June 17th, 2011

Tokyo Electric Power Company

Evaluation for Re-start of Water Transfer to the High Temperature Incinerator Building in which a Water Leakage was Found (Summary)

1. Summary

Because of the potential leakage of radioactive water accumulated in the turbine buildings of Unit 2 and Unit 3 (hereinafter, “high level radioactive water”), we urgently conducted a water transfer to the Process Main Building and the High Temperature Incinerator Building.

Subsequently, because the water level of the Process Main Building reached to the upper limit (decision making criteria: Floor level of basement 1st of the building) and the transfer work in the High Temperature Incinerator Building overlaps with the other works, we interrupted the water transfer and confirmed the water level of these buildings. As a result, we confirmed that the water level in the Process Main Building was stable and that in the High Temperature Incinerator Building had decreased.

Because the high level radioactive water of the turbine buildings of Unit 2 and Unit 3 has increased, we changed the previous decision making criteria for the water transfer and decided to transfer such water to the Process Main Building.

Based on our survey, we found there was a high possibility that the water in the High Temperature Incinerator Building was leaking to the nearby underground passage. Therefore, the water transfer was suspended. However, on May 31st, because we observed the water level in the building was stable and the water level of the underground passage also became stable (slight increase of water level), we conducted a risk evaluation of water leakage from nearby underground passage to underground water which may be caused by re-start of water transfer to the High Temperature Incinerator Building. We hereby report the result of evaluation.

2. Summary of Change and Reasons

（1）Summary of Change

【High Temperature Incinerator Building】

Before	After
4. Concrete Countermeasures for Safety (4) Countermeasures for Leakage from the High Temperature Incinerator Building ⑤Security of Safety of Work In case leakage is found, any work and water transfer will be suspended until the safety in the work environment is confirmed.	4. Concrete Countermeasures for Safety (4) Countermeasures for Leakage from the High Temperature Incinerator Building ⑤Security of Safety of Work In case leakage is found, any work and water transfer will be suspended until the safety in the work environment is confirmed. <u>However, safety in the work environment is</u>

	considered to be secured as nobody enters the underground passage where the leakage may occur and the water level will not reach the floor level of basement 1st (OP.4,200) of the nearby Incineration Workshop Building. Water transfer to the building will be resumed in case that the decrease of water level stops and it is judged that water leakage risks from the underground passage to underground water are low.

（2）Reasons of Change

The level of high level radioactive water of the Unit 2 and Unit 3 turbine buildings has increased due to water injection to the reactors. The water is transferred and stored in the Centralized Radiation Waste Treatment Facility to prevent water leakage. In case water transfer is not resumed, water leakage risk to the outside environment will increase as water level will exceed OP. 4,000 before the operation start of radioactive water treatment facility (after June 17).

Thus, based on “Change of Transferred Water Storage Level of the Process Main Building”, the high level radioactive water in the Unit 2 and Unit 3 turbine buildings has been transferred up to OP.5,100 in the Process Main Building. The water level of the Unit 2 turbine building is expected to increase again once the water transfer is suspended. As a countermeasure, transfer of high level radioactive water of the turbine building of Unit 2 to the surface condenser of Unit 1 is planned to be started once a preparatory work is completed.

The water in the turbine building of Unit 2 was transferred to the surface condenser of Unit 2 (about 300 m^3) and the water in the turbine building of Unit 3 was transferred to the surface condenser of Unit 3 (about 2,000 m^3). By the water transfer to the surface condensers of Unit 2 and Unit 3, a timing that the high level radioactive water reaches OP.4,000 can be delayed for several days. However, there still remains water leakage risk to the outside environment as water level may exceed OP. 4,000 before start of radioactive water treatment facilities (after June 17).

Because the water level in the High Temperature Incinerator Building, at which water leakage was observed before, is stable at this moment (slight increase of the water level), we will transfer high level radioactive water to the High Temperature Incinerator Building in order to reduce water leakage risk to the outside environment after evaluating the leakage risk to underground water.

（3）Causes of and Countermeasures for Water Level Decrease in the High Temperature Incinerator Building.

As a result of the survey for the leakage route from the High Temperature Incinerator Building, the high level radioactive water is expected to leak to the nearby underground passage from the fact

that water level in the nearby underground passage is increasing, that radioactivity level of the water in the underground passage is higher than ordinary underground water, and that water level in the underground passage and the High Temperature Incinerator Building are gradually reaching to the same level and becoming stable at that level. (attachment 1-2)

Poor construction of concrete filled part, poor water prevention treatment for the penetration part of pipes and power lines, or omission of such treatment are considered to be potential cause of such leakage. While specifying single cause is rather difficult, there is a possibility of leakage from the concrete filled parts.

As a countermeasure, the water in the underground passage will be pumped up to the High Temperature Incinerator Building in order to decrease the water level in case the water leakage to the outside environment is confirmed through the surveillance of water level and radioactivity density of the sub drain water. After the operation start of the radioactive water treatment facility and the capacity is secured in the underground passage, such water will be pumped up to the main process building and collected.

Even if no leakage to the outside environment is observed, we will consider pumping and collecting the water accumulated in the underground passage, depending on the situation of water storage and treatment in the High Temperature Incinerator Building and in the main process building.

(4) Concept of water level management within the decision making criteria

Prevention of leakage spread has top priority in conducting the high level radioactive water transfer.

Water level decrease in the High Temperature Incinerator Building ceased on May 31 and current water level in the underground passage exceeds that in the High Temperature Incinerator Building. Water level increase in the underground passage was considered to be due to water inflow from underground water. Water level in the High Temperature Incinerator Building is stable with slight increasing trend due to the water flow from the underground passage.

Slight water level increase in the High Temperature Incinerator Building will be managed with the target threshold of OP.3200 in order to manage the water level within the decision making criteria (to the underground 1st floor level: OP4,200) and water will be transferred as necessary.

(Attachment 1)

(5) Safety in the work environment

When conducting operation in on-site bunker building, incineration workshop building, and etc of centralized radiation waste treatment facility, the safety measure will be taken in full consideration of the potential leakage from main process building and the High Temperature Incinerator Building. In specific, concrete wall and etc will be installed to shut the high level radioactive water flow into buildings due to the potential leakage from trenches. Also change of water level in the High Temperature Incinerator Building and underground passage will be under surveillance once a day.

When conducting operation in centralized radiation waste treatment facility, water leakage and

water level in the building containing high level radioactive water will be under strict surveillance in consideration of such water in the vicinity of the work place. Exposure dose in the work environment will be thoroughly measured at the same time. In case leakage is found, any work and water transfer will be suspended until the safety in the work environment is confirmed. However, even in such case, safety in the work environment is considered to be secured as nobody enters the underground passage where the leakage may occur and the water level will not reach the floor level of basement 1st (OP.4,200) of the nearby Incineration Workshop Building. Water transfer to the building will be resumed in case that the decrease of water level stops and it is judged that water leakage risks from the underground passage to underground water are low.

(6) Evaluation of leakage risk to the underground water

As the decease of water level in the High Temperature Incinerator Building stopped, we evaluated that the leakage risk from trenches to the underground water is low and transfer of high level radioactive water to the High Temperature Incinerator Building is considered to be feasible.

a. Evaluation of underground passage

Chloroprene rubber is used for the anti-earthquake joint portion in the underground passage. Evaluation work of rubber deterioration due to the radiation from the high level radioactive water concluded that the soundness will be maintained.

b. Evaluation using the survey result of sub-drain water level and radiation

Judging from the fact that water level in the sub-drain is higher than that in the High Temperature Incinerator Building and underground passage, that water level in the underground passage remains increasing after decrease of water level in the High Temperature Incinerator Building stopped, and that the water level in the underground passage is higher that that in the High Temperature Incinerator Building, it is considered that there is no water leakage into underground water and that under groundwater flows into the underground passage.

The trend of water level in the sub-drain and radiation level near the centralized radiation waste treatment facility has been under surveillance since pre transfer of high level radioactive water.

(attachement 3)

Potential leakage from the buildings, change of underground water flow, as well as water flow from the ground surface are considered to have impact in the change of water level and radiation level. Rain water inflow into the sub-drain pit was confirmed on the ground surface and radioactive materials may flows in accordingly. There exist certain correlation between water level in the sub-drain, radiation level and rainfall in the short term. Rainfall temporarily increases the water level in the sub-drain and radiation level.

Judging from the fact that surveillance to the date didn’t find increasing trend of radiation density and that water level in the building remains below that of underground water, .it is considered that there is no leakage from the centralized waste treatment facility building (main process building

and the High Temperature Incinerator Building) and underground passage. Nonetheless, the related facilities and environment will be continuously under strict surveillance.

(attachment 4)

End