

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 February 24th, 2008 (Sun) to March 22nd, 2008 (Sat)

System/Equipment	Items	Feb. 24th (Sun) to Mar. 1st (Sat)	Mar. 2nd (Sun) to Mar. 8th (Sat)	Mar. 9th (Sun) to Mar. 15th (Sat)	Mar. 16th (Sun) to Mar. 22nd (Sat)	Status of Inspection/Restoration
Unit No.1	Reactor facilities	Refueling floor service tools inspection (stud tensioners, etc.)				Inspection completed on Feb. 19.
		Reactor pressure vessel inspection	[Gantt bar from Feb 24 to Mar 7]			Inspection of nozzle parts etc. planned from Jan. 10 to Mar. 7.
		Pressure suppression chamber inspection	[Gantt bar from Feb 24 to Mar 1]			Inspection planned from Jan. 28 to Mar. 1.
		Fuel / control rod inspection <sup>φ</sup>	[Gantt bar from Feb 28 to Mar 1]			Inspection of spent fuel pool rack etc. to be planned on Feb. 28 and Feb. 29. Visual inspection of fuels to be commenced in late April. Visual inspection of channel boxes to be commenced in late April. Visual inspection of control rod completed on Feb. 22.
	Turbine facilities	Turbine internal inspections <sup>φ</sup>				Low pressure turbine (B) internal inspection completed on Nov. 30.
	Other facilities	Submerged equipment inspection on ground floor 5 of the reactor combination building	[Gantt bar from Feb 24 to Mar 22]			Provisional restoration of low conductivity waste system (A) completed on Oct. 15, and (B) completed on Dec. 17. Provisional restoration of high conductivity waste system (A) completed on Nov. 9, and (B) completed on Dec. 26. Provisional restoration of storm drain system (B) completed on Dec. 18, and (A) completed on Dec. 25. Restoration work to be commenced in mid-March.
		Main transformer inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Nov. 23. Preparation for transportation into the factory conducted from Oct. 29 to Dec.28. Coordinating for the start date of transportation.
		House transformers inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			1A Inspection completed on Sept. 4. 1B Inspection completed on Oct. 12. Coordinating for the start date of transportation into the factory.
		Excitation transformers inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Oct. 18. Coordinating for the start date of transportation into the factory.
		Main generator inspection	[Gantt bar from Feb 24 to Mar 7]			Inspection commenced on Feb. 7.
Stack inspection					[Gantt bar from Mar 16 to Mar 22]	Inspection for substructure of piles to be commenced in mid-March.
Unit No.2	Reactor facilities	Pressure suppression chamber inspection preparation inspection			[Gantt bar from Mar 9 to Mar 18]	Preparation for inspection planned from Mar. 12 to Mar. 18. Inspection planned from Mar. 19 to late April.
		Fuel / control rod inspection <sup>φ</sup>		[Gantt bar from Mar 9 to Mar 18]		Visual inspection of fuels completed on Feb. 1. Visual inspection of channel boxes completed on Feb. 12. Inspection of control rod planned from Nov. 27 to mid-March.
	Turbine facilities	Turbine internal inspections <sup>φ</sup>				High pressure turbine and low pressure turbine (A) internal inspection completed on Dec. 21.
	Other facilities	Main transformer inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Nov. 28. Preparation for transportation into the factory planned from Nov. 1 to Dec. 28, and Feb. 12 to Mar. 7. Coordinating for the start date of transportation.
		House transformers inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			2A Inspection completed on Nov. 13. 2B Inspection completed on Nov. 19. Coordinating for the start date of transportation into the factory.
		Excitation transformers inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Dec. 6. Coordinating for the start date of transportation into the factory.
		Main generator inspection				[Gantt bar from Mar 16 to Mar 22]
	Unit No.3	Reactor facilities	In-core inspection			
Reactor pressure vessel inspection preparation inspection						Preparation for inspection of nozzle parts etc. completed on Feb. 21. Inspection of nozzle parts etc. completed on Feb. 22.
Pressure suppression chamber inspection preparation inspection						Preparation for inspection planned from Mar. 26 to Mar. 31. Inspection to be commenced in early April.
Fuel / control rod inspection <sup>φ</sup>			[Gantt bar from Feb 24 to Mar 22]			Visual inspection of fuels to be commenced in mid-March. Visual inspection of channel boxes to be commenced in mid-March. Visual inspection of control rod commenced on Feb.25.
Turbine facilities		Turbine internal inspections <sup>φ</sup>		[Gantt bar from Mar 2 to Mar 8]		Low pressure turbine (B) (C) detailed inspection to be commenced on Mar. 7.
Other facilities		Main transformer inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Oct. 26. Preparation for transportation into the factory completed on Nov. 26. Coordinating for the start date of transportation.
		House transformers inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			3A. Inspection completed on Oct. 22. Preparation for transportation into the factory planned from Feb. 20 to Mar. 12. * 3B Transportation completed on Sept. 20.
		Excitation transformers inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Nov. 3. Preparation for transportation into the factory to be commenced on Mar. 12.
		Main generator inspection	[Gantt bar from Feb 24 to Mar 7]			Inspection commenced on Feb. 20.
		Stack inspection				[Gantt bar from Mar 16 to Mar 22]
	Unit No.4	Reactor facilities	Reactor pressure vessel inspection			
Pressure suppression chamber inspection preparation inspection			[Gantt bar from Feb 24 to Mar 1]			Preparation for inspection completed on Feb. 25. Inspection planned from Feb. 26 to Mar. 17.
Fuel / control rod inspection <sup>φ</sup>					[Gantt bar from Mar 16 to Mar 22]	Visual inspection of fuels to be commenced in late March. Visual inspection of channel boxes to be commenced in late March. Visual inspection of control rod to be commenced in early April.
Turbine facilities		Turbine internal inspections <sup>φ</sup>				High pressure turbine and low pressure turbine (A) internal inspection completed on Dec. 14.
Other facilities		Main transformer inspection (preparation for transportation into the factory)	[Gantt bar from Feb 24 to Mar 7]			Inspection completed on Dec. 13. Preparation for transportation into the factory conducted from Dec. 14 to Dec. 27. Coordinating for start date of transportation.
		House transformers inspection	[Gantt bar from Feb 24 to Mar 7]			4A, 4B Coordinating for the start date of inspection.
		Excitation transformers inspection	[Gantt bar from Feb 24 to Mar 7]			Coordinating for the start date of inspection.
	Main generator inspection	[Gantt bar from Feb 24 to Mar 7]			Inspection commenced on Jan. 15. Withdrawal of the rotor planned on Feb. 14.	

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 February 24th, 2008 (Sun) to March 22nd, 2008 (Sat)

System/Equipment	Items	Feb. 24th (Sun) to Mar. 1st (Sat)	Mar. 2nd (Sun) to Mar. 8th (Sat)	Mar. 9th (Sun) to Mar. 15th (Sat)	Mar. 16th (Sun) to Mar. 22nd (Sat)	Status of Inspection/Restoration	
Unit No.5	Reactor facilities	Jet pump inspection	▼			No.1 Visual inspection to be conducted on Jan. 18 prior to disassembly. No.1 disassembly to be conducted from Feb. 26 to Feb. 29.	
		Fuel / control rod inspection <sup>Ⓐ</sup>	▶				Visual inspection of fuels planned from Feb. 14 to mid-March. Visual inspection of channel boxes planned from Feb. 15 to late March. Visual inspection of control rod to be commenced in late March.
		Inspection of reactor recirculation piping applicable to the Fitness-for-Service rule	▼		▶		Ultrasonic testing planned from Feb. 25 to mid-March.
	Turbine facilities	Turbine internal inspections <sup>Ⓐ</sup>					High pressure turbine and low pressure turbine (A) internal inspection completed on Dec. 14.
	Other facilities	Main transformer inspection (preparation for transportation into the factory)					Inspection completed on Nov. 29. Preparation for transportation into the factory conducted from Nov. 30 to Dec. 25. Coordinating for the start date of transportation into the factory.
		House transformers inspection (oil extraction / internal inspection)	preparation	▶			5A Preparation for inspection completed on Feb. 24. 5B Preparation for inspection planned from Feb. 27 to Feb. 29.
			inspection	▶			5A Internal inspection completed on Feb. 26. 5B Internal inspection planned from Mar. 1 to Mar. 3.
		(preparation for transportation into the factory)	preparation	▶			5A, 5B Preparation for transportation into the factory planned from Mar. 4 to Mar. 8.
		Excitation transformers inspection (oil extraction / internal inspection)	preparation	▶			
	Main generator inspection		▶				Inspection commenced on Nov. 3. Transportation of rotor into the factory completed on Dec. 1.
Unit No.6	Reactor facilities	Pressure suppression chamber inspection	▶				Inspection planned from Feb. 7 to Mar. 8.
		Fuel / control rod inspection <sup>Ⓐ</sup>	▶				Visual inspection of fuels planned from Feb. 13 to mid-March. Visual inspection of channel boxes planned from Feb. 16 to mid-March. Visual inspection of control rod planned from Feb. 1 to mid-March.
	Turbine facilities	Turbine internal inspections <sup>Ⓐ</sup>					High pressure turbine and low pressure turbine (A) internal inspection completed on Oct. 25.
	Other facilities	Main transformer inspection					Transportation into the factory completed on Oct. 31.
		House transformers inspection	▶				6A, 6B Preparation for carrying in completed on Feb. 27.
		Reactor internal pump input transformer inspection	▶		▶		Two units preparation for carrying in planned from Feb. 26 to Mar. 15. (total of 4 units).
		Main generator inspection	▶				Inspection to be commenced on Mar. 10.
		500kV power cable (OF cable) inspection	▶				Inspection commenced on Feb. 9.
		Discharge canal inspection / restoration	preparation	▶			Discharge canal underwater inspection completed on Oct. 10. Preparation for restoration work completed on Feb. 25.
			inspection	▶		▶	
Stack inspection		▶				Detailed inspection for top of stack to be commenced on Mar. 10.	
Unit No.7	Reactor facilities	Pressure suppression chamber inspection				preparation inspection	Preparation for inspection of reactor pressure vessel completed on Feb. 7. Inspection completed on Feb. 23.
		Fuel / control rod inspection <sup>Ⓐ</sup>	▶				Visual inspection of fuels completed on Feb. 15. Visual inspection of channel boxes completed on Feb. 22. Visual inspection of control rod completed on Feb. 22.
		Reactor-well inspection	▶		▶		Inspection and provisional restoration completed on Nov. 15. (Vacuum work is still underway) Repair of lining completed on Feb. 26. Repair of leakage to be confirmed on Mar. 14 and Mar. 15 when the reactor well would be filled up with water.
		Reactor core isolation cooling system inspection	▶				Inspection of pumps planned from Jan. 14 to Mar. 20. Turbine inspection planned from Feb. 14 to Mar. 26.
	Turbine facilities	Turbine internal inspections <sup>Ⓐ</sup>	▶				High pressure turbine and low pressure turbine (A) (B) (C) detailed inspection commenced on Dec. 1.
	Other facilities	Main transformer inspection	▶				Preparation for carrying in to be commenced on Mar. 10.
		House transformers inspection	▶				7A, 7B Carrying in (from unloading to temporary installation) planned on Mar. 17.
		Reactor internal pump input transformer inspection	▶				Two units carrying in (from unloading to temporary installation) planned on Mar. 17. (total of 4 units).
		Main generator inspection	▶				Inspection commenced on Nov. 2. Withdrawal of the rotor completed on Nov. 20.
		500kV power cable (OF cable) inspection	▶				Inspection to be commenced on Jan. 22. Energization for testing without load planned from Mar. 8 to Mar. 22.
Discharge canal inspection / restoration		preparation	▶			Discharge canal underwater inspection completed on Oct. 10. Preparation for restoration work completed on Feb. 25.	
	inspection	▶		▶		Internal inspection of discharge canal commenced on Feb. 26. Maintenance work to be commenced on Mar. 10.	

**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 February 24th, 2008 (Sun) to March 22nd, 2008 (Sat)

System/Equipment	Items	Feb. 24th (Sun) to Mar. 1st (Sat)	Mar. 2nd (Sun) to Mar. 8th (Sat)	Mar. 9th (Sun) to Mar. 15th (Sat)	Mar. 16th (Sun) to Mar. 22nd (Sat)	Status of Inspection/Restoration
Transformer (common) / Switch Yard	High-voltage start-up transformer #1 inspection					Work for installation commenced on Dec. 7. In operation on Feb. 27.
	High-voltage start-up transformer #3 inspection					Preparation for inspection to be commenced on Mar. 14.
	On-site check / inspection / restoration of the oil protection bank for the transformer					Unit No.7 Restoration work commenced on Dec. 25. Unit No. 7 Foundation repair work commenced on Feb. 20. (Pile drive works.) Unit No.3 Preparation for restoration work commenced on Feb. 12.
Environmental Facilities	Inspection of house boilers					House boiler (Arahama-side) 1A, 2A, 2B. Inspection underway. (Ohimato-side) 4A. Inspection underway. 4B. Inspection completed on Oct. 23.
	Restoration work for filtrate tank #3, #4					Preparation for restoration work to be commenced on Mar. 3. No.4 Preparation for restoration work to be commenced on Mar. 16.
Others	Restoration work for Solid Waste Storage Facility					Drum soundness verification work commenced on Oct. 9. Drums to be transferred to temporary warehouse from Feb. 6.
	Restoration work for administration building / information building, etc.					Repair work of the second floor of the administrative building, and the first and second floors of information building is underway.
	Restoration work for the on-site / outside roads & slope, etc.					Restoration of the slope completed on Oct. 22. Restoration work for roads inside and outside of the site currently in progress.
	Outdoor fire protection system piping to be placed above ground, installation of fire protection tank, etc.					Site inspection commenced on Dec. 25. Installation of fire protection tank to be commenced on Feb. 19 (17 tanks).
	Pre-construction geological survey for seismic-isolated essential buildings					Survey completed on Feb. 23.
	Inspection of spent fuel transportation cask					Inspection to be commenced on Feb. 5.
	Restoration work for port facility					Preparation for restoration work to be commenced on Mar. 3. Restoration works on the wharf to be commenced on Mar. 10. South-side discharge canal sea water monitor to be transferred from Mar. 17 to 31.

※ 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.

\*1 Phase 1: Inspection for the upper part of reactors, Phase 2 Inspection for the middle part (reactor core) of the reactor, Phase 3 Inspection for the bottom part of the reactor.

\*2 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.

\*3 Fuels and control rods were inspected visually by either underwater cameras or fiberoptics.

"Fuel visual inspection": Representative fuels that had been withdrawn will be inspected. The number of fuel bundles and fuel rods to be inspected differ among units based on the type of fuels and the size of three reactor core of each unit.

"Channel box visual inspection": Channel boxes adjacent to those control rods subject to inspection will be inspected.

For unit 1, since all fuels and channel boxes were placed in the spent fuel pool at the time of the earthquake, channel boxes that housed fuels that were subject to inspection will be inspected.

"Control rod visual inspection": Representative control rods that had been withdrawn will be inspected. The number of control rods to be inspected differ among units based on the type of fuels and the size of three reactor core of each unit.