

Work Schedule of the Main Inspection/Restoration of the Kashiwazaki-Kariwa Nuclear Power Station in Response to the Niigata-Chuetsu-Oki Earthquake (during 4 Weeks)(1/3)

【Inspection/Restoration Status】

◆From December 7th, 2008 (Sun) to January 3rd, 2009 (Sat)

System / Equipment	Items	Dec. 7th (Sun) to Dec. 13th (Sat)	Dec. 14th (Sun) to Dec. 20th (Sat)	Dec. 21st (Sun) to Dec. 27th (Sat)	Dec. 28th (Sun) to Jan. 3rd (Sat)	Status of Inspection / Restoration
Unit No.1	Turbine facilities	Turbine inspection *				Low-pressure turbine (B) internal inspection completed. High-pressure turbine and low pressure turbine (A) (B) (C) detailed inspection commenced on Nov. 17. <Work to be suspended from Dec. 27 to Jan. 4>
	Other facilities	Submerged equipment inspection on ground floor 5 of the reactor combination building				Restoration work commenced on Mar. 17. <Work to be suspended from Dec. 27 to Jan. 4>
		House transformer inspection				Transportation into the factory is underway.
		Excitation transformer inspection				Transportation into the factory is underway.
		Main generator inspection				Inspection commenced on Feb. 7. Withdrawal of rotor completed on Mar. 5. <Work to be suspended from Dec. 27 to Jan. 4>
		Main exhaust duct inspection / restoration				Preparation for restoration work commenced on Aug. 9. Restoration of substructure commenced on Dec. 1. <Work to be suspended from Dec. 27 to Jan. 4>
		Circulating water pipe inspection				Foundation improvement, excavating work, and inspection of pipes commenced on Aug. 6. <Work to be suspended from Dec. 27 to Jan. 4>
	Seismic reinforcement	Seismic reinforcement works for the roof truss of the reactor building				Preparation for reinforcement work to be commenced on Dec. 11. <Work to be suspended from Dec. 27 to Jan. 4>
Emergency intake channel					Preparation for reinforcement work commenced on Dec. 8. Foundation improvement work to be commenced in January 2009. <Work to be suspended from Dec. 27 to Jan. 4>	
Unit No.2	Reactor facilities	Reactor recirculation piping preventive maintenance				Preparation work to be commenced on Dec. 16. <Work to be suspended from Dec. 27 to Jan. 4>
	Turbine facilities	Turbine inspection *				High-pressure turbine and low-pressure turbine (A) internal inspection completed.
	Other facilities	House transformer inspection				Transportation into the factory is underway.
		Excitation transformer inspection				Transportation into the factory is underway.
		Main generator inspection				Inspection commenced on Mar. 19. Transportation of rotor into the factory completed on Aug. 22. <Work to be suspended from Dec. 27 to Jan. 4>
		Main exhaust duct inspection / restoration				Preparation for restoration work commenced on Aug. 9. Restoration of substructure commenced on Dec. 1. <Work to be suspended from Dec. 27 to Jan. 4>
Unit No.3	Reactor facilities	Reactor recirculation piping preventive maintenance				Preventive maintenance commenced on Sep. 12. Ultrasonic testing commenced on Oct. 16. <Work to be suspended from Dec. 27 to Jan. 4>
	Turbine facilities	Turbine inspection *				Low-pressure turbine (B) (C) detailed inspection commenced on May 7. High-pressure turbine and low pressure turbine (A) detailed inspection commenced on Jun. 25. Low-pressure turbine (A) (B) restoration work of blades commenced on Jun. 25. (Replacement of wear and contacted blades.) <Work to be suspended from Dec. 27 to Jan. 4>
	Other facilities	Main transformer inspection				Transportation into the factory is underway.
		House transformer inspection				3A, 3B Installation work commenced on Nov. 18. <Work to be suspended from Dec. 27 to Jan. 4>
		Excitation transformer inspection				Installation work commenced on Nov. 18. <Work to be suspended from Dec. 27 to Jan. 4>
		Main generator inspection				Inspection commenced on Feb. 20. Rotor carrying in completed on Aug. 1. <Work to be suspended from Dec. 27 to Jan. 4>
		Inspection of power supply input transformer of the primary loop recirculation system adjustable speed drive				Transportation into the factory is underway.
		Stack inspection				Inspection of stand-by gas treatment system pipe support to be conducted from Dec. 15 to Dec. 18.
		Main exhaust duct inspection / restoration				Preparation for restoration work commenced on Jul. 23. Restoration of substructure to be commenced in late December. <Work to be suspended from Dec. 27 to Jan. 4>
		Circulating water pipe inspection				Foundation improvement, excavating work, and inspection of pipes commenced on Jun. 16. <Work to be suspended from Dec. 27 to Jan. 4>
	Seismic reinforcement	Seismic reinforcement works for the roof truss of the reactor building				Preparation for reinforcement work completed on Nov. 26. Reinforcement work commenced on Nov. 27. <Work to be suspended from Dec. 27 to Jan. 4>
Unit No.4	Turbine facilities	Turbine inspection *				High-pressure turbine and low-pressure turbine (A) (B) (C) detailed inspection conducted from Jun. 19 to to Sep. 30 and to be commenced in January 2009.
	Other facilities	House transformer inspection				Transportation into the factory is underway.
		Excitation transformer inspection				Transportation into the factory is underway.
		Main generator inspection				Inspection commenced on Jan. 15. Transportation of rotor into the factory completed on Jun. 11. <Work to be suspended from Dec. 27 to Jan. 4>
		Inspection of power supply input transformer of the primary loop recirculation system adjustable speed drive				Transportation into the factory is underway.
		Main exhaust duct inspection / restoration				Preparation for restoration work commenced on Jun. 23. Restoration of substructure commenced on Nov. 4. <Work to be suspended from Dec. 27 to Jan. 4>

Work Schedule of the Main Inspection/Restoration of the Kashiwazaki-Kariwa Nuclear Power Station in Response to the Niigata-Chuetsu-Oki Earthquake (during 4 Weeks) (2/3)

【Inspection/Restoration Status】

◆From December 7th, 2008 (Sun) to January 3rd, 2009 (Sat)

System / Equipment	Items	Dec. 7th (Sun) to Dec. 13th (Sat)	Dec. 14th (Sun) to Dec. 20th (Sat)	Dec. 21st (Sun) to Dec. 27th (Sat)	Dec. 28th (Sun) to Jan. 3rd (Sat)	Status of Inspection / Restoration	
Unit No.5	Turbine facilities	Turbine inspection *				High-pressure turbine and low-pressure turbine (A) internal inspection completed.	
	Other facilities	House transformer inspection					Transportation into the factory is underway.
		Excitation transformer inspection					Transportation into the factory is underway.
		Main generator inspection					Restoration work commenced on Sep. 11. <Work to be suspended from Dec. 27 to Jan. 4>
		500kV power cable inspection					Removal of cables commenced on Jun. 30. <Work to be suspended from Dec. 26 to Jan. 5>
		Main exhaust duct inspection / restoration					Preparation for restoration work commenced on Jun. 2. Restoration of substructure commenced on Nov. 20. <Work to be suspended from Dec. 27 to Jan. 4>
		Circulating water pipe inspection					Foundation improvement, excavating work, and inspection of pipes commenced on Oct. 25. <Work to be suspended from Dec. 27 to Jan. 4>
	Seismic reinforcement	Seismic reinforcement works for the roof truss of the reactor building					Preparation for reinforcement work commenced on Dec. 8. <Work to be suspended from Dec. 27 to Jan. 4>
Unit No.6	Turbine facilities	Turbine inspection *					High-pressure turbine and low-pressure turbine (A) (B) (C) detailed inspection commenced on May 12. <Work to be suspended from Dec. 27 to Jan. 4>
	Other facilities	Reactor internal pump input transformer inspection					Installation work commenced on Mar. 26. Electrical testing to be conducted from Oct. 15 to mid-December. <Work to be suspended from Dec. 27 to Jan. 4>
		Main generator inspection					Inspection commenced on Mar. 10. Withdrawal of rotor completed on Apr. 3. Restoration work to be commenced on Dec. 13. <Work to be suspended from Dec. 27 to Jan. 4>
		Stack inspection					Inspection of outdoor duct to be conducted on Dec. 16 and Dec. 17.
	Seismic reinforcement	Seismic reinforcement works such as pipe supports					Reinforcement work commenced on Jul. 4. <Work to be suspended from Dec. 27 to Jan. 5>
		Seismic reinforcement works for reactor building overhead crane					Reinforcement work commenced on Oct. 31. <Work to be suspended from Dec. 27 to Jan. 4>
		Seismic reinforcement works for fuel handling machine					Reinforcement work commenced on Aug. 22. <Work to be suspended from Dec. 27 to Jan. 4>
	Verification of system integrity	System functional test					System functional test commenced on Dec. 4. <Work to be suspended from Dec. 27 to Jan. 4 Functional test of the flammability control system conducted on Dec. 4 and Dec. 6. Functional test of stand-by liquid control system conducted on Dec. 5. Functional test of main steam isolation valve conducted on Dec. 7. Functional test of main control room emergency circulation system conducted on Dec. 10. Functional test of instrument compression air system conducted on Dec. 10. Interlock functional test of liquid waste storage facility and disposal equipment #1 to be conducted on Dec. 11, Dec. 17 and Dec. 19. Rated capacity verification test of the emergency diesel generator to be conducted on Dec. 15 and Dec. 18. Functional test of DC power source system to be conducted on Dec. 16. Interlock functional test of liquid waste storage facility and disposal equipment #2 to be conducted on Dec. 17. Test operation of auxiliary boiler to be conducted on Dec. 17. Functional test of automatic depressurization system to be conducted on Dec. 1.
Unit No.7	Reactor facilities	Reactor pressure vessel closure					Closure work completed on Nov. 28.
		Reactor containment vessel closure					Closure work completed from Nov. 29 to Dec.5.
	Turbine facilities	Turbine inspection *					High-pressure turbine and low-pressure turbine (A) (B) (C) detailed inspection is underway. Low-pressure turbine (A) (B) restoration work of blades commenced on Apr. 14. (Replacement of wear and contacted blade.) Low-pressure turbine (A) (B) (C) restoration work of blades on the 15th stage commenced on Aug. 1, and restoration work of blades on the 14th and the 16th stages commenced on Sep. 25. Low-pressure turbine (A) coordinating for the start date of restoration of casing. <Work to be suspended from Dec. 27 to Jan. 4>
	Other facilities	Main generator inspection					Restoration work commenced on Jul. 14. <Work to be suspended from Dec. 27 to Jan. 4>
		Stack inspection					Inspection of outdoor duct completed on Dec. 8.
	Verification of system integrity	System functional test					System functional test commenced on Sep. 18. <Work to be suspended from Dec. 27 to Jan. 4> Reactor containment vessel leak-rate inspection conducted on Dec. 4 and Dec.5. Inspection of the reactor building airtightness conducted on Dec. 7.

Work Schedule of the Main Inspection/Restoration of the Kashiwazaki-Kariwa Nuclear Power Station in Response to the Niigata-Chuetsu-Oki Earthquake (during 4 Weeks) (3/3)

【Inspection/Restoration Status】

◆ From December 7th, 2008 (Sun) to January 3rd, 2009 (Sat)

System / Equipment	Items	Dec. 7th (Sun) to Dec. 13th (Sat)	Dec. 14th (Sun) to Dec. 20th (Sat)	Dec. 21st (Sun) to Dec. 27th (Sat)	Dec. 28th (Sun) to Jan. 3rd (Sat)	Status of Inspection / Restoration
Transformer (common) / Switch Yard	On-site check / inspection / restoration of the oil protection bank for the transformer					Unit No.1 Restoration work commenced on Oct. 4. Unit No.2 Preparation for restoration work commenced on May 20. Recovery of oil-contaminated soil commenced on Jul. 12. Unit No.3 Restoration work commenced on Aug. 2. Unit No.4 Preparation for restoration work completed on Dec. 10. Restoration work to be commenced on Dec. 11. <Work to be suspended from Dec. 27 to Jan. 5> Unit No.5 Restoration work commenced on Aug. 27. Scrubbing of soil contaminated by oil leakage commenced on Sep. 16.
Environmental Facilities	House boilers inspection					(Arahama-side) 1A Inspection to be conducted from Apr. 8 to July 2009. 2B Inspection commenced on Apr. 8. 3A Inspection completed on Dec. 8. (Ohminato-side) 4C Inspection to be conducted from May 26 to Dec. 17. <Work to be suspended from Dec. 27 to Jan. 4>
	Restoration work of filtrate tank / demineralized tank on Arahama-side					Preparation for restoration work of No.1 filtrate tank/demineralized tank commenced on Dec. 2. <Work to be suspended from Dec. 27 to Jan. 4>
Others	Restoration work for solid waste storage facility					Transportation of drums to temporary warehouse completed on Nov. 28. Preparation work for prevention countermeasure for drum fallin to be conducted from Nov. 29 to January 2009. <Work to be suspended from Dec. 27 to Jan. 4>
	Restoration work for administration building / information building, etc.					Repair work of the second floor and third floor of information building commenced on Oct. 14. <Work to be suspended from Dec. 27 to Jan. 4>
	Construction of seismic-isolated essential buildings					Construction commenced on Oct. 14. <Work to be suspended from Dec. 27 to Jan. 4>
	Outdoor fire protection system piping to be placed above ground, etc.					(Arahama-side) Work on installing fire protection system piping above ground commenced on Apr. 28. Replacement work on the fire protection system piping around the Arahama-side building from underground to above ground completed on Jun. 28. <Work to be suspended from Dec. 27 to Jan. 5>
	Relocation work of ground motion observation points					Boring work commenced on Oct. 20. <Work to be suspended from Dec. 27 to Jan. 6>
	Restoration and reinforcement work for the on-site / outside roads & slope, etc.					Restoration work for roads inside and outside of the site currently in progress. <Work to be suspended from Dec. 27 to Jan. 4>
	Restoration work for port facility					Restoration work for bank protection to be conducted from Apr. 3 to Dec. 12. The works to be suspended from Dec. 13 for the winter sesason, and to be restarted in March 2009.

※ Inspection results for each facilities will be announced as soon as they compiled.

※ Inspection and restoration work and execution date for each item may alter according to the situation.

※ Period to suspend the works for the year-end and new year recess.

* Turbine inspection work will be conducted as follows:

- All units will be inspected in detail by opening all turbine casings after conducting internal inspection.
- Internal inspection will be conducted by opening the high-pressure turbine and low-pressure turbine (A) and visually checking for damages or significant deformation in major components such as the casings and blades.
(For the unit No. 1, since the high-pressure turbine and low-pressure turbines (A) and (C) had been opened for regular outage at the time of the earthquake, inspections will be conducted for the low-pressure turbine (B) that had not been opened.)
- Detailed inspection includes, in addition to regular full-scope inspection, special inspection in consideration of the impact of the earthquake and necessary repairs in case damages are found.