

## Attachment 1

### Transfer to the Process Main Building

#### 1. Summary

Currently, approximately 25,000 m<sup>3</sup> of radioactive accumulated water (the "Accumulated Water") exists inside the turbine building of Unit 2. The Accumulated Water may have been contaminated by damaged fuel, therefore they are extremely high level radioactive. Since we are continuously injecting water to the reactor for cooling, it is assumed that the Accumulated Water may be further produced. (Currently, approximately 168 tons/day of water is injected.)

The densities of Cs-137 and I-131 in the Accumulated Water inside turbine building of Unit 2 are  $3 \times 10^6 \text{Bq/cm}^3$  and  $1.3 \times 10^7 \text{Bq/cm}^3$  respectively, which are at extremely high level. Some of the Accumulated Water has leaked through the crack of trench and countermeasures were taken to stop such leakage. However, we need to urgently secure location for transferring the Accumulated Water in order to prevent significant sea contamination which may be caused by such accumulated water being discharged directly to the sea through repetition of leakage and leakage from other places.

In order to ensure prevention of leakage to the sea, it is essential to transfer the Accumulated Water from the turbine building to a tank or a building with a capacity of several tens of thousands m<sup>3</sup>. Considering the current situation where water level inside the turbine building of Unit 2 is increasing due to stoppage of leakage from the crack of trench, we urgently need to secure location for transferring the Accumulated Water, however, it would not be easy to facilitate building and installation of a tank for storing large quantity of high level radioactive accumulated water in a short period of time.

Among the 4 buildings of Centralized Radiation Waste Treatment Facility (i.e. Process Main Building, Miscellaneous Solid Waste Volume Reduction Treatment Building, On-site Bunker Building, Incineration Workshop Building), we will start transferring to Process Main Building which has the largest storage capacity.

#### 2. Implementation Plan

##### (1) Summary of Transfer Plan

Volume shown below will be transferred by pump from the turbine building of Unit 2 to Process Main Building after checking items to be considered from a safety perspective.

Transfer Volume: approximately 10,000 m<sup>3</sup> (approximately 480 m<sup>3</sup>/day)

Criteria: Until water level inside the building reaches basement floor level.

### 3. Measures to Maintain Safety

(1) It has been confirmed that structural soundness of Process Main Building has not been affected by the earthquake.

(2) Measures to prevent leakage have been taken on through-holes up to the height where water may accumulate. In cases where there are small through-holes in the building, we will maintain lower water pressure inside the building than groundwater pressure so as to control accumulated water at a level where leakage could be prevented. In addition, measures to prevent leakage have been taken on small concrete cracks in the floor and wall.

After starting transfer, we will continuously monitor groundwater to check that no radioactive materials are leaking.

After transferring the Accumulated Water to Process Main Building, when working inside buildings other than Process Main Building, we will take safety measures considering the possibility of leakage occurring from Process Main Building.

As a countermeasure for tsunami, we will shut doors and apertures on ground floor to the extent possible and operate them in a manner so as to prevent penetration of seawater into the building.

(3) Before transferring the accumulated water inside the turbine building, we will conduct a leakage test by using relatively low contaminated water in order to reduce the risk of leakage. Furthermore, transfer route within the turbine building will be adopted to the extent possible to minimize possibility of external discharge. During transfer, we will monitor the water level indicator installed in Process Main Building to confirm the transfer is being conducted without incident. Moreover, we will measure radiation dose once a day at sections where transfer is conducted outside the building.

Countermeasures for earthquakes and tsunami are taken for hoses used for transfer laid outside.

(4) The Accumulated Water to be stored inside the building will be controlled below basement floor level in order to prevent leakage outside of the building. Water level indicator will be installed to monitor water level inside the building.

(5) Radiation dose evaluation in regard to surrounding environment of the building is assumed to be  $1.1 \times 10^{-2} \text{mSv/h}$  after storing  $10,000 \text{ m}^3$  of accumulated water in the Process Main Building. Accordingly, radiation will be mitigated to a sufficient level.

#### 4. Plan for Permanent Water Treatment

In order to reduce the Accumulated Water, we will maintain balance between amount of water to be injection for reactor cooling and amount of water to be treated through water treatment facility. Through the facility, radiation will be reduced and also, the water will be desalinated. For this purpose, water treatment facility utilizing coprecipitation methods (coagulation-sedimentation methods) and ion exchange methods will be implemented by June. Additional tanks to store large quantities of medium/low level accumulated water processed through such facility will also be installed.

We will maintain water to be injected to the reactor by removing saline matter from medium/low level accumulated water by treating it through seawater desalination plant from June onward.

By using this system, we will establish a closed cycle of water by around July this year. This is aiming to clarify the high level radioactive accumulated water in Process Main Building and improve the quality of water. Eventually, we will drain water and dispose the building appropriately. We will monitor the water level until we dispose the building.