

	FY2011				FY2012				FY2013			
	Apr. - June	July - Sept.	Oct. - Dec.	Jan. - Mar.	Apr. - June	July - Sept.	Oct. - Dec.	Jan. - Mar.	Apr. - June	July - Sept.	Oct. - Dec.	Jan. - Mar.
Flooding prevention measures 1 (prevent flooding on station site)												
◆ Flooding prevention measures Build sea wall on seaward side of station site	▼ Apr. 5 Begin (subsurface exploration, surveying, moving obstacles, etc.) Study and preparation work				▼ Nov. 8 Complete							
Build up dune embankment and east-west embankment at front of station site					▼ Sept. 22 Begin Main preparation work (installing steel sheet piles, removing obstacles, stabilizing soil, etc.)				▼ Apr. 21 Complete Complete setup of above-ground wall (scheduled)			
◆ Overflow countermeasures Set up water barriers in seawater intake pump area Close discharge pit, discharge channel opening	▼ Apr. 5 Begin Nos. 3, 4 Set up Nos. 3, 4, 5 water barriers				▼ Jan. 11 Begin No. 5				Build embankment (dune embankment) Build embankment (east-west embankment) Incidental work (rust prevention) Embankment building complete (scheduled) Incidental work (surface protection)			
Flooding prevention measures 2 (prevent flooding in buildings)												
◆ Maintain seawater cooling function Set up emergency seawater intake system (EWS)					▼ Oct. 13 Begin Preparation work							
Measures to keep flotsam out of water intake tanks					▼ Jan. 28 Begin excavating for No. 5 pump chamber ▼ Dec. 6 Begin excavating for No. 4 pump chamber ▼ Nov. 24 Begin excavating for No. 3 pump chamber Set up new pump chamber (civil engineering work)				Install pumps, pipes, etc. (mechanical and electrical work) ▲ June 30 Begin No. 3 mechanical and electrical work ▲ July 12 Begin No. 4 mechanical and electrical work ▲ July 17 Begin No. 5 mechanical and electrical work Test (temporary power supply) Test (Power supply on high ground)			
◆ Prevent flooding in buildings Enhance reliability of waterproof doors in outer walls of buildings	▼ May 16 Begin ▼ May 31 Complete measures to prevent flooding from Nos. 3-5 reactor building waterproof doors, etc.				▼ Jan. 7 Begin Enhance reliability of waterproof doors				Measures to keep flotsam out			
Measures to prevent flooding from building outer walls' air supply/vents (openings)	▼ May 2 Begin ▼ May 31 Complete measures to prevent flooding from Nos. 4, 5 reactor buildings (air supply/vents)								Measures to prevent flooding from building outer walls' air supply/vents (openings) (concerning heat exchanger)			
Measures to prevent flooding from building through-ways (improve seal)	▼ May 2 Begin ▼ May 31 Complete measures to prevent flooding from Nos. 3-5 reactor building pipe-through								Measures to prevent flooding from building through-ways (improve seal)			
Close underground pipe/duct inspection openings, entry doors									Close underground pipe/duct inspection openings, entry			
Strengthen building structure (Nos. 4, 5 seawater heat exchanger buildings)	▼ July 26 Begin ▼ Aug. 31 Complete measures to prevent flooding from heat exchanger building equipment hatch								▼ June 11 Begin Nos. 4, 5 Measures to prevent flooding at outer walls of heat exchanger buildings, strengthen building			
◆ Equipment room flooding prevention Strengthen building drainage measures (set up drainage pumps)									Install drainage pump, pipe, etc.			
Reinforce already installed watertight doors and add new ones					▼ Mar. Begin Reinforce already installed watertight doors and add new ones							
Measures to prevent flooding from equipment room through-ways (improve seal)									Measures to prevent flooding from equipment room through-ways (improve seal) (by setting up power panels, etc., on upper floors and high ground)			

Overall Schedule for Tsunami Countermeasures Work at Hamaoka Nuclear Power Station (2/2)

	FY2011				FY2012				FY2013			
	Apr. - June	July - Sept.	Oct. - Dec.	Jan. - Mar.	Apr. - June	July - Sept.	Oct. - Dec.	Jan. - Mar.	Apr. - June	July - Sept.	Oct. - Dec.	Jan. - Mar.
Enhancement of emergency measures												
◆ Power supply equipment measures												
Set up gas turbine generators on high ground	▼ Apr. 20 Arrange for gas turbines				▼ Mar. 26 Bring in 3 gas turbine generators; Mar. 27 Conduct site receiving tests				Test			
	Build gas turbine generators and fuel tanks (at factory)				Gas turbine building (seismic base isolation) work				Install equipment			
Set up power panels, etc., on upper floors and high ground	▼ Nov. 21 Begin high ground forming				▼ May 31 Complete				Comprehensive testing			
					Build electrical devices/panels, etc. (at factory)				*1 Combined testing with gas turbine generator			
					Electrical goods building work				Test			
					Power panel installation							
Set up emergency generators on building rooftops	▼ June 24 Complete installation to intermediate rooftops of Nos. 1-5 reactor buildings											
	Install on building rooftop											
Secure spare storage batteries					▼ Oct. 21 Arrange for spare storage batteries							
					Secure and install spare storage batteries							
◆ Water injection equipment measures												
Secure equipment cooling substitutes to enable high-pressure coolant injection system to operate					▼ Feb. 14 Arrange for air-cooled heat exchangers				Test			
					Build air-cooled heat exchangers (at factory)							
					Installation of air-cooled heat exchangers, pumps, pipes, etc.							
Secure water supply with portable power pumps	▼ Apr. 20 Completed deployment of portable power pump											
	Install on building rooftop											
Diversify water supply (increase water tanks)					▼ Nov. 28 Begin high ground forming				▼ Apr. 30 Complete			
					Set up water tank on high ground, install pumps, pipes, etc.				Test			
Diversify water intake sources (take water from Niino River)									Deploy water intake equipment (hydrosub)			
Seismically reinforce make-up water system, install new water injection pipes									Seismic reinforcement, addition of water injection equipment			
									Test			
◆ Heat-shedding equipment measures												
Enable remote operation of containment vessel vents									Enable remote operation of vents			
Set up nitrogen cylinders to operate containment vessel vent valves	▼ Apr. 20 Completed deployment of nitrogen cylinders on											
	Install on building rooftop											
Secure spare RCWS, RCCW and RHR pumps and electric motors	▼ July 29 Arrange for spare equipment				▼ Nov. 18 Deploy No. 5 RCWS spare equipment							
					Build spare equipment at factory, deploy on site							
Secure underwater pumps (substitutes for RCWS pumps)									Deploy underwater pump			
◆ Other												
Deploy heavy equipment (bulldozers, etc.)	▼ June 1 Completed deploying heavy equipment (bulldozers, etc.)											
	Install on building rooftop											
Set up emergency supplies warehouse on high ground					▼ Nov. 21 Begin high ground forming				▼ May 31 Complete			
					Set up emergency supplies warehouse							
Enhance reliability of external power supply									Increase power receiving circuits at No. 5			
Increase No. 5 power receiving circuits (from 2 to 3 lines)												
Replace transmission tower support insulators					▼ Oct. 31 Begin							
					Replace support insulators							
					▲ Dec. 20 Complete							
Set up power receiving transformers on high ground					▼ Apr. 25 Begin				▼ Connect to power supply on high ground			
					Set up power receiving transformers on high ground				Connect			
									Test			
Set up mobile transformers					▼ Nov. 29 Complete bringing in major supplies to Shin-Sakura Substation, etc.				▼ Dec. 2012 Deploy at 500 kV switching station (scheduled)			
					Set up mobile transformers on high ground				1 (part connecting to power supply on high ground not yet			
									Connect			
									Test			
Reinforce power receiving routes from general on-grounds wiring					▼ Feb. 29 Begin				▼ Usable from Jan. 2013 (scheduled)			
					Reinforce power receiving routes for general on-grounds wiring				1 (part connecting to power supply on high ground not yet complete)			
									Connect			
									Test			