Status of Response to Damage to Main Condenser Tubes in Hamaoka Nuclear Power Station Reactor No. 5

Attachment

On May 14, 2011, main condenser tubes in Reactor No. 5 were damaged during the cold shutdown process following the shutdown of the reactor, allowing seawater to flow into the system. We are therefore proceeding with salt removal procedures and inspecting all of the affected equipment.

1 Salt removal

(1) Reactor system

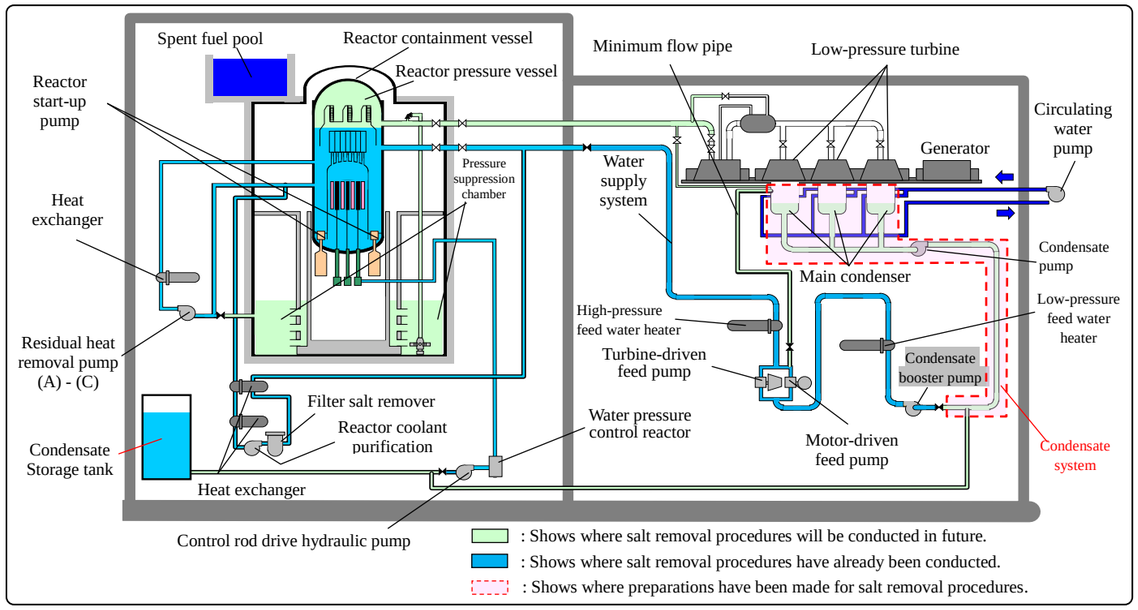
Salt is being removed from the interior of the reactor using the reactor coolant purification system, and concentrations have dropped to a level below the limit figure for reactor operation (a chloride ion concentration of 0.1 ppm or below). Water with a high chloride ion concentration in devices and pipes connected to the reactor has been replaced by desalinated water.

In addition, the water was removed from the condensate storage tanks,[*1] and the interior walls of the tank were inspected.

*1 The condensate storage tanks store water essential for plant operation. This water contains slight amounts of radioactive materials. The tank is also used as a water source for the emergency core cooling system.

(2) Turbine system

In the case of the feed water system, water containing salt was sent to the main condenser, and replaced with desalinated water. In the case of the condensate system, water containing salt will be sent to the main condensers and the system will be decontaminated using newly positioned salt removal equipment.



< Status of contamination of main equipment for Reactor No. 5 >

Name of system	Main material	Concentration of chloride ions		Method of decontamination
		At time incident occurred	Present status	
Reactor chamber	Stainless steel	Approx. 410 ppm	Approx. 0.001 ppm	Decontamination using reactor coolant purification system (Completed)
Pressure suppression chamber	Stainless steel	Approx. 1 ppm	Approx. 44 ppm[*2]	Discharge to liquid waste treatment system (Scheduled for future date)
Condensate storage tank	Stainless steel	Approx. 430 ppm	Water being removed	Decontamination by discharge to liquid waste treatment system (Completed)
Feed water system	Stainless steel Carbon steel	Approx. 4,700 ppm	Approx. 65 ppm	Sent to main condensers; filling the system with desalinated water (Completed)
Condensate system	Carbon steel	Approx. 4,700 ppm	Approx. 6,000 ppm	Sent to main condensers (Scheduled for future date)

【For reference: The chloride ion concentration of seawater is approximately 19,000 ppm】

*2 Following the incident, the concentration of the pressure suppression chamber increased due to the use of the water in the pressure suppression chambers for dilution in order to remove salt from the interior of the reactor.

2 Status of inspection of condensate storage tanks

From October 2011, the water (approximately 1,900 m^3) in the tank was discharged and a visual inspection of the inner walls of the tank was conducted. This inspection revealed holes in 40 places in the welded areas or close to welded areas of the inner walls (Maximum size: Oval-shaped holes of approx. 6 mm × approx. 5 mm). None of these holes penetrated the walls, and there were no leaks to the exterior.

The causes of these holes will be investigated, and the affected sections repaired, at a later date.

3 Status of positioning of salt removal equipment

A plan was formulated for the placement of salt removal equipment for the purification of the condensate system, and the Minister of Economy, Trade and Industry was notified of this plan on December 6, 2011, in accordance with Article 48 of the Electricity Business Act. Work was commenced on December 20.

Salt removal procedures are scheduled to be commenced in May 2012, when the positioning of the equipment is completed.

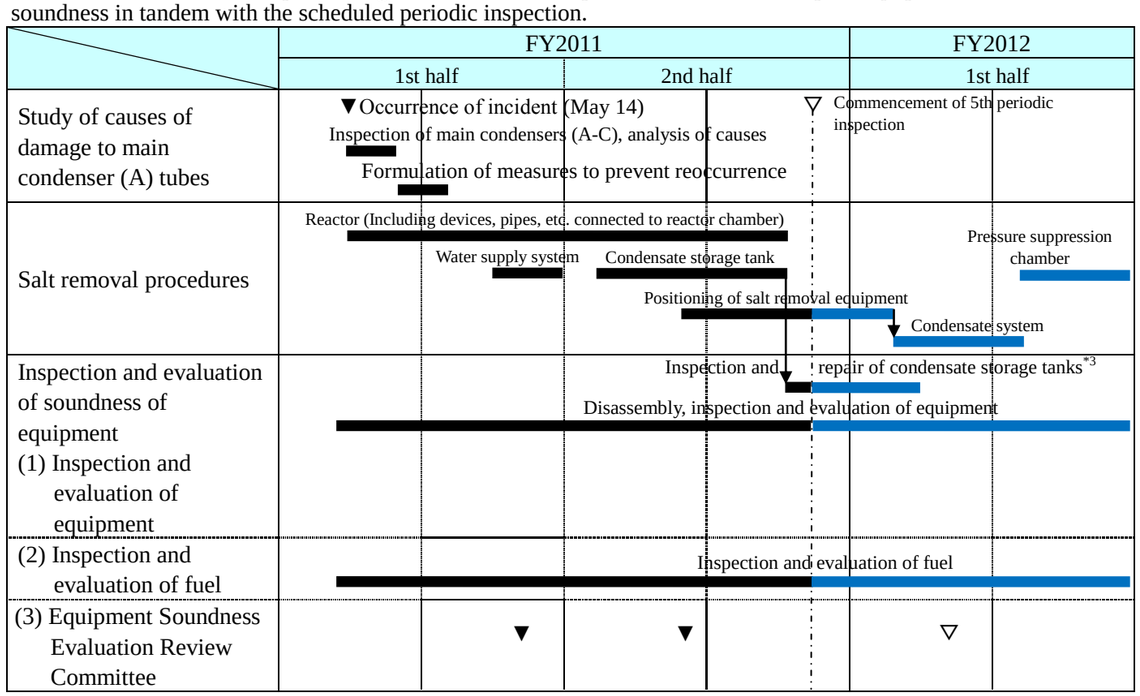
Positioning of dam to prevent spread of leak

Positioning of salt removal equipment

4 Future measures

Because the recovery of condensate storage tank function is essential to the process of opening the reactor and removing the fuel, this process will not be commenced until after the tanks are repaired.

In future, in addition to proceeding with salt removal procedures, we will inspect equipment and evaluate its soundness in tandem with the scheduled periodic inspection.



*3 The reactor will be opened and the fuel removed following repair of the condensate storage tanks