

# Japan: What Shut Down 17 Nuclear Plants?

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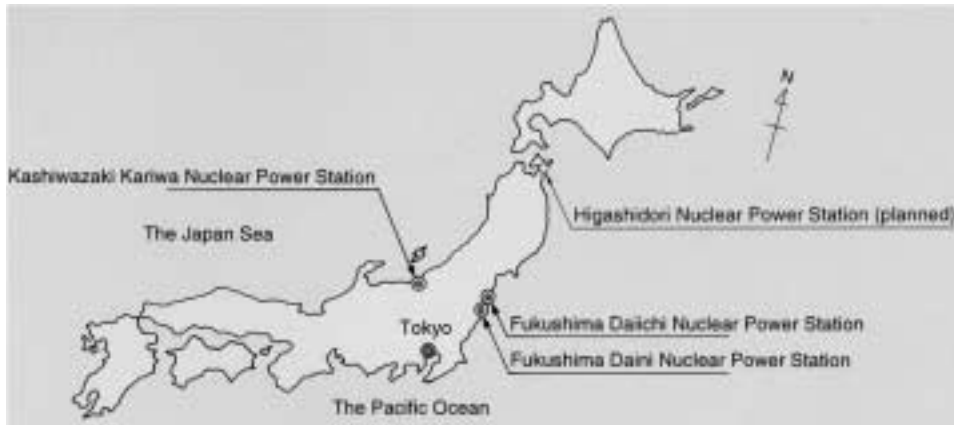
Japan's ambitious nuclear vision—to become energy self-sufficient and a world leader in advanced nuclear technology—has long been a target of the geopoliticians and the anti-nukes. Japan chose to go nuclear (52 nuclear plants now supply 34% of its electricity), because nuclear made the most sense for a country with high-technology, energy-intensive industry, and virtually no indigenous oil or gas supplies.

Recently, as news headlines have blared worldwide, 17 nuclear plants that supply about 40% of the electricity of the Tokyo region of 40 million people, were shut down for inspections of “cracks,” and brownouts will be expected this Summer. What the often-biased stories don't tell you is how this came about, and why the small cracks are not, in reality, serious safety concerns.

The 17 plants are managed by TEPCO, the Tokyo Electric Power Co., one of ten nuclear utilities in Japan. The nuclear plants involved are of the boiling water reactor (BWR) design, developed and built in collaboration with General Electric from the early 1970s through the 1990s. A former General Electric engineer, reported to be an American who had worked as a consultant in Japan and was laid off, sent a letter to Japan's nuclear regulatory agency, the Nuclear and Industrial Safety Agency (NISA) in July 2000, stating that TEPCO employees had falsified records on voluntary inspections conducted at some nuclear plants.

For the next two years, TEPCO, NISA, GE, and Japan's Ministry of Economy, Trade, and Industry (METI), pursued the whistleblower's complaints with investigations and safety analyses. On Aug. 29, 2002, TEPCO published an “Investigation Into False Recordings of Licensee's Self-Imposed Inspection Works at Nuclear Power Plants,” concerning the cases involved. It also issued a press release, stating that there were “29 cases which might have been processed inappropriately in TEPCO's maintenance work at its nuclear power plants, that they were currently under investigation, and that no safety problems had been found concerning the suspected equipment that was currently in use.”

Shortly thereafter, on Sept. 2, 2002, TEPCO announced the resignation of its chairman, president, an executive vice president in charge of nuclear power generation, and two counselors, in order to take “management responsibility on a series of inappropriate processes.” In addition, many plant managers received punitive salary cuts, “stern warnings,” or



*TEPCO's 17 nuclear power stations are located at three sites: two on the Pacific Coast (Fukushima Daiichi with six reactors and Fukushima Daini with four reactors); and one on the Japan Sea coast (Kashiwazaki Kariwa with seven reactors). Future reactors include two more planned for Fukushima Daiichi and two for Higashidori.*

"cautionary warnings." Meanwhile, the investigations by an Internal Investigative Committee continued.

### A 'Mistaken Idea'

The TEPCO committee issued an initial report to NISA on Sept. 17, 2002, which was made public. TEPCO's analysis of why the maintenance reports failed to mention problems such as small cracks found in the shroud (cylindrical container) surrounding the reactor core reveals the central problem: "the mistaken idea that they [the nuclear maintenance workers] did not have to make a report as long as there was no safety issue," and that it was "preferable to avoid reporting problems to the regulator whenever possible," in order to avoid delays in keeping the plants on line.

The report also cited "pressure relating to the serious public response to problems in nuclear power plants" (based on Japan's history with radiation) and the nuclear maintenance workers' "overconfidence that they understood nuclear power best," as contributing to this "mistaken idea."

As a result, the report stated, maintenance staff deleted "records of problems and subsequent repair work" over a period of time. The report also noted that "an organizational climate was fostered in the nuclear sections in which no one could express his/her own opinions because the sections comprised a homogeneous society with a limited number of members." Anyone who has worked in a large organization or corporation can probably understand the dynamics behind such problems.

In a press release issued at the same time, TEPCO expressed its "sincere apologies" for damaging public confidence. TEPCO vowed to improve its company practices and ethics, and to work with the public to reestablish trust. This process has included door-to-door informational meetings in the community. TEPCO has continued to investigate each plant, shutting them down one by one over the past few months for further inspection and tests. All together, TEPCO has reviewed 8 million pages of documents, and has spent the equivalent of 15,000 man-days in the investigations.

### The Power Gap

Although TEPCO has restarted seven of its retired non-nuclear power plants to fill in the gap (at a great increase in fuel and operating costs), it is likely that there will be power outages in the Tokyo area during the height of the Summer heat, unless between 8 and 10 of the nuclear plants are put back on line to meet the power demand. Three of the 17 plants are scheduled to be closed for routine maintenance checks into the Summer, and one plant was ordered by the government to remain closed until November 2003, as a reprimand for the most serious of TEPCO's infractions—the manipulation of an air pressure test for the integrity of the reactor containment at this unit.

On May 7, at 6 p.m., the first of the 17 plants, Unit 6 at Kashiwazaki Kariwa, was restarted. TEPCO's manager of nuclear programs at the company's Washington, D.C. office, explained that before the restart, TEPCO had to obtain the confidence of the local community. "Although this is not required by law, it is just custom," said Shinichi Kawamura. The governor of the prefecture (county) and area mayors got together to inspect the plant and to give their okay to the restart.

Unit 7 at the same Kashiwazaki Kariwa site is expected to be able to go back on line soon. Unit 6 and Unit 7 are each 1,356 MW plants. These are advanced boiling water reactors, built as a joint venture of GE, Toshiba, and Hitachi, and put on line in 1996 and 1997. Note that at a time when U.S. nuclear power plants were taking 20 years to build, these two plants were constructed in just 51 months each, including a 12-month start-up testing for one, and a 9-month start-up testing for the other.

As for the future, Mr. Kawamura said that TEPCO will have to work hard to regain the confidence of the public, and to show people that TEPCO has changed its ways, to prevent such things from happening.

In conclusion: For Japan, to maintain its future as an industrial nation, nuclear energy is still the best option. And honesty is the best policy.