

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 November 30th, 2008 (Sun) to December 27th, 2008 (Sat)

System / Equipment	Items	Nov. 30th (Sun) to Dec. 6th (Sat)	Dec. 7th (Sun) to Dec. 13th (Sat)	Dec. 14th (Sun) to Dec. 20th (Sat)	Dec. 21st (Sun) to Dec. 27th (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.	
	Other facilities	Submerged equipment inspection on ground floor 5 of the reactor combination building					Restoration work commenced on Mar. 17.
		House transformer inspection					1A, 1B On-site transportation completed on Jul. 9. Transportation into the factory completed on Nov. 24.
		Excitation transformer inspection					Transportation into the factory is underway.
		Main generator inspection					Inspection commenced on Feb. 7. Withdrawal of rotor completed on Mar. 5.
		Main exhaust duct inspection / restoration	▼				Preparation for restoration work commenced on Aug. 9. Restoration of substructure commenced on Dec. 1.
	Circulating water pipe inspection					Foundation improvement, excavating work, and inspection of pipes commenced on Aug. 6.	
Seismic reinforcement	Seismic reinforcement works for the roof truss of the reactor building		▼			Preparation for reinforcement work to be commenced on Dec. 11.	
Unit No.2	Reactor facilities	Reactor recirculation piping preventive maintenance				Preparation work to be commenced on Dec. 16.	
	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					On-site transportation completed on May 16. Transportation into the factory completed on Nov. 24.
		Main generator inspection					Inspection commenced on Mar. 19. Transportation of rotor into the factory completed on Aug. 22.
Main exhaust duct inspection / restoration	▼				Preparation for restoration work commenced on Aug. 9. Restoration of substructure commenced on Dec. 1.		
Unit No.3	Reactor facilities	Reactor recirculation piping preventive maintenance				Preparation work commenced on Jul. 14. Preventive maintenance commenced on Sep. 12. Ultrasonic testing commenced on Oct. 16.	
	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.)	
	Other facilities	Main transformer inspection					Transportation into the factory is underway.
		House transformer inspection					3A, 3B Installation work commenced on Nov. 18.
		Excitation transformer inspection					Installation work commenced on Nov. 18.
		Main generator inspection					Inspection commenced on Feb. 20. Rotor carrying in completed on Aug. 1.
		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 Jul. 23. Restoration of substructure to be commenced in late December.
	Circulating water pipe inspection					Foundation improvement, excavating work, and inspection of pipes commenced on Jun. 16.	
	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.
Unit No.4	Turbine facilities	Turbine inspection *				High-pressure turbine and low-pressure turbine (A) (B) (C) detailed inspection conducted from Jun. 19 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.
		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 stack radiation monitor sampling pipe completed on Nov. 20. (incl. restoration work of stack radiation monitor building.)
		Main exhaust duct inspection / restoration					Preparation for restoration work commenced on Jun. 23. Restoration of substructure commenced on Nov. 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 November 30th, 2008 (Sun) to December 27th, 2008 (Sat)

System / Equipment	Items	Nov. 30th (Sun) to Dec. 6th (Sat)	Dec. 7th (Sun) to Dec. 13th (Sat)	Dec. 14th (Sun) to Dec. 20th (Sat)	Dec. 21st (Sun) to Dec. 27th (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.
		500kV power cable inspection				Removal of cables commenced on Jun. 30.
		Main exhaust duct inspection / restoration				Preparation for restoration work commenced on Jun. 2. Restoration of substructure commenced on Nov. 20.
	Circulating water pipe inspection				Foundation improvement, excavating work, and inspection of pipes commenced on Oct. 25.	
Seismic reinforcement	Seismic reinforcement works for the roof truss of the reactor building				Preparation for reinforcement work to be commenced on Dec. 8.	
Unit No.6	Turbine facilities	Turbine inspection *				High-pressure turbine and low-pressure turbine (A) (B) (C) detailed inspection commenced on May 12.
	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.
		Main generator inspection				Inspection commenced on Mar. 10. Withdrawal of rotor completed on Apr. 3. Restoration work to be commenced on Dec. 13.
		Stack inspection				Inspection of outdoor duct to be commenced on Dec. 16 and Dec. 17.
	Seismic reinforcement	Seismic reinforcement works such as pipe supports				Reinforcement work commenced on Jul. 4.
		Seismic reinforcement works for reactor building overhead crane				Reinforcement work commenced on Oct. 31.
		Seismic reinforcement works for fuel handling machine				Reinforcement work commenced on Aug. 22.
Verification of system integrity	System functional test				System functional test commenced on Dec. 4. Functional test of the flammability control system to be conducted on Dec. 4 and Dec. 6. Functional test of stand-by liquid control system to be conducted on Dec. 5. Functional test of main steam isolation valve to be conducted on Dec. 7. Functional test for main control room emergency circulation system to be conducted on Dec. 10. Functional test for DC power source system to be conducted on Dec. 10. Interlock functional test for liquid waste storage facility and disposal equipment #1 to be conducted on Dec. 11.	
Unit No.7	Reactor facilities	Reactor pressure vessel closure				Closure work completed on Nov. 28.
		Reactor containment vessel closure				Closure work to be conducted 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) (C) 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.
	Other facilities	Reactor internal pump input transformer inspection				Electrical testing completed on Jun. 7. Energization for testing without load completed on Nov. 20.
		Main generator inspection				Restoration work commenced on Jul. 14.
		Stack inspection				Inspection of outdoor duct to be conducted from Dec. 5 to Dec. 8.
	Verification of system integrity	System functional test				System functional test commenced on Sep. 18. Functional test of control rod drive mechanism conducted on Nov. 28. Reactor containment vessel leak-rate inspection to be conducted on Dec. 4 and Dec. 5. Inspection of the reactor building airtightness to be conducted on Dec. 7. Interlock functional test for reactor protection system (Interlock system for turbine facilities) to be conducted on Dec. 9.

### 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 November 30th, 2008 (Sun) to December 27th, 2008 (Sat)

System / Equipment	Items	Nov. 30th (Sun) to Dec. 6th (Sat)	Dec. 7th (Sun) to Dec. 13th (Sat)	Dec. 14th (Sun) to Dec. 20th (Sat)	Dec. 21st (Sun) to Dec. 27th (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 to be conducted from Sep. 2 to Dec. 10. Restoration work to be commenced on Dec. 11. 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 commenced on Sep. 9. (Ohminato-side) 4C Inspection commenced on May 26.
	Restoration work of filtrate tank / demineralized tank on Arahama-side	▶	▶			
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.
	Restoration work for administration building / information building, etc.	▶				Repair work of the second floor and third floor of information building commenced on Oct. 14.
	Construction of seismic-isolated essential buildings	▶				Construction commenced on Oct. 14.
	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.
	Relocation work of ground motion observation points	▶				Boring work commenced on Oct. 20.
	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.
	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.

\* 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.