Appendix 4: < Photos > Other Topics (June 2012)

Current Conditions of Unit 1-4 Seawater Heat Exchanger Building

Seawater Heat Exchanger Building is where the equipments producing cooling water by heat exchange utilizing seawater are installed. The produced cooling water is used for the equipments/facilities in the Reactor Building, Turbine Building and Radiation Waste Treatment Building. Due to the Tsunami accompanying the Tohoku-Chihou-Taiheiyou-Oki Earthquake, the basement and the first floor of Unit 1-4 Seawater Heat Exchanger Building were flooded. (At Unit 1, the second floor of the north wing was also flooded.) Since the building was flooded, almost all the emergency component cooling system pumps* (excluding some at Unit 3) became temporarily unavailable. For Unit 4, all the equipments/facilities necessary for maintaining the cold shutdown state have been restored on May 17, 2012. Water-tight work was completed for the Seawater Heat Exchanger Building of all units (Equipment hatch and pipe penetration areas where the Tsunami water flowed in) on March 31, 2012. *Emergency component cooling system pumps: Residual heat removal system cooling system pumps (A, B, C, D), emergency diesel generator cooling system pumps (A, B), High-pressure reactor core spray system component cooling water pump, High-pressure reactor core spray system component cooling seawater pump.



^{*}O.P.: Onahama Port Standard Construction Level which is 0.727m below the Tokyo Bay average sea level (T.P.)



Main equipments (residual heat removal system) in the Seawater Heat Exchanger Building: Conditions right after the Tsunami and current conditions

		Unit 1		Unit 2		Unit 3		Unit 4	
Equipment	System	Right after Tsunami	End of June 2012						
Residual heat removal system cooling	А	×		×		×		×	
	В	×		×				×	
	С	×		×		×		×	
	D	×		×				×	
Residual heat removal system seawater cooling	А	×		×		×		×	
	В	×		×				×	
	С	×		×		×		×	
	D	×		×				×	
Emergency diesel generator system cooling	A	×		×		×		×	
	В	×		×				×	

[Legend] : Restored : Available : Under suspension for spare generator x : Unavailable

Restoration status of the equipments in Unit 4 Seawater Heat Exchanger Building based on the restoration plan

For Unit 4, all the equipments/facilities necessary for maintaining the cold shutdown state have been restored on May 17, 2012. (As announced on May 31, 2012)



Unit 4 Seawater Heat Exchanger Building 1st Floor after restoration (Photo taken on June 30, 2012)



Power panel (P/C 4D-2) (Photo taken on June 18, 2012)

The power panel damaged by the Tsunami was replaced with a newly manufactured power panel (P/C 4D-2). Restoration completed on May 16, 2012.



Electric motor of the emergency diesel generator system cooling (B system) (Photo taken on June 18, 2012) The power supply for the emergency diesel generator system cooling (C system) was switched from a temporary power supply to the permanent power panel (P/C 4D-2). Restoration completed on May 16, 2012.

(Cont'd) Restoration status of the equipments in Unit 4 Seawater Heat Exchanger Building based on the restoration plan



Electric motor of the residual heat removal system cooling (C system) (Photo taken on June 7, 2012) The power supply for the residual heat removal system cooling (C system) was switched from a temporary power supply to the permanent power panel (P/C 4C-2). Restoration completed on May 15, 2012.



Electric motor of the residual heat removal system seawater cooling (A system) (Photo taken on June 18, 2012) The power supply for the residual heat removal system seawater cooling (A system) was switched from a temporary power supply to the permanent power panel (P/C 4C-2). Restoration completed on May 15, 2012.

Unit 1-4 Seawater Heat Exchanger Building: Conditions right after the Tsunami and current conditions



Air conditioning duct on the 1st floor of Unit 1 Seawater Heat Exchanger Building (Photo taken on March 16, 2011)



Air conditioning duct on the 1st floor of Unit 1 Seawater Heat Exchanger Building Restoration completed with the damaged parts replaced/repaired (Photo taken on June 18, 2012)



Reactor component cooling system pump (B) on the basement of Unit 4 Seawater Heat Exchanger Building (Photo taken on March 23, 2011)



Reactor component cooling system pump (B) on the basement of Unit 4 Seawater Heat Exchanger Building Restoration completed (Cleaning and inspection were done) (Photo taken on June 18, 2012)

(Cont'd) Unit 1-4 Seawater Heat Exchanger Building: Conditions right after the Tsunami and current conditions



Unit 4 residual heat removal system cooling (C system) on the 1st floor of Unit 4 Seawater Heat Exchanger Building (Photo taken on March 13, 2011)



Unit 4 residual heat removal system cooling (C system) on the 1st floor of Unit 4 Seawater Heat Exchanger Building Electric motor repair and floor cleaning have been completed (Photo taken on June 7, 2012)



Between Unit 3-4 Seawater Heat Exchanger Buildings (Outside) (Photo taken on March 16, 2011)



Between Unit 3-4 Seawater Heat Exchanger Buildings (Outside) Debris removal completed (Photo taken on June 21, 2012)



Unit 1 power panel (P/C 1D-2) on the 1st floor of Unit 1 Seawater Heat Exchanger Building (Photo taken on March 13, 2011)



Unit 1 power panel (P/C 1D-2) on the 1st floor of Unit 1 Seawater Heat Exchanger Building Currently in the process of installing the newly manufactured power panel (Photo taken on June 18, 2012)

Water-tight work completed for Unit 1-4 Seawater Heat Exchanger Building

On March 31, 2012, water-tight work was completed for Unit 1-4 Seawater Heat Exchanger Building (equipment hatch, pipe penetration areas of the building, etc.) which was damaged by the Tsunami accompanying the Tohoku-Chihou-Taiheiyou-Oki Earthquake (As announced on April 3, 2012). The water-tight work included such as installing robust doors, filling the equipment hatch gaps with sealant and filling the gaps between the walls and the pipes penetrating through the walls with sealant.



Water-tight work implemented on the equipment hatch (Photo taken on March 23, 2012)



Filling sealant in the gap between the equipment hatch and its lid (Photo taken on March 23, 2012)