

Fukushima Nuclear Disaster: “Therefore, a meltdown had advanced in the reactor core and this fact was hidden from the public for about three months.”

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NUCLEAR CRISIS—9 MONTHS ON / Govt pressure on N-agency cast doubt on meltdown

Nine months have passed since the Great East Japan Earthquake triggered the crisis at the Fukushima No. 1 nuclear power plant. This is the first installment in a two-part series that looks into problems facing the Nuclear and Industrial Safety Agency, among other issues, and what is required to create a new nuclear safety agency in April.

When did a meltdown occur at the Fukushima No. 1 nuclear power plant after the March 11 disaster?

“It’s a core meltdown. We believe the fuel has started to melt [in the No. 1 reactor],” Koichiro Nakamura of the Nuclear and Industrial Safety Agency said at a press conference at 2 p.m. the following day.

But the agency quickly reversed itself and expressed doubt whether a meltdown had occurred. The agency finally admitted on June 7 there had been a meltdown.

On Nov. 30, the plant’s operator, Tokyo Electric Power Co., issued a statement on the No. 1 reactor: “Almost all of the [68 tons of] nuclear fuel [rods] melted, fell through a pressure vessel and eroded the concrete bottom of the containment vessel by up to 65 centimeters.”

Therefore, a meltdown had advanced in the reactor core and this fact was hidden from the public for about three months.

Nakamura, deputy director general for nuclear safety at the Economy, Trade and Industry Ministry’s agency, was the first to touch on the possibility of a meltdown of the No. 1 reactor.

His statement was based on the fact that radioactive cesium, which normally is only found in the fuel rods in theory, had been detected outside the nuclear power plant.

Ahead of his press conference, Nakamura asked then agency Director General Nobuaki Terasaka, 58, whether he could say a meltdown had occurred.

Terasaka gave him the green light, saying, “We have no choice but to mention it.”

An hour after the press conference, staffers at the Prime Minister's Office were taken aback by Nakamura's remarks when they watched live coverage of the press conference on TV.

"What's this media coverage [of the press conference]?" shouted Keisuke Sadamori, then secretary to the prime minister and a former METI bureaucrat.

He telephoned the agency and demanded that it inform the Prime Minister's Office in advance whenever it had important information.

"It's wrong for the prime minister to get such information via TV," Sadamori said over the phone.

Thereafter, the Prime Minister's Office established a rule that it would hold a news conference on important findings and other information ahead of the agency.

"As we couldn't get the necessary information, our distrust in the agency knew no bounds. I had to phone the agency," Sadamori said as he recalled the tense atmosphere at the Prime Minister's Office that day.

At 3:36 p.m. on March 12, a hydrogen explosion destroyed the upper part of the building housing the No. 1 reactor at the Fukushima plant. TV stations broadcast white smoke rising from the damaged building.

While the government struggled to gather information on the explosion, the agency clammed up and refused media's requests to explain what is happening.

"We're unable to get approval [for a press conference] from the Prime Minister's Office," an agency official told the media.

Finally at 5:45 p.m., then Chief Cabinet Secretary Yukio Edano, 47, held a press conference, followed by an agency news conference at 6 p.m. Neither Edano nor the agency provided much information.

On March 13, Edano admitted at a press conference there was a possibility of a meltdown. In contrast, the agency had backed down from its initial assertion.

The following day, Nakamura did an about-face only two days after his initial statement. "We can't say for certain whether there's been a meltdown," he said.

Finally on June 7, the agency itself admitted a meltdown had occurred at the No. 1 reactor.

According to research results announced by TEPCO in May, however, most of the fuel at the No. 1 reactor had melted by the morning of March 12. This means Nakamura's initial explanation was correct.

Explaining why the agency's information had undergone such a change, Terasaka said: "After the Prime Minister's Office's instruction, we became very cautious about using the term 'meltdown.' We felt our statements should not exceed what the Prime Minister's Office said at press conferences."

Meanwhile, Edano took issue with the agency's stance in a recent interview.

"If the agency had explained to us about the meltdown, we would have made an announcement reflecting the agency's position exactly," he said.

However, the Prime Minister's Office should take a lot of blame for intimidating the agency during

the emergency, resulting in the failure to obtain essential information.

During a crisis that stunned the country, the agency was unable to build a cooperative relationship with the Prime Minister's Office. The agency lacked leadership in dealing with severe problems such as a reactor meltdown.

One reason for this failure is the government's belief that utility firms must take responsibility for safety measures, observers point out.

After the 1986 Chernobyl nuclear power plant meltdown, European and other countries reinforced measures to deal with such an emergency. For instance, utilities installed devices to ensure venting—a measure that releases steam from a nuclear reactor to prevent an explosion.

In Japan, research was carried out on this type of measure and in 1992 the government asked utility companies to take similar steps.

However, the Nuclear Safety Commission in charge of evaluating safety measures against severe accidents, including venting, decided measures should be taken by operators on a voluntary basis. "The possibility of severe accidents occurring is extremely small," it said.

"We were extremely worried that 'the safety myth' of nuclear power plants—that serious nuclear accidents never occur—would collapse if the government took the lead and local residents were unduly alarmed," said an industry source familiar with the situation at the time.

Instead, the government introduced a periodical safety review system in which utilities evaluated their safety methods for their nuclear power stations' equipment and operations every 10 years under administrative guidance. This would allow the government to check on the status of measures implemented by each firm.

However, the government failed to provide sufficient instructions to the companies. For about 20 years until the Fukushima No. 1 plant nuclear crisis, the measures have never been strengthened.

However, there was an opportunity to review the situation before the nuclear crisis.

In 2002, it was learned that TEPCO had falsified data concerning equipment inspections at its nuclear power plants, including the Fukushima No. 1 plant. At the time, the regulatory system's laxness—the government evaluates the voluntary safety measures implemented by the utilities— was criticized.

In 2003, the agency made legally binding the periodical safety review by including it as part of safety regulations. However, measures against severe accidents in the periodical safety review were excluded, as there were no specific methods to evaluate the possibility of serious nuclear accidents occurring.

"Electric power companies were worried about telling residents there was a risk [of severe nuclear accidents]," said Naoki Kajita, deputy director general for science and technology policy at the Cabinet Office. Around March 11, he was the director of the agency's nuclear power inspection division.

A source in the electric power business said: "We thought it [inclusion of measures against serious accidents into the safety regulations] would put us at a disadvantage if nuclear plant-related lawsuits are filed. We lobbied the government not to legally oblige us to take measures against such accidents."

Yoshihiro Nishiwaki, a guest professor at the University of Tokyo and Kajita's predecessor at the inspection division, regrets the inadequate efforts of the agency.

"Our efforts [to take safety measures against severe accidents] ended in 1992. We hadn't prepared for such an accident as we had no idea it would happen," Nishiwaki said.

In February 2010, a special working group at the agency compiled a report that measures against severe accidents should be seriously considered, including the possibility of making them legally binding. Moves made in the United States, Europe and other nations in this respect were taken into consideration.

The Great East Japan Earthquake occurred as the government was about to begin studying the situation.

On Dec. 2, TEPCO's in-house accident investigation committee said, "Despite all our preparations, TEPCO could not have come up with effective measures to prevent such a catastrophe."

Following the nuclear crisis, the government has changed its policy and decided to legislate measures to deal with severe accidents to try to avert such disasters.

The government is preparing to submit a bill to revise the Nuclear Reactor Regulation Law to the next ordinary session of the Diet.

The bill is expected to pass the Diet before the envisioned nuclear safety agency is established in April.

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<http://www.yomiuri.co.jp/dy/national/T111215006237.htm>

Panel probing Fukushima accident to continue assessing quake impact

TOKYO (Kyodo) — A government panel investigating the nuclear accident at the Fukushima Daiichi power plant will not provide in its interim report any in-depth analysis on how far the March 11 earthquake affected the plant's key facilities before they were hit by tsunami waves, sources close to the matter said Monday.

The decision leaves open the possibility facilities that were important for securing the safety of the plant may have been damaged by the jolt of the magnitude 9.0 quake, despite plant operator Tokyo Electric Power Co.'s assertion that the direct cause of the accident was a larger-than-expected tsunami triggered by the quake.

The investigation committee led by Yotaro Hatamura, a professor emeritus at the University of Tokyo, is expected to release its report on Dec. 26.

The report could further delay the resumption of the country's atomic power plants suspended for regular checkups, as local governments are waiting to see the outcome of the investigation before deciding their stance on whether to approve the restart.

If doubts about the current quake-resistance standards increase, local governments may feel reluctant to allow the resumption of reactors at a time when the public is already concerned about the safety of nuclear power plants in the wake of the Fukushima accident.

According to the sources, the panel members have decided that it is currently difficult to determine the impact of the earthquake, because they cannot go inside reactor buildings to for inspection due to the high radiation level.

The members would continue to carefully assess the controversial issue in the course of compiling the final report, to be worked out by the latter half of next year.

The plant operator known as TEPCO said in a recently-issued interim report on an in-house investigation into the accident that key facilities did not sustain damage as a direct result of the quake, but the flooding from the massive tsunami waves led to the “simultaneous loss of multiple safety functions.”

Meanwhile, members of a separate investigation panel set up in the Japanese parliament met for the first time in the city of Fukushima on Monday.

The panel, led by Kiyoshi Kurokawa, former president of the Science Council of Japan, plans to issue a report next June.

Hit by the earthquake and ensuing tsunami, the Fukushima nuclear plant located on the Pacific coast in northeastern Japan lost nearly all of its power sources and consequently the ability to cool the reactors and spent fuel pools. The government has acknowledged that the Nos. 1 to 3 reactors at the plant suffered meltdowns.

Kyodo Press, December 19, 2011

<http://mdn.mainichi.jp/mdnnews/national/news/20111219p2g00m0dm108000c.html>

Gov't panel finds breakdown in chain of command in nuclear crisis response

A coolant injection system meant to serve as a last defense against an explosion at the Fukushima No. 1 nuclear plant's No. 3 reactor had been disabled at the discretion of workers on site, suggesting that a possible breakdown in the chain of command led to the severity of the ongoing nuclear crisis.

According to the committee's most recent findings, workers on site had shut down the No. 3 reactor's high-pressure coolant injection (HPCI) system on March 13 without authorization, and found later that they could not restart the system. The reactor suffered a hydrogen explosion the following day.

This comes on the heels of revelations this past summer that Masao Yoshida, then chief of the plant, had overseen emergency efforts under the assumption that the isolation condenser (IC) of the No. 1 reactor was still running when it actually wasn't.

A midterm report published Dec. 2 by Fukushima plant operator Tokyo Electric Power Co. (TEPCO) on its internal investigation of the disaster states that power was lost at the No. 3 reactor on March

11, the day the Great East Japan Earthquake hit. The reactor core isolation cooling (RCIC) system was activated, and began injecting water into the reactor. At 11:36 a.m. on March 12, however, the system was disabled due to unknown causes, resulting in a drop in the reactor's water levels. According to TEPCO, the high-pressure coolant injection (HPCI) system automatically began running at 12:35 p.m., but stopped at 2:42 a.m. on March 13.

The HPCI system is a type of emergency core cooling system (ECCS) that is activated when reactor water levels dip unusually low, injecting water into the reactor. It utilizes the steam given off by a reactor's residual heat to run a turbine-driven pump, vigorously pushing water from the top of the reactor to the reactor core, where nuclear fuel is located. Its biggest advantage is that it can operate on batteries in the case of a power outage.

Sources say that a government panel investigating the Fukushima nuclear disaster has found that workers on site shut down the HPCI system out of fear that batteries would die, without the authorization of then plant chief Yoshida. Workers subsequently tried restarting the HPCI and RCIC systems, but were unsuccessful. The government panel is expected to state in its midterm report this month that "it would have been preferable not to shut down the HPCI system."

The tsunami-readiness of the plant is also expected to be addressed in the report. In 2008, TEPCO calculated that tsunami over 10 meters high, far exceeding the 5.7-meter tsunami that had until then been predicted, were possible. However, specific measures were shelved after some in the company complained that raising the height of levees would significantly raise costs, and the claim by some — including former plant chief Yoshida, then the head of TEPCO's facility management department — that "the calculations are of a strongly academic nature, and such a tsunami is not expected to hit."

The report will also mention the dysfunction at the emergency headquarters set up on-site in accordance to law, and the government's rephrasing of "core meltdown" as "core damage" — making the situation appear less serious. The panel will submit its final report next summer.

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<http://mdn.mainichi.jp/mdnnews/national/news/20111216p2a00m0na020000c.html>
