

**Situation of Storing and Treatment of Accumulated Water including Highly Concentrated Radioactive Materials at Fukushima Daiichi Nuclear Power Station  
(8<sup>th</sup> Release)**

August 17, 2011

Tokyo Electric Power Company

**1. Purpose**

This document is to report the following matters in accordance with the instruction of “(Instruction) Regarding installment of treatment facility and storing facility of water including highly concentrated radioactive materials at Fukushima Daiichi Nuclear Power Station of the Tokyo Electric Power Company (NISA No. 6, June 8, 2011),” dated June 9.

<Instruction>

Situation of storing and treatment of the contaminated water in the Power Station and future forecast based upon the current situation have to be reported to NISA as soon as the treatment facility starts its operation. Also, subsequently, continued report has to be submitted to NISA once in a week until the treatment of the accumulated water in the Centralized Radiation Waste Treatment Facility is completed.

**2. Situation of storing and treatment of accumulated water in the building (actual record)**

Stored amount in each unit building (Unit 1 to 4 (including condenser and trench)), and stored and treated amount in the Accumulated Water Storing Facility (including underpass area close to the High Temperature Incinerator Building), and other related data, on August 16, are shown in the Attachment material-1.

**3. Future forecast of storing and treatment**

**(1) Short term forecast**

Water transfer is planned so that the level of the accumulated water in the Unit 1 and 2 building and Unit 3 and 4 building will not exceed OP. 4,000, taking the stored amount in the Accumulated Water Storing Facility and the operating situation of the radioactive material treatment equipment into consideration. Water is transferred to the Process Main Building in principle, by securing the enough capacity for accepting accumulated water in the Process Main Building.

Hence, priority for treatment is placed on the accumulated water in the Process Main Building in order to reserve the capacity for accepting the accumulated water in the building.

Stored amount in each unit building (Unit 1 to 4 (including condenser and trench)), and stored and treated amount in the Accumulated Water Storing Facility (including underpass area close to the High Temperature Incinerator Building), and other related data, forecasted on August 23, are shown in the Attachment material-2.

## **(2) Middle term forecast**

Regarding the accumulated water in the Unit 1 and 2 building and Unit 3 and 4 building, from the viewpoint of reducing the risks of discharging to the ocean and leaking into the groundwater, water transfer is planned with considering the capacity of the Process Main Building, by setting the intermediate target of the accumulated water level in the building at OP. 3,000, for the purpose of keeping enough reserve for the accumulated water level by reaching to OP. 4,000 and keeping the accumulated water level lower than the groundwater level.

Also, treatment of the accumulated water in the Process Main Building is planned taking the situation of installing the middle and low level waste water tanks, and the operation availability and maintenance period of the radioactive material treatment equipment into consideration.

On the other hand, the accumulated water level in the High Temperature Incinerator Building is kept below OP. 4,200, and the transfer is planned when certain amount of store capacity is reserved in the Process Main Building. Treatment of the accumulated water in the High Temperature Incinerator Building is carried out when enough store capacity of the Process Main Building is reserved for accepting the accumulated water in the High Temperature Incinerator Building.

Stored amount in each unit building (Unit 1 to 4 (including condenser and trench)), and storing and treatment situation in the Accumulated Water Storing Facility (including underpass area close to the High Temperature Incinerator Building), forecasted for 3 months, are shown in the Attachment material-3.

Stored amount in each building and the water storage equipment is forecasted to reduce through the transfer and treatment. According to the forecast for 3 months, water levels in the buildings of Unit 2 and 3 are estimated to decrease to OP. 3,000 after the middle and the end of September respectively, supposing that there is no change in the water injection amount and no effect of rainfall, although the forecast could vary in accordance with the operation availability of the radioactive material treatment equipment, or other parameters.

Also, the water treated by the radioactive material treatment equipment can be stored in the middle and low waste water tanks, which are currently being installed.

END

# Storage and treatment of high level radioactive accumulated water (August 16, 2011)

| Lines |  |
|-------|--|
|       | High level radioactive water           |
|       | Treated water (saltwater)              |
|       | Treated water (concentrated saltwater) |
|       | Treated water (freshwater)             |
|       | Freshwater                             |

|   | Stored volume                    | Change from last report | Storage capacity     |
|---|----------------------------------|-------------------------|----------------------|
| Concentrated fresh water receiving tank | 27,621m <sup>3</sup>             | + 3,914m <sup>3</sup>   | 38,800m <sup>3</sup> |
| Freshwater receiving tank               | 2,070m <sup>3</sup> <sup>1</sup> | -                       | 11,600m <sup>3</sup> |
| Concentrated waste water storage        | 780m <sup>3</sup>                | + 570m <sup>3</sup>     | 5,000m <sup>3</sup>  |

|                     | Chlorine Concentration <sup>2</sup> |
|---------------------|-------------------------------------|
| Before Desalination | 6,000ppm                            |
| After Desalination  | 20ppm                               |

<sup>2</sup> Data on 8/9

<sup>1</sup> Since desalination plant is operated and the water level is not still, the figure is a

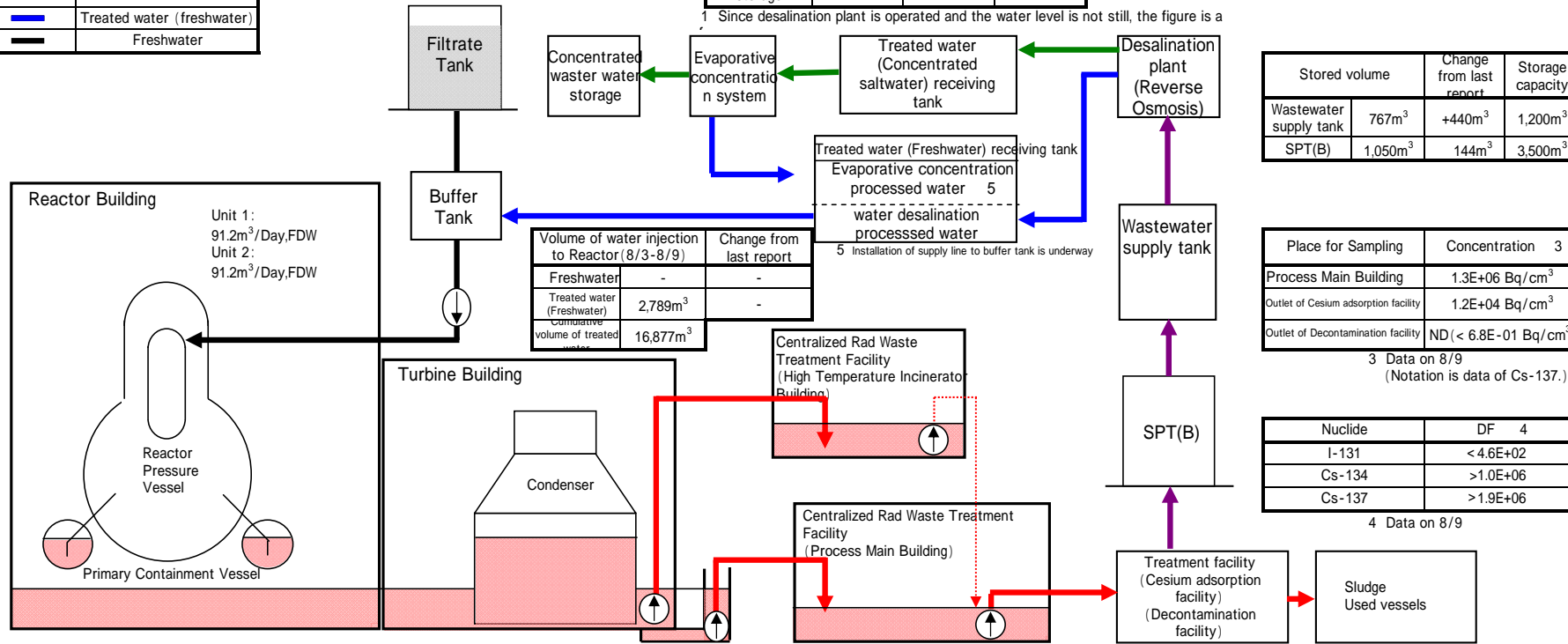
|                        | Stored volume       | Change from last report | Storage capacity    |
|------------------------|---------------------|-------------------------|---------------------|
| Wastewater supply tank | 767m <sup>3</sup>   | +440m <sup>3</sup>      | 1,200m <sup>3</sup> |
| SPT(B)                 | 1,050m <sup>3</sup> | 144m <sup>3</sup>       | 3,500m <sup>3</sup> |

| Place for Sampling                   | Concentration <sup>3</sup>         |
|--------------------------------------|------------------------------------|
| Process Main Building                | 1.3E+06 Bq/cm <sup>3</sup>         |
| Outlet of Cesium adsorption facility | 1.2E+04 Bq/cm <sup>3</sup>         |
| Outlet of Decontamination facility   | ND (< 6.8E-01 Bq/cm <sup>3</sup> ) |

<sup>3</sup> Data on 8/9  
(Notation is data of Cs-137.)

| Nuclide | DF <sup>4</sup> |
|---------|-----------------|
| I-131   | < 4.6E+02       |
| Cs-134  | >1.0E+06        |
| Cs-137  | >1.9E+06        |

<sup>4</sup> Data on 8/9



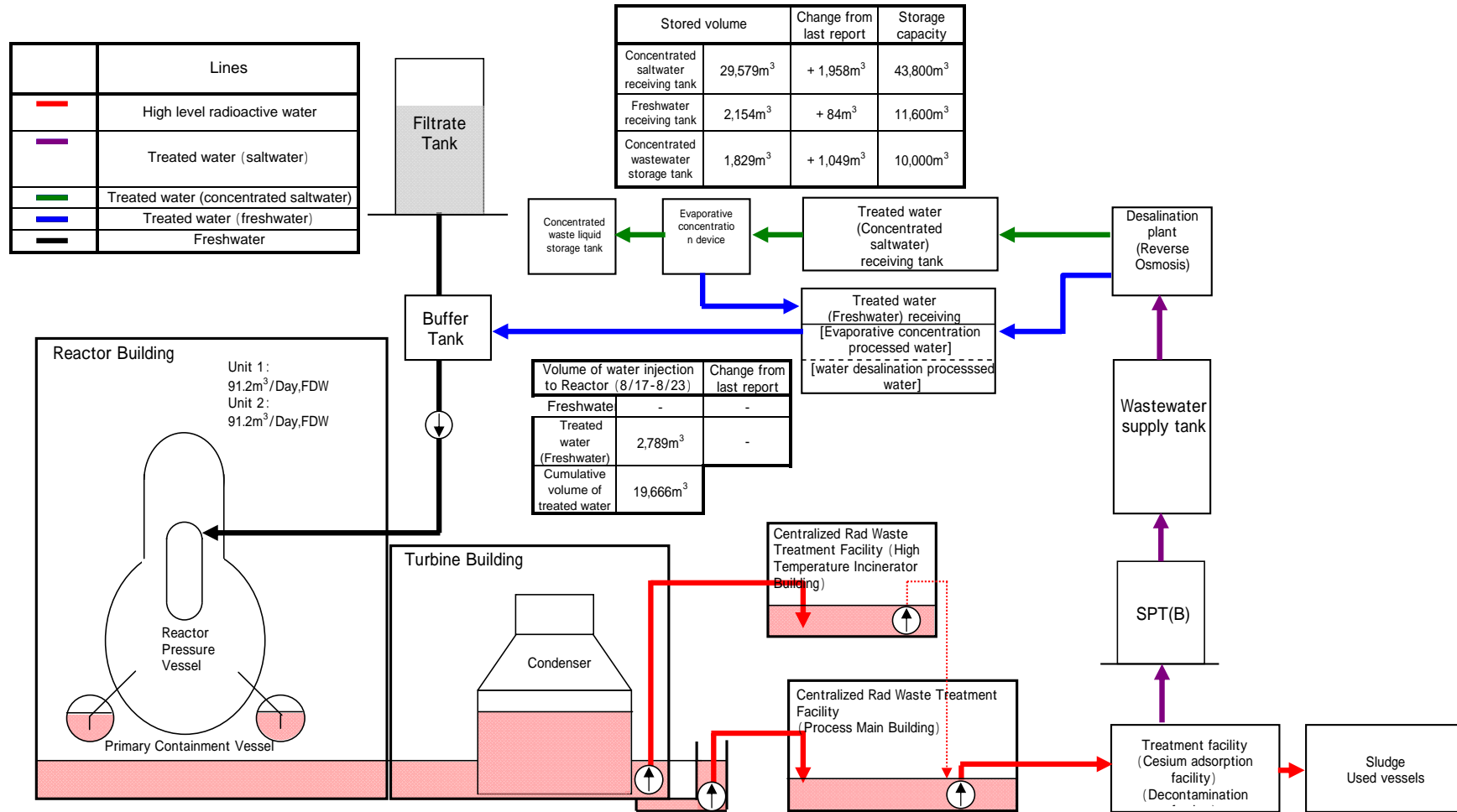
| Facility | Accumulated volume           | Change from last report | Water level in Turbine Building | Transfer to           |
|----------|------------------------------|-------------------------|---------------------------------|-----------------------|
| Unit 1   | Approx. 17,020m <sup>3</sup> | 190m <sup>3</sup>       | OP.4,930                        | Process Main Building |
| Unit 2   | Approx. 26,900m <sup>3</sup> | 400m <sup>3</sup>       | OP.3,534                        |                       |
| Unit 3   | Approx. 29,300m <sup>3</sup> | 400m <sup>3</sup>       | OP.3,524                        | Process Main Building |
| Unit 4   | Approx. 21,700m <sup>3</sup> | 400m <sup>3</sup>       | OP.3,516                        |                       |
| Total    | Approx. 94,920m <sup>3</sup> |                         |                                 |                       |

| Storage facility      | Accumulated volume           | Change from last report | Water level | Treated volume (8/3-8/9)    | Cumulative treated volume    | Waste produced | Change from last report | Storage volume     |
|-----------------------|------------------------------|-------------------------|-------------|-----------------------------|------------------------------|----------------|-------------------------|--------------------|
| Process Main Building | Approx. 18,670m <sup>3</sup> | 370m <sup>3</sup>       | OP.5,247    | Approx. 7,420m <sup>3</sup> | Approx. 49,230m <sup>3</sup> | Sludge         | 394m <sup>3</sup>       | + 60m <sup>3</sup> |
| HTI Building          | Approx. 5,140m <sup>3</sup>  | + 250m <sup>3</sup>     | OP.3,672    |                             |                              | Used vessels   | 129                     | + 15               |
| Total                 | Approx. 23,810m <sup>3</sup> |                         |             |                             |                              |                |                         |                    |

**Note**

- Previous report: August 9, 2011
- We continue transfer from Unit 2, 3 to Process Main Building. (We temporarily stopped transferring due to the adjustment of water level in the Process Main Building. (Unit 2: 8/9 16:56 ~ 8/10 16:47, Unit 3: 8/15 16:46 ~ Temporary halt to the transferring)
- 8/10 10:06 ~ 14:19 Transferring from On-site Bunker Building to Process Main Building was done.

# Storage and treatment of high level radioactive accumulated water (Forecast for August 23, 2011)



| Lines                                 |  |
|---------------------------------------|--|
| <span style="color: red;">—</span>    | High level radioactive water           |
| <span style="color: purple;">—</span> | Treated water (saltwater)              |
| <span style="color: green;">—</span>  | Treated water (concentrated saltwater) |
| <span style="color: blue;">—</span>   | Treated water (freshwater)             |
| <span style="color: black;">—</span>  | Freshwater                             |

|                                       | Stored volume        | Change from last report | Storage capacity     |
|---------------------------------------|----------------------|-------------------------|----------------------|
| Concentrated saltwater receiving tank | 29,579m <sup>3</sup> | + 1,958m <sup>3</sup>   | 43,800m <sup>3</sup> |
| Freshwater receiving tank             | 2,154m <sup>3</sup>  | + 84m <sup>3</sup>      | 11,600m <sup>3</sup> |
| Concentrated wastewater storage tank  | 1,829m <sup>3</sup>  | + 1,049m <sup>3</sup>   | 10,000m <sup>3</sup> |

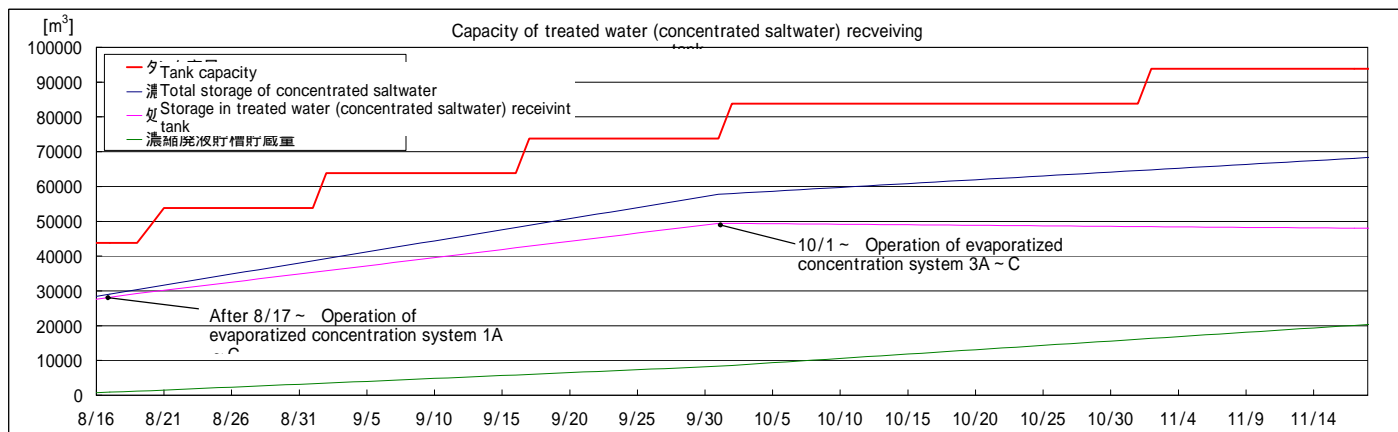
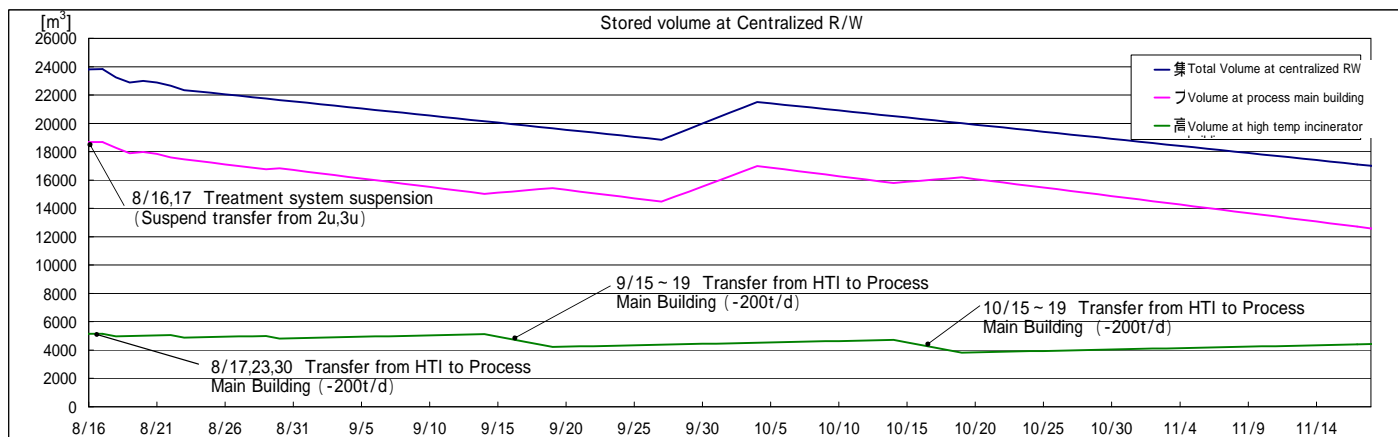
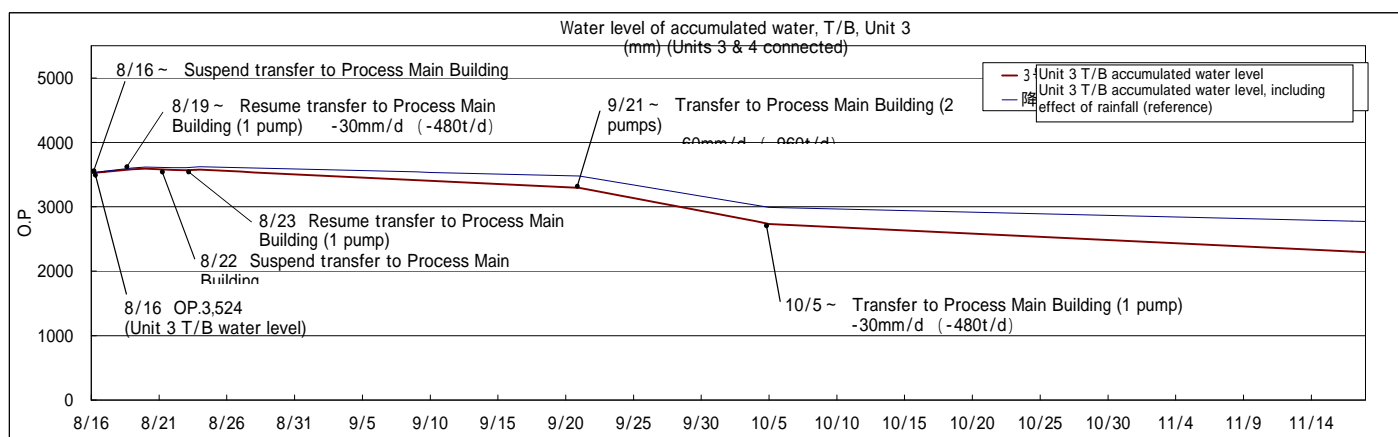
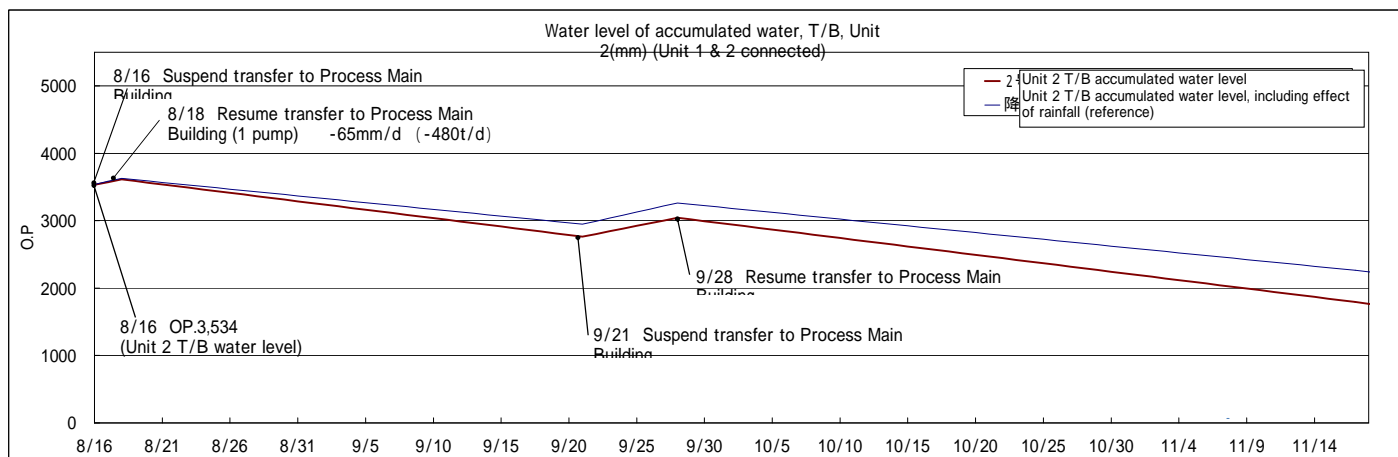
| Volume of water injection to Reactor (8/17-8/23) |                      | Change from last report |
|--|----------------------|-------------------------|
| Freshwater                                       | -                    | -                       |
| Treated water (Freshwater)                       | 2,789m <sup>3</sup>  | -                       |
| Cumulative volume of treated water               | 19,666m <sup>3</sup> |                         |

| Facility     | Accumulated volume           | Change from last report | Water level in Turbine Building | Transfer to           |
|--------------|------------------------------|-------------------------|---------------------------------|-----------------------|
| Unit 1       | Approx. 16,990m <sup>3</sup> | 30m <sup>3</sup>        | OP.3,487                        | Process Main Building |
| Unit 2       | Approx. 26,500m <sup>3</sup> | 400m <sup>3</sup>       | (T/B of Unit 2)                 |                       |
| Unit 3       | Approx. 29,700m <sup>3</sup> | +400m <sup>3</sup>      | OP.3,565                        |                       |
| Unit 4       | Approx. 22,000m <sup>3</sup> | +300m <sup>3</sup>      | (T/B of Unit 3)                 |                       |
| <b>Total</b> | Approx. 95,190m <sup>3</sup> |                         |                                 |                       |

| Storage facility      | Accumulated volume           | Change from last report | Water level | Treated volume (8/3-8/9)    | Cumulative treated volume    | Waste produced | Change from now   | Storage volume   |
|-----------------------|------------------------------|-------------------------|-------------|-----------------------------|------------------------------|----------------|-------------------|------------------|
| Process Main Building | Approx. 17,370m <sup>3</sup> | 1,300m <sup>3</sup>     | OP.4,907    | Approx. 5,880m <sup>3</sup> | Approx. 55,110m <sup>3</sup> | Sludge         | 441m <sup>3</sup> | 47m <sup>3</sup> |
| HTI Building          | Approx. 5,150m <sup>3</sup>  | + 10m <sup>3</sup>      | OP.3,682    |                             |                              | Used vessels   | 141               | 12               |
| <b>Total</b>          | Approx. 22,520m <sup>3</sup> |                         |             |                             |                              |                |                   | 192              |

**Note**

- We will continue to transfer from Unit 2 and 3 to Process Main Building.
- Transfer from High Temperature Incinerator Building to Process Main building is planned.
- The capacity factor of the Treatment facility is assumed at 70%. (Treatment facility outage due to the test operation of Cesium adsorption facility No. 2 is taken into consideration.)
- Evaporative concentration system (1A, 1B, 1C) planned to start operation after August 17



Remarks  
 -The availability of the treatment facility is estimated to be 90%.  
 -T/B accumulated water level with effect of rainfall is set to increase 5mm per day, considering the average rainfall record from August to October for past 3 years in the area around Fukushima Daiichi Nuclear Power Station