

Sheet1

Major Incidents at Nuclear Facilities April 2007- March 2008

Date	Facility Name	Incident Description	Cause, Response, Etc.
5 April 07	NFI Tokai	18 kg of uranium powder was carried in a powder handling box in the pellet fabrication room in the uranium fuel fabrication facility. This exceeds the box's 15 kg nuclear limit. The limit was exceeded on 3 occasions.	An interlock will be installed to prevent the limit being exceeded.
10 May 07	Sendai-1	Deterioration was found in 13 heat transfer tubes in the steam generators (4 pipes in SG A, 2 in SG B and 7 in SG C).	Stress Corrosion Cracking (SCC) of Inconel 600 alloy was found on the inside surface of the tubesheet expansion portion in the primary coolant inlet side. The damaged pipes will be plugged at the tubesheet and not used.
22 May 07	Onagawa-1	Under adjustment operation, during a manual start-up test of the high-pressure coolant injection pump, flow rate at the outlet side was too low. The situation did not improve when a regulating valve was adjusted, so the reactor was shut down manually.	The valve stem and parallel pin were broken due to fatigue caused by cavitation within the valve.
8 June 07	Fuku II-2	When conducting blast work for recoating of the suppression pool wall, metal powder used for intensive blasting hit a small area of the wall due to incorrect operation. Part of the wall was eroded to less than the required thickness.	Due to the poor work environment, communication between the workers was insufficient. The damaged section will be built up by overlay welding.
19 June 07	Fuku I-1	During periodic inspection of emergency diesel generator 1A, smoke was emitted from the generator and its power panel.	Excess current flowed through the part, because part of the circuit breaker components had been assembled in reverse due to an assembling error.
5 July 07	Hamaoka-5	During adjustment operation, an alarm indicated inoperability of reactor average power monitor-B. At the same time, one of the signals showing rapid reduction of reactor coolant flow rate was also excluded. Power output was reduced to less than 75%.	A component in the central processing unit (CPU) used to measure reactor power was damaged. Replacement parts fitted.
16 July 07	KK-3	Fire in transformer 2B.	Consequence of the Chuetsu-Oki Earthquake
16 July 07	KK-6	Water containing about 90,000 Bq of radioactive material, which leaked from the controlled area to the uncontrolled area, was discharged to sea.	Consequence of the Chuetsu-Oki Earthquake
24 July 07	KK-6	Cross pins used at the drive axis universal joint of the overhead crane were damaged in three locations.	Consequence of the Chuetsu-Oki Earthquake
3 Sep. 07	Ohi-1	The water level fell in the pressurizer and in the chemical and volume control tank. A leak was discovered around the primary coolant pump seal water injection filters. The reactor was shut down manually.	The O-ring on the filter flange was broken.
18 Sep. 07	Tomari-1	Emergency diesel generator 1B shut down automatically during a start-up test. Safety rules required that emergency diesel generator 1A also be tested. When 1A was tested again the following day, it failed to start. The reactor was shut down manually.	Foreign material was found inside the governors. The governor for 1A had only just been replaced in August.
25 Sep. 07	Mihama-2	During a periodic inspection, cracks were found on the inside of the primary coolant inlet piping nozzle stub of steam generator A.	Stress Corrosion Cracking (SCC) of Inconel 600 alloy. The safe end and elbow will be replaced. Repairs will use Inconel 690 alloy.

Sheet1

1 Oct. 07	Rokkasho Reprocessing Plant	During active tests, while spent fuel was being sheared, the basket in the end-piece cleaning tank stopped operating. On Oct. 5 it was confirmed that the basket was deformed and that the end-piece had fallen to the bottom.	The sensor that detects whether the endpiece has been transferred to the next process was not adjustable.
2 Oct. 07	Takahama-2	During a periodic inspection, while testing extraction and insertion of the control rods, the control rod position indication system showed one rod near the full withdrawn position, when all rods should have been fully inserted.	Foreign material appeared to have fallen between the control rod cluster guide tube and the control rod, preventing it from moving into place.
18 Oct. 07	Tsuruga-2	During a periodic inspection, cracks were found on the inside of the primary coolant inlet piping nozzle stubs of steam generators A, B & C.	SCC of Inconel 600 alloy. Inconel 690 alloy weld will be applied after machining the damaged section.
7 Nov. 07	Ohi-2	During a periodic inspection, pipe thinning was discovered in the elbow section downstream of the main feedwater isolation valve in main feedwater pipe C (carbon steel). In places the pipe was below the minimum allowed thickness.	Thinning due to erosion and corrosion of the carbon steel pipe.
10 Nov. 07	Onagawa-3	During adjustment operation, the reactor was shutdown manually in response to an alarm in the off-gas treatment system indicating "Off-Gas Dehumidification Cooler outlet Hydrogen concentration high".	A simulation test showed that the reaction between hydrogen and oxygen slows down rapidly when the oxygen/hydrogen ratio drops below a certain threshold. The lower the reactor power, the higher the threshold tends to be.
15 Nov. 07	Hamaoka-4	During adjustment operation, the reactor was shutdown manually in response to a large CUW differential flow alert in the reactor coolant cleanup system. Operators confirmed abnormal noise in the regenerated heat exchanger room.	According to Chubu Electric, the setting for detection of large CUW (reactor cleanup water system) differential flow was incorrect.
21 Nov. 07	Shimane-1	While the refueling machine was being moved from the spent fuel pool to above the reactor core for inspection, the refueling machine's fuel gripper was deformed when it came into contact with the railing of the spent fuel pool.	The operator failed to check the surrounding area.,
27 Nov. 07	Hamaoka-1&2	During a periodic inspection, cracks were found in the pass-through section of a common exhaust stack of Unit 1 and 2 (specifically, the sampling pipe designed for monitoring purposes) .	A tube will be installed to surround the pass-through section and the pass-through section of the sampling pipe at the stack monitor will be included in the inspection plan of the exhaust stack.
4 Dec. 07	Takahama-2	During a periodic inspection, cracks were found on the inside of the primary coolant inlet piping nozzle stubs of steam generators A, B & C.	SCC of Inconel 600 alloy. Inconel 690 alloy weld will be applied after machining the damaged section.
18 Dec. 07	Genkai-1*	During a periodic inspection, cracks were found on the inside of the primary coolant inlet piping nozzle stub of steam generator A.	SCC of Inconel 600 alloy. The damaged section will be removed by machining.
4 Feb. 08	Takahama-3	During a periodic inspection, cracks were found on the inside of the primary coolant inlet piping nozzle stubs of steam generators A, B & C.	SCC of Inconel 600 alloy. Inconel 690 alloy weld will be applied after machining the damaged section.
12 Mar. 08	Ohi-2	During a control rod operation test, one of the four rods constituting the D bank was found to be out of position. Power output was reduced to 75%.	According to Kansai Electric, crud in the primary coolant had seeped into the sliding section within the control rod drivers.
17 Mar. 08	Hamaoka-1	During a periodic inspection, it was discovered that corrosion had occurred on the external surface of the condensate tank (installed outdoors) and that the tank wall failed to satisfy the technically required thickness at 3 points.	Apply build-up welding. Chubu Electric said it would include this in its periodic inspection plans.

* Reporting not legally required. In all other cases listed reporting was required under the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors.

K-K = Kashiwazaki-Kariwa; Fuku = Fukushima; NFI = Nuclear Fuel Industries Ltd.