June. The No. 3 reactor had been out of action since an accident in January last year (see article, previous issue) and the No.2 reactor was closed down for a regular inspection. Then on June 11, a faulty mechanical seal was discovered in one of the recirculation pumps of the No. 1 reactor, and the following day, the same kind of trouble was found in the No. 4 reactor. TEPCO had no choice but to stop both reactors manually on June 13. After the replacement of the seal, the plant was started up again on June 16, which meant all four reactors had been shut down for three days.

To make matters worse, right after the recommencement of operation on June 16, the No. 4 reactor developed the same problem again and it was shut down manually. It was not until June 21 that it was started again.

Mitsubishi May Build British N-Plant

An article in the leading newspaper "Nihon Keizai Shimbun" dated June 27 reports that Mitsubishi Heavy Industries (MHI) has received inquiries from British Nuclear Fuels Limited (BNFL) regarding construction of a PWR with an output of 1,200MW. The plant is to be located in Sellafield and will have either one 1,200MW reactor or

two 600MW reactors. BNFL has also approached Westinghouse Electric Corp. (WH) of America, KWU of FRG and Framatome of France. But the article states that if the combination of two 600MW reactors is decided on, MHI will be in a strong position as it has experience of building power plants of that size.

On July 1 Nikkei also reported that China has requested technical assistance from Mitsubishi to build Quinshan II (600MW). Mitsubishi has been pushing hard for this project and is likely to seek the partnership of WH of America.

Damage Found in 598 SG Tubes in Takahama 2

Kansai Electric Power Co. on June 29 announced that 598 of the steam generator (SG) tubes of its Takahama 2 reactor (826MW; PWR) were found to be damaged during the recent periodic inspection. 103 of the damaged tubes will be plugged so that they cannot be used, but the remaining 495 will be repaired and used again. 1,643 of the total 10,164 tubes in Takahama 2 are already plugged and out of use. With the additional 103 tubes, 17.2% of the total number of tubes will now be unusable. Kansai Electric apparently intends to re-use a further 166 damaged tubes after repairing them; these, together with the 495 mentioned above, will increase the total number of repaired tubes in the reactor from 1,967 to 2,628.

The steam generator tubes are known as the Achilles heel of the PWR, as they have suffered endless damage in various reactors. Since more damage will inevitably occur in the future, Kansai Electric has

requested the government to raise the "maximum permissible fraction of plugging."

MITI Okays Start Up of Fukushima II-3

The National Resources and Energy Agency of MITI has compiled a report on Tokyo Electric Power Co.'s Fukushima Reactor II-3, whose recirculation pump was damaged in January 1989, and submitted it to the Nuclear Safety Commission. In the report the agency states that there is no safety problem in resuming operation of the reactor. NSC has stated that it will not finish checking the report until the fall but TEPCO, considering that it has got a virtual go-ahead, wants to start preparing for fuel delivery and loading.

Local residents are opposed to the resumption of operation until the metal fragments and powder resulting from the damage have been completely recovered. TEPCO states it will gain local people's "understanding" through the government-sponsored explanatory meetings and deliberations in the town council. This will be a crucial period for anti-nuclear residents, who are demanding that the reactor be demolished.

Loop-type Chosen for FBR Demonstration Reactor

The Federation of Electric Power Companies, which has long been discussing what type of reactor to use as the FBR Demonstration reactor, was reported at the end of May to have selected the loop type. However, FEPC chairman Nasu, who is the president of Tokyo Electric Power Co., said that they would conduct a preliminary conceptual design study on the loop type reactor for the time being, and stressed that they had not yet come to a final decision.

The power industry has already lost enthusiasm for the development of the FBR, and there are indications that they are using the selection of reactor type as an excuse for delaying the development plan. It is very difficult in Japan to cancel a development plan once it has been decided. The only option, therefore, is to postpone it. The recent decision to employ the loop type seems to be another means of postponing the plan, as they have said they will conduct studies with it and make a decision based on the outcome. Since the study will probably take a year to three years, it is said that construction of the demonstration reactor will now be delayed for two years.

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