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Will Japan Repeat the Fukushima Disaster? Lawsuit* Verdict This Week May Provide Answer

*Lawsuit seeking an injunction¹ to shut down the only two nuclear power plants operating in Japan today, Kansai Electric's Ohi Units 3 and 4

Media Briefing Paper

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Contact: Aileen Mioko Smith +81-90-3620-9251 (co-lead plaintiff)

Verdict to be Handed Down Early April

The judgment in the legal case against the only two nuclear power plants operating currently in Japan, Ohi Nuclear Power Station Units 3 and 4 owned and operated by Kansai Electric Power Co., Inc. (KEPCO), is expected this week (4 April ~ 5 April.)² It will be the first court ruling on nuclear power operation since the March 2011 Fukushima Daiichi nuclear power plant accident and could mark an important crossroads for nuclear power in Japan.

There are three active earthquake faults in close proximity to the Ohi nuclear power plant site and numerous shattered zones (earthquake faults) directly under the site. One of the shattered zones, the F-6 fault, is suspected of being active and is currently under investigation.

This lawsuit seeking a provisional disposition to shut Ohi Units 3 and 4 down was filed in Osaka District Court on 12 March 2012 by 262 residents³ of Fukui, Gifu and six other prefectures in the Kansai region. If the plaintiffs win, or, if the verdict indicates that the two reactors do not meet the government standard for reactor shutdown time in the event of an earthquake, it could have wide repercussions for restarts of reactors in Japan.

Background

Earthquake-plagued Japan built 54 nuclear power plants in spite of citizen opposition and warnings by scientists. The Chuetsu Oki Earthquake which hit Tokyo Electric's Kashiwazaki-Kariwa Plant in Niigata in July 2007 may have been the last warning, but it was not heeded.⁴ Then on 11 March 2011, the Tohoku Region Pacific Coast Earthquake⁵ occurred, resulting in the Fukushima Daiichi nuclear power plant accident.

The Fukushima disaster re-defined nuclear power safety in Japan. The country's nuclear power safety regulations had to be revamped and new regulations put in place. Reactors

¹ Provisional disposition/preliminary injunction

² Osaka District Court justice Kenichi Ono, the judge presiding over the case, stated on 29 January at the hearing closing the case that the verdict would be handed down "the end of March or beginning of April."

³ Aileen Mioko Smith, executive director of Green Action and Hideyuki Koyama, director of Osaka-based Mihama-no-Kai are lead plaintiffs in the case.

⁴ For further details see foreword in: http://ifg.org/pdf/Nuclear_Roulette_book.pdf

⁵ *Tōhoku-chihō Taiheiyō Oki Jishin, also, known as the Great East Japan Earthquake.*

went offline for periodic maintenance and, without new safety standards in place, were not restarted. On 5 May 2012, the last operating plant was shut down and Japan had zero nuclear power plants in operation.

On 16 June 2012, the Noda Democratic Party government made an exception and approved restart of Kansai Electric's Ohi Units 3 and 4 in Fukui Prefecture, stating that there would be a danger of electricity shortage (planned blackout) during the summer of 2012 in the Kansai region if the reactors were not put back on line. Prime Minister Noda stated that the restart was necessary to "protect the livelihood of the nation's citizens, protect the economy."

The government approved restart of the two reactors by having them pass stress tests (with significant exemptions) and by having four ministers⁶ of the government approve the restart. Prime Minister Noda stated, "I am doing this on my own responsibility." Ohi Units 3 and 4 resumed commercial operation on 3 and 16 August 2012, respectively, without new post-Fukushima safety regulations in place.

Earlier, on 1 June 2012, when restart of Ohi Units 3 and 4 was being deliberated, Green Action and Mihama-no-Kai issued a paper stating that one of the shattered zones (earthquake faults) under the site, the F-6 shattered zone, may be an active fault and should be examined.⁷ Seismic safety guidance issued before the Fukushima accident on 20 December 2010 appended to revised seismic guidelines issued in 2006 do not allow a reactor site to operate if existence of an active fault is suspected under an important facility at the site.⁸ (The emergency coolant pipe for Units 3 and 4 crosses over F-6, the suspected active fault.) Later the same day (1 June), Mitsuhsa Watanabe of Toyo University in Tokyo, an expert on tectonic geomorphology issued a statement⁹ corroborating the two citizen organizations' paper.

Citizens and NGOs including Green Action and Mihama-no-Kai petitioned the government for an investigation under the Ohi site to be undertaken, but the Noda government went ahead with restart approval. National protest continued. In the meantime, on 12 July, 108 members of the National Diet of Japan petitioned Prime Minister Yoshihiko Noda and Ministry of Economy, Trade and Industry minister Yukio Edano to initiate an investigation¹⁰. On 19 July, the Nuclear and Industrial Safety Agency (NISA) instructed KEPCO to reinvestigate the site. Subsequently on 17 October, the newly formed Nuclear Regulatory Authority (NRA)¹¹ announced the members of the NRA investigation committee, and the first site investigation followed on 2 November. The committee is headed by Dr. Kunihiro Shimazaki, Deputy Chairman¹² of the NRA and includes Dr. Mitsuhsa Watanabe. The investigation continues with KEPCO instructed to dig yet another trench to further investigate the F-6 fault..

⁶ Restart of Ohi Units 3 and 4 was formally approved on 16 June 2012 by the following four ministers: Prime Minister Yoshihiko Noda, Chief Cabinet Secretary Osamu Fujimura, Minister of Economy, Trade and Industry, Yukio Edano, and Nuclear Disaster Minister Goshi Hosono.

⁷ <http://www.greenaction-japan.org/modules/wordpress/index.php?p=583> (Japanese)

⁸ Guidance (issued 20 December 2010) for the seismic design review guidelines which were revised in 2006.

Excerpt: http://www.greenaction-japan.org/internal/121205_tebiki.pdf (Japanese)

Complete document (Japanese): http://www.nsr.go.jp/archive/nsc/shinsashishin/pdf/1/101220_1.pdf

⁹ <http://www.greenaction-japan.org/modules/wordpress/index.php?p=584> (Japanese original)

http://greenaction-japan.org/internal/120601_Mitsuhsa_WATANABE_Eng.pdf (English translation)

¹⁰ 12 July 2012. https://dl.dropbox.com/u/23151586/0712_giin_ohi_hasaitai.pdf (Japanese)

¹¹ NISA was dissolved and the NRA established on 19 September 2012.

¹² Position also translated as "Acting Chairman, NRA"

It is worthy to note that although there is a difference of opinion as to whether or not the movement under the Ohi site might have been caused by a landslide (rather than an earthquake), none of the experts have concluded that F-6 is an inactive fault. A fault being active on site is significant because it is not just about earthquake oscillation, but the ground under the facility shifting and rupturing, resulting in breakage of the facility.

The current court case centers around the licensing permit for Ohi Units 3 and 4 which requires that the control rods be able to be inserted into the reactor fuel assembly within 2.2 seconds. There are three active faults very close to the Ohi power plant: Kumagawa, FoA and FoB. The current seismic design of the plant is based on an earthquake forecast assessment of 700 gal basic earthquake ground motion which would occur under the Ohi plant site if the two active faults FoA and FoB interact. The assessment time is 2.16 seconds, allowing only a 2% margin before the 2.2-second limit.

On 27 January 2012, as a result of the 11 March 2011 Tohoku Region Pacific Coast Earthquake¹³, the government instructed KEPCO to look into the need for assessing the seismic motion if interconnection occurred between the three faults (Kumagawa, FoA and FoB). KEPCO submitted a seismic analysis on 29 February which it called a “just in case” analysis because, according to KEPCO, the interaction could not occur. KEPCO’s analysis stated that the maximum seismic motion obtained when 9 cases of a three-fault interaction were analyzed at 0.02 seconds frequency was 760 gals.

On 13 March 2012, NISA reported to the Nuclear Safety Commission’s committee deliberating the stress test for nuclear power plants that it had heard from KEPCO that, as a result of using a different analytical method, the control rod insertion time when the two faults FoB and FoA interconnect (causing 700 gal seismic motion) is not 2.16 seconds but rather, 1.88 seconds, even though this analysis had not been submitted formally to the government. NISA also stated, when reporting on KEPCO’s Ohi stress test results that control rods at Ohi could be inserted “within about 2.2 seconds” even at 1560 gals.

After the 11 March earthquake, the Kan Democratic government had issued a requirement that nuclear power plants pass stress tests before being able to restart. It is worthy to note that when KEPCO submitted its stress test report to the government in October 2011, it had excluded control rod insertion time in the category of items to undertake stress tests.

The Noda government allowed Ohi Units 3 and 4 to restart without properly addressing the issue of control rod insertion time if the three active earthquake faults close to the Ohi plant site interact.

Ohi Units 3 and 4 — Current Status on Eve of Lawsuit Verdict

- On 19 March 2013, the Nuclear Regulatory Authority announced Ohi Units 3 and 4 would be exempt during this operating period from meeting the requirements to apply for and pass the new safety regulations that will come into effect in July 2013. The reactors would be allowed to continue operation until they shut down for their periodic maintenance in September, if they pass certain NRA checks.
- Ohi Units 3 and 4 continue to operate in violation of seismic safety rules which were issued 20 December 2010 before the Fukushima accident.

¹³ Previously, a “5 kilometer rule” had been in place wherein the interconnection of fault lines that were separated by 5 kilometers or more did not have to be considered.

The Key Legal Arguments of Plaintiffs and Defendant

Plaintiffs argue that Ohi Units 3 and 4 do not meet the government standard for control rod insertion time for shutting the reactors down in the event of an earthquake. Since they do not meet this requirement to assure safe shutdown of the reactors, government regulation requires that the reactors not be allowed to operate. Plaintiffs state, operating Ohi Units 3 and 4 in violation of the safety standard is a violation of the human rights of the plaintiffs because it could lead to a disastrous accident which could result in radiation damage to the plaintiffs.

In the court case, KEPCO is insisting there is no duty to comply with the 2.2 seconds in the first place because this value is not a “stipulation” but only an “analysis condition.”

Plaintiffs argue that according to the licensing permit, 2.2 seconds is stipulated as a specification of the control rod drive mechanism which is required to function when a reactor trip signal occurs. The licensing permit was granted using 2.2 seconds as a basis for calculating the overall safety of the plant.

Plaintiffs also point out that the government’s submission in the administrative lawsuit which plaintiffs have filed against the government¹⁴ clearly states that it contravenes government Technical Standards if control rod insertion time exceeds 2.2 seconds.¹⁵ (The government is also on record on 27 June 2011 stating that the licensing permit issued to KEPCO for Ohi Units 3 and 4 was given on the basis the plant met the 2.2 second standard.¹⁶)

During the lawsuit, KEPCO not only argued that as a result of using a different analytical method, the control rod insertion time when FoB and FoA interconnect (causing 700 gal seismic motion) is not 2.16 seconds but 1.88 seconds, it went on to state that its analysis showed that the control rod insertion time for the *three* faults interlocking (FoB and FoA and Kumagawa) would be 1.83 seconds, making insertion time *even shorter* than when two faults interconnect.

The judge noted in court that these KEPCO analyses have not been officially submitted to the government.

The 2.2-second figure cannot be modified unless it is submitted to the government, the government examines it, and approves the modification.

Plaintiffs have submitted to the court the evaluation which had been submitted on 13 March 2012 by the Nuclear and Industrial Safety Agency (NISA) to the Nuclear Safety Commission (NSC) which states that control rod insertion time increases for the Ohi site in proportion to increased seismic motion.

KEPCO argues that there would be no harm to plaintiffs even if insertion time were to exceed 2.2 seconds, hence the plaintiffs have no standing. KEPCO asserts that up to 11 seconds will be safe. KEPCO states the 11-second figure is an “acceptance criterion” figure and 2.2 seconds corresponds to a “conservatively evaluated value”. This argument eliminates the safety margin. Moreover, the “accident” used for this analysis was damage to the steam

¹⁴ Files 12 June 2012 in Osaka District Court by 134 plaintiffs.

¹⁵ Submitted by the government on 29 August 2012.

¹⁶ 27 June 2011, written response to questions asked at a meeting between NISA, Diet members, and citizens at the House of Councillors Diet Office Building on 25 June, 2011.

generator tube where other facilities such as the diesel generator or secondary water supply system function fully even with loss of outside power. An earthquake resulting in control rods taking 11 seconds to insert would be a huge earthquake, resulting in extensive damage to the reactor facility. KEPCO's use of the 11-second figure to argue safety of the Ohi plant indicates it has not learned the lessons of the Fukushima Daiichi accident.

KEPCO had originally told the presiding judge that the plant could not operate if the assumed insertion time exceeds 2.2 seconds. When asked by the judge about this, KEPCO responded that this 2.2-second insertion time requirement is for accidents and not earthquakes. It states that Article 5 rather than Article 24 of the government's Technical Standards¹⁷ applies to emergency situations such as an earthquake. Article 5, however, states that insertion times must be considered taking into consideration earthquake and accident factors *together*, the accident factor's calculation being based on the seismic design review guidelines. In fact, KEPCO's figure of 2.16 seconds had been calculated in this way. Nowhere in the government documents does the 2.2-second insertion time stipulation exempt earthquakes.

KEPCO also argues that even if the three active faults move together resulting in approximately 1000 gal of seismic motion, it would not be a problem because it has been confirmed by experimentation that the fuel rods could be inserted "at around 2.2 seconds" at 1560 gal seismic motion. Plaintiffs reviewed the document KEPCO was referring to, a report issued by the Japan Nuclear Energy Safety Organization (JNES) in 2006, and found the actual figure in the report to be 3.26 seconds, substantively exceeding the 2.2-second requirement.

Concerning the burden of proof, plaintiffs argue that, according to judicial precedent, with KEPCO arguing that "it has become evident that insertion time within at least around 11 seconds does not cause any danger," the burden of proof that up to 11 seconds would not cause material damage to the plaintiffs must be borne by KEPCO.

Concerning the issue of the three active faults interconnecting, it is worth noting that in the court hearing, the presiding judge did not raise the issue of whether or not the three active faults would interact, but rather asked KEPCO questions on the assumption that this interaction would occur.

Significance of the Case

It is not yet known how much Japan's new Nuclear Regulatory Authority (NRA), created after the Fukushima Daiichi nuclear accident, will yield to the nuclear lobby and allow the restart of nuclear power plants in Japan. The Abe government has scrapped the nuclear phase-out debate that had been undertaken by the Democratic Party government administration in the summer of 2012. At the same time, citizens' voices in support of learning from the lessons of Fukushima are stronger than ever. Today, we are at a crossroad. How effective the courts and citizens will be in this push-pull is now about to be seen.

Since the upcoming verdict will provide a decision on the first legal case challenging nuclear power plant operation safety since the Fukushima Daiichi accident of 11 March 2011, it will no doubt greatly influence the path Japan will take regarding nuclear power.

¹⁷ Ministerial Ordinance of Establishing Technical Standards for Nuclear Power Generation Equipment. Ministerial Ordinance No.62, 1965.

In spite of warnings by scientists as well as citizens and NGOs nationwide, the effects of earthquake faults in the vicinity of nuclear power plants and the resulting seismic motion to the power plant facilities had been under-estimated over the decades before the Fukushima accident by treating these earthquake faults, often in a line and clearly related, as separate faults that could not interconnect. The Fukushima Daiichi accident proved that it had been a mistake to treat these faults separately.

Inserting the control rods to safely shut down a reactor, cooling the reactor fuel, and containing the radiation are the key elements necessary to prevent disastrous releases of radiation into the environment. At Fukushima Daiichi, the first step of shutting down the reactors succeeded, yet there were disastrous releases of radiation into the environment. The accident would have been far worse had the reactors not been able to shut down. The ability of control rods to be inserted in time to shut the reactor down is crucial to safety.

This legal case for seeking an injunction to stop Ohi Unit 3 and 4 is addressing this first, critical initial step, the ability to stop the reactor in the event of an earthquake.

If plaintiffs win and succeed in shutting down Ohi Units 3 and 4, it will be a significant and historic indictment of Japan having moved forward with nuclear power when it is an earthquake-prone archipelago, and, on current nuclear power regulation in Japan. Even if the ruling does not recognize that plaintiffs' human rights are violated (i.e. judges in favor of the plaintiffs), if the verdict text recognizes that KEPCO is in violation of the 2.2-second reactor shutdown control rod insertion time, it would also be a significant step toward shutting down Ohi Units 3 and 4, and thus helping to lead Japan out of nuclear power.

This briefing paper was compiled based on documents submitted to the court by the plaintiffs and the defendant (KEPCO).

*See the following site in Japanese for plaintiff court submissions:
http://www.jca.apc.org/mihama/oosaiban/oosaiban_room.htm*