

Inspection of the Structures inside Unit 4 Reactor

The seismic response analysis results based on the observation record of the Tohoku-Chihou-Taiheiyou-Oki Earthquake in 2011 indicate that the structures inside Units 1-4 RPV were evaluated to maintain sufficient safety functions. (Previously announced on August 18, 2011)

From November 27, 2012, the structures inside Unit 4 reactor (representative unit) for which opening of the reactor and fuel removal have been completed are being visually inspected for the purpose of obtaining more information on seismic impact. (Previously announced on November 26, 2012)

Structures inspected

1. Steam dryer*1

Stainless steel equipment which dries and transfers the steam (separated by the steam-water separator) to the turbine.

2. Steam-water separator*1

Stainless steel equipment which separates moisture from the mixture of boiled steam and water.

3. Upper grid plate

Equipment made of stainless steel plates put together in a grid-like formation which supports and guides the fuel, control rods, etc. in a horizontal direction.

4. Shroud support

Equipment made of high nickel alloy cylinder and circular disc which supports the core shroud, fuel, etc.

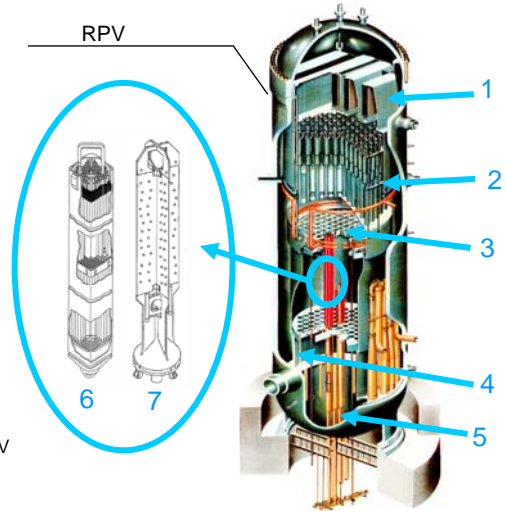
5. Control rod drive mechanism housing

Cylindrical shape equipment made of stainless steel welded onto the bottom of the RPV which stores the control rod drive mechanism and supports the fuel, control rods, etc.

6. Fuel assembly*2

7. Control rod*2

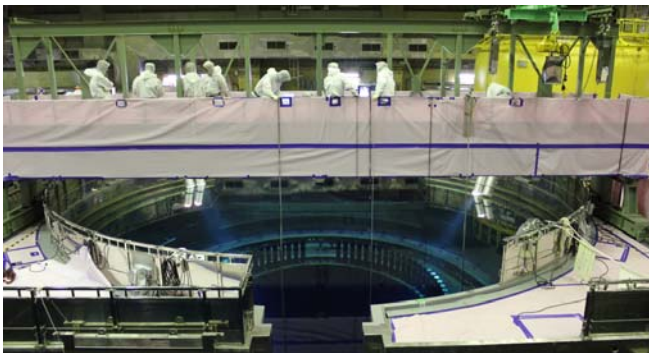
etc.



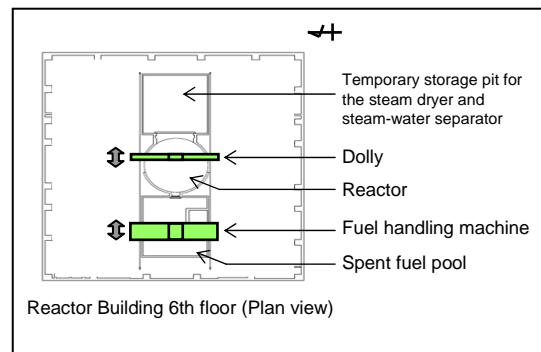
*1 Stored in the temporary storage pit for the steam dryer and steam-water separator.
*2 Stored in the spent fuel pool (8 fuel assemblies and 4 control rods are inspected).

Inspection method

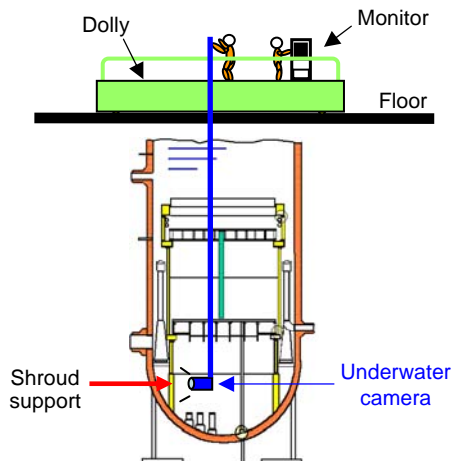
The soundness of each structure is inspected utilizing an underwater camera hung down from the dolly or fuel handling machine.



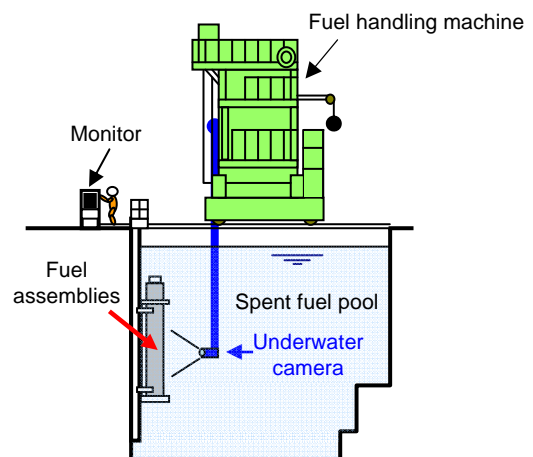
Inspection conducted on the dolly (Photo taken on November 30)



< Shroud support inspection >



< Fuel assembly inspection >



Inspection progress status (as of November 30, 2012)

During the period from November 27 to mid December 2012, the structures/equipments in Unit 4 reactor are visually inspected utilizing an underwater camera (monitor image).

As of November 30, fuel assemblies (2 out of 8), core shroud*³, fuel support*⁴, (part of) shroud support and control rod guide pipe*⁵ have been visually inspected and no problem was found.

*³ Core shroud

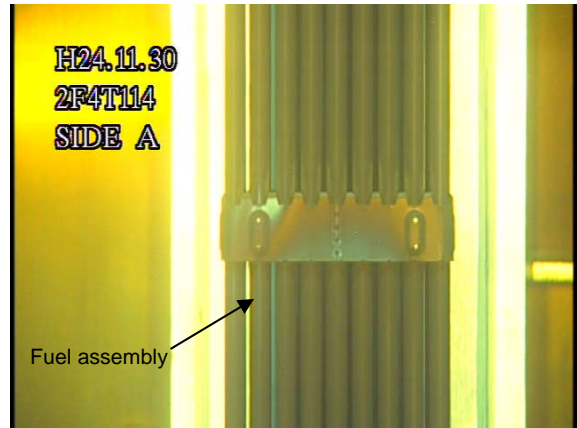
Cylindrical shape equipment made of stainless steel which separates the flow of cooling water in the reactor.

*⁴ Fuel support

Stainless-steel equipment installed on the core support panel which supports the fuel.

*⁵ Control rod guide pipe

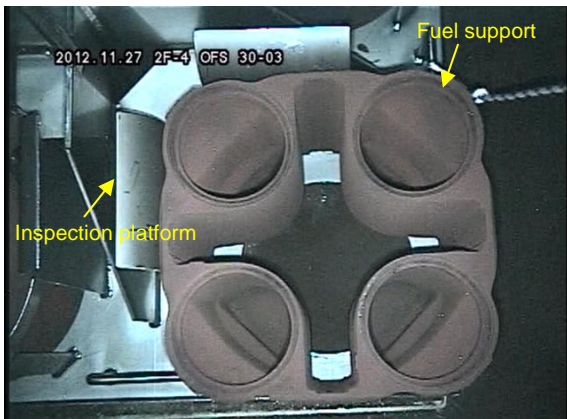
Cylindrical shape equipment made of stainless steel installed on the control rod drive mechanism housing which stores and guides the control rods.



Fuel assembly (Photo taken in the spent fuel pool on November 30, 2012)



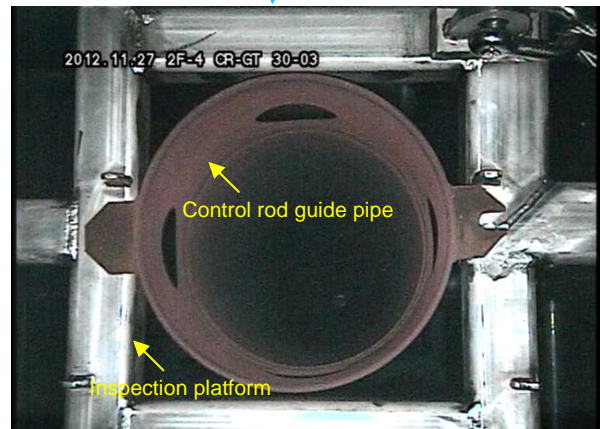
Core shroud (lower part and outer surface) (Photo taken in the reactor on November 29, 2012)



Fuel support (Photo taken in the spent fuel pool on November 27, 2012)



Shroud support (Photo taken in the reactor on November 30, 2012)



Control rod guide pipe (Photo taken in the spent fuel pool on November 27, 2012)

