Major Incidents at Nuclear Facilities April 2006- March 2007			
Date	**Company Facility**	**Incident Description and Comments**	**Rank 1>2>3**
5 April 06	Tsuruga 1	During periodic inspection of 13 hafniium plate type control rods, cracks found in two places on the top of the sheath of one rod. Cracks also found in 4 other rods. Stress corrosion cracking of sheath (SUS316L) as a result of neutron irradiation.	1
13 May 06	K-K-3	Alarm indicating "control rod drift" when all 185 control rods inserted in preparation for periodic inspection. Discovered that one rod (54-23) had slipped a notch. Apparently the collet finger of the control rod drive mechanism failed to catch in the index tube notch.	3
19 May 06	Onagawa-2	During periodic inspection of 13 hafniium plate type control rods, cracks found in the sheaths of 5 rods. Stress corrosion cracking of sheath (SUS316L) as a result of neutron irradiation.	1
21 May 06	Fuku I-4	Elevated reading by the off-gas monitor in the gaseous waste treatment system. Power reduced to 45% to deal with leaking fuel assembly. On 27 May, 5 control rods inserted around leaking assembly. Continued to operate reactor.	1
28 May 06	Hamaoka-5	Alarm indicating minor damage to control rod monitoring system. Discovered that 8 control rods could not be inserted using regular method. Problem with electricity supply to one of two devices for identifying position of rods.	3
5 June 06	Ikata-1	Reactor shut down manually due to irregular sound in moisture separator heater 1B. 49cm crack found in steam straightening vane and 37cm crack found in weld of another internal plate. Caused by fatigue due to vibration in poorly welded section.	1*
5 June 06	Fuku II-1	During periodic inspection, flow rate could not be confirmed during operation of flow control valve in residual heat removal system A. Discovered that valve stem was broken and valve had fallen. Initial crack in valve stem caused by mechanical fatigue.	1*
15 June 06	Hamaoka-5	Turbine triipped and reactor shut down automatically due to excessiveturbine vibration. Vanes in low pressure turbine B had broken off. Forks or roots of 663 of 840 vanes in stage 12 of low pressure turbines A, B, C, were cracked or broken. Caused by fatigue due to random vibration during low or no load and flashback phenomenon during load cut-off testing.	1*
21 June 06	K-K-3&4	Durng ultra sound tests of welds in recirculation system pipes, cracks found in 1 place in reactor 3 and 5 places in a single weld in reactor 4. Previous inspection judged the crack in reactor 3 to be a back wave weld.	1
18 July 06	K-K-7	Elevated reading by the off-gas monitor in the gaseous waste treatment system. 4 control rods inserted around leaking assembly. Continued to operate reactor until 23 August when periodic inspection began. Leak confirmed in 1 assembly.	1
18 July 06	Shika-2	When inspecting low pressure turbine, forks or roots of 258 of 840 vanes in stage 12 of low pressure turbines A, B, C found to be cracked or broken. Caused by fatigue due to random vibration during low or no load and flashback phenomenon during load cut-off testing.	1
3 Aug 06	Onagawa-2	During periodic inspection, a worker found leaked liquid in 3 puddles on torus room floor in 3rd basement of reactor building. Finally found 7 puddles totaling 7 liters with radioactivity estimated at 6 million becquerels. Check of reactor water cleanup system revealed loss of boundary due to consecutive errors in valve operation.	1*
7 Aug 06	Hamaoka-3	During periodic inspection, 13 hafnium plate type control rods loaded in reactor core were checked. Cracks found in sheaths and tie rods of 5 of them. Stress corrosion cracking of sheath (SUS316L) as a result of neutron irradiation.	1*
11 Aug 06	Fuku I-4	47 billion becquerels of tritium released to atmosphere as steam from auxiliary boiler, because tritium containing water from condensate storage tank flowed into pure water make-up water system. Caused by incorrect operation of valves during valve decontamination work.	1*
18 Aug 06	Takahama-3	When reducing power for periodic inspection, reactor shut down automatically in response to alarm indicating abnormally low water level in steam generator B. Pilot valve of the positioner of the main feedwter bypass control valve was stuck due to accumulation of ammonium sulphate adhesives.	1*
27 Sep 06	Shika-2	When inspecting high pressure turbine, 900 (approx. 80 gm) metal fragments (2-3 mm) found. Marks left where fragments collided with turbine vanes. Shotblast used in manufacture of main steam shutoff valve had remained in valve and was released during operation. During checks of other equipment a further 2,136 fragments (156 gm) collected.	2

4 Oct 06	Tsuruga-2	From 29 August reduced water level noticed in surge tank of componenet cooling system. Leak to sea side discovered in tubes of heat exchanger A of componenet cooling system. When reactor stopped on 4 October, 7 tubes found to be leaking. Thinning rate of over 40% for 1,514 tubes in heat exchanger A and 2 tubes in heat exchanger D. Erosion & corrosion of tubes progressed because of peeling of protective film during high pressure water cleaning and failure to form film due to inadequate injection of ferrous sulphate dissolution. 2,055 tubes in componenet cooling systems A,B,C,D replaced.	1*
11 Oct 06	Ikata-2	When reducing power for periodic inspection, elevated iodine level discovered in primary coolant. Leak discovered in 1 fuel assembly.	1
13 Oct 06	Shimane-1	During periodic inspection, thickness of water level meter piping in condensate storage tank found to have corroded to below minimum permitted 9.9mm. Previously only external inspections had been conducted. Heat insulation material had not been removed.	1*
1 Nov 06	Genkai-2	Elevated iodine level, apparently due to leak in 1 fuel assembly, discovered in primary coolant. When reactor shut down manually on 14 November, cesium found to be leaking from 1 assembly.	1
9 Nov 06	Shimane-1	During periodic inspection, discovered that thickness reduced to below permitted level (6.37mm) in outlet header piping of condensate filter (outlet piping connections to condensate filters of B tank (5.9mm) and C taank (5.8mm)). Caused by erosion/corrosion of carbon steel pipes.	1*
22 Nov 06	Tokai-2	Cracks or breaks discovered around meter tubes and metal supports for 6 jet pumps when checking them in preparation for water jet peening test. Caused by vibration from water flow. Strengthened with couplings.	2
28 Nov 06	Mihama-1	1 broken tube and 1 with a hole discovered when carrying out ECT check on heating tube of moisture separator heater A. Break caused by fatigue. Hole caused by thinning due to steam released from broken tube.	3
16 Dec 06	Ikata-2	When carrying out reactor physics check during periodic inspection, discovered that 1 control rod was 20 steps (of total 228 steps) below others. Reactor shut down manually. Possible that crud from primary coolant accumulated in control rod drive mechanism.	3
17 Jan 07	Fuku I-2	Short circuit during reactor startup. Occurred near automatic depressurization system control circuit in containment vessel. Reactor shut down manually. Electrical cable inside flexible metal tube squashed between supports for main steam system pipe and air compression system pipe. Cable was part of safety release valve.	1*
17 Jan 07	K-K-5	Crack discovered in weld during ultra sound test of recirculation system pipe during periodic inspection.	1
24 Jan 07	Genkai-2	2 cracks (90mm and 20mm long by 8.1mm deep) discovered inside bent portion of excessive extraction piping. Pipe located between prmary coolant pump and steam generator in primary coolant system B. Remaining thickness just 1.5 mm. Caused by heat fatigue from cavity flow in bent portion. Change dimensions and replace bent portion and downstream portion.	1*
4 Feb 07	K-K-6	When testing insertion and extraction of control rods, 1 rod (58-19) failed to move.	3
10 Feb 07	Fuku I-4	During shutdown, when isolating reactor after disconnecting generator, electric feedwater pump stopped due to operator error. This caused drop in core water level. Restarted feedwater pump to raise water level, but generator stopped automatically in response to core water level signal. Originally power output was 10%, but during this period it flucutated between 6% and 23%. Reactor shut down manually. Problem caused by incorrect operation of feedwater pump electricity circuit breaker.	1*
18 Feb 07	Fuku II-4	Reactor shutdown automatically during startup, due to signal indicating elevated radiation in main steam pipe and signal indicating inability to adjust radiation level. Caused by electrical noise in main feedwater pipe radiation monitor.	1*
20 Feb 07	Fuku I-5	On 18 February, when conducting routine test of pump A in core spray system, minimum flow bypass valve failed to fully close. Reactor shut down manually on 20 February. Valve failed to operate because lower part had fallen away.	1*
22 Mar 07	Mihama-1	During periodic inspection, worker on patrol discovered leaks in 5 places in containment vessel. Leaks from concrete wall on reactor cavity side. Loading of fuel postponed. Leak checks of reactor cavity and welds on inside of water channel confirmed leaks in 4 places.	2

*Reporting required by law.
K-K = Kashiwazaki-Kariwa; Fuku = Fukushima