

**Situation of Storing and Treatment of Accumulated Water including Highly Concentrated Radioactive Materials at Fukushima Daiichi Nuclear Power Station
(17th Release)**

October 19, 2011
Tokyo Electric Power Company

1. Introduction

This document is to report the following matters in accordance with the instruction of “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 (Instruction) “(NISA No. 6, June 8, 2011), dated on June 9.

<Instruction>

TEPCO should report to NISA the 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 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 amounts in each unit building (Unit 1 to 4 (including condensers and trenches)), 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, as of October 18, are shown in the Attachment -1.

3. Forecast of storing and treatment

(1) Short term forecast

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

We assume stored amounts 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 October 25, as shown in Attachment -2.

(2) Middle term forecast

Regarding accumulated water in 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, it is necessary to keep enough capacity for the accumulated water in the building until its level reaches OP. 4,000 and to keep the accumulated water level lower than the groundwater level.

We are transferring accumulated water keeping its level in the building below OP. 3,000 considering water injection amount increase to keep the reactor cold shutdown.

We forecast stored amounts in each unit building (Unit 1 to 4 (including condensers and trenches)), and storing and treatment situations in the Accumulated Water Storing Facility (including underpass areas close to the High Temperature Incinerator Building) for 3 months, as shown in Attachment -3.

Stored amounts in each building and the water storage equipment are forecasted to be unchanged in case transfer and treatment were implemented as scheduled without rain.

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

END

Storage and treatment of high level radioactive accumulated water (as of October 18, 2011)

Classification	
■	High level radioactive water
■	Treated water (saltwater)
■	Treated water (concentrated saltwater)
■	Treated water (freshwater)
■	Freshwater

Storage volume	1,2	Change from last report	Storage capacity	3
Concentrated saltwater receiving tank	70,581m ³	+ 4,928m ³	75,100m ³	
Freshwater receiving tank	8,199m ³	638m ³	17,700m ³	
Concentrated waste liquid storage tank	3,079m ³	+ 90m ³	9,500m ³	

- Storage volume are reference data, because water levels are unstable while desalination plants and evaporative concentration apparatuses are in operation.
- Data as of October 17, 2011 (Data as of October 2011 were unavailable due to interruption of power supply)
- Operational upper limit

Chlorine density	
Before/ after desalination	3,400ppm / 44ppm (sampled on Sep.27)
Before/ after evaporative concentration	12,000ppm / < 1ppm (sampled on Aug.16)

Storage volume	2	change from last report	Storage volume	3
Waste liquid supply tank	952m ³	+ 362m ³	1,200m ³	
SPT(B)	813m ³	77m ³	3,100m ³	

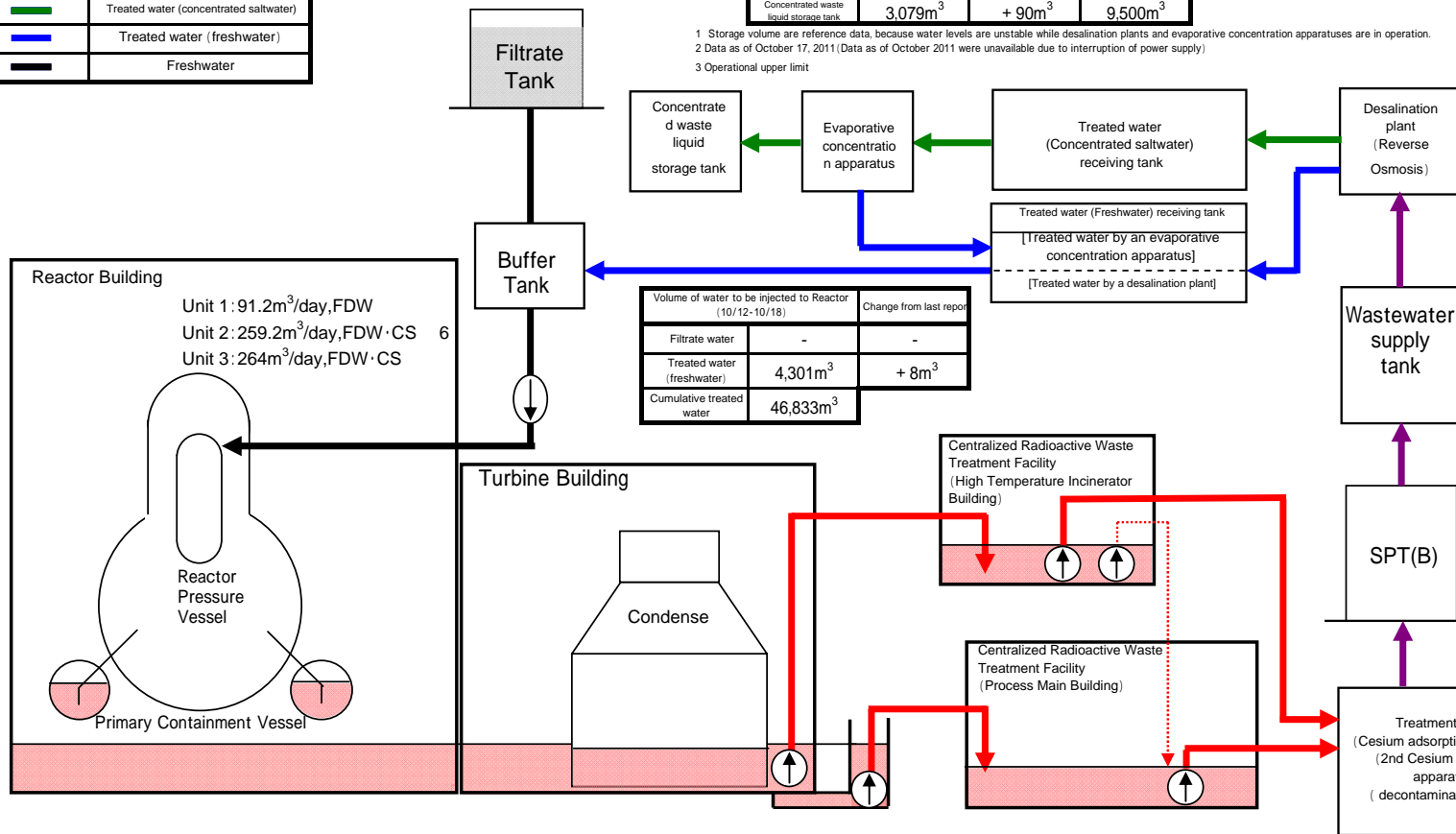
- Data as of October 17, 2011 (Data as of October 2011 were unavailable due to interruption of power supply)
- Operational Upper limit

Place of sampling	Radioactivity density	4
Process Main Building	1.1E+06 Bq/cm ³	(sampled on Sep.27)
Exit of cesium adsorption apparatus	6.7E+01 Bq/cm ³	(sampled on Sep.26)
Exit of decontamination facility	-	
High Temperature Incinerator Building	8.3E+05 Bq/cm ³	(sampled on Sep.26)
Exit of second cesium adsorption apparatus	ND (< 3.6E-01 Bq/cm ³)	(sampled on Sep.26)

4 Data of Cs-137 are described above.

Nuclide	DF	5,6
I-131	-	(-)
Cs-134	1.5E+04	(> 1.2E+06)
Cs-137	1.6E+04	(> 2.3E+06)

- Data sampled on Sep 26/27 (operations of cesium adsorption facility - decontamination facility)
- Data in parentheses are those sampled on Sep 26 (operation of the 2nd Cesium adsorption apparatus)



Volume of water to be injected to Reactor (10/12-10/18)	Change from last report
Filtrate water	-
Treated water (freshwater)	4,301m ³ + 8m ³
Cumulative treated water	46,833m ³

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	Approx. 16,250m ³	110m ³	OP.4,926	Process Main Building
Unit 2	Approx. 21,400m ³	+ 600m ³	OP.2,994	
Unit 3	Approx. 22,600m ³	1,800m ³	OP.2,910	High Temperature Incinerator Building
Unit 4	Approx. 18,300m ³	900m ³	OP.3,035	
Total	Approx. 78,550m ³			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (10/12-18)	Cumulative treated volume	Waste produced	Change from last report	Storage capacity
Process Main Building	Approx. 10,310m ³	820m ³	OP.2,592	Approx.9,860m ³	Approx.134,100m ³	Sludge	581m ³	800m ³
High Temperature Incinerator Building	Approx. 4,120m ³	70m ³	OP.2,841	7	7	Used vessels	254 8	393 9
Total	Approx.14,430m ³							

- Including approx. 6,520m³ (cumulative treated volume: approx.40,260m³) of treated volume by the 2nd Cesium adsorption apparatus.
- Including 18 used vessels of 2nd Cesium adsorption apparatus.
- Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption apparatus.

Note:

- Last report as of October 11 2011
- Transferred from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building. (Oct. 12 to 13, water transfer from Unit 2 suspended and switched transfer destination to Process Main Building. Oct. 12 to 13, water transfer from Unit 3 suspended)
- First Cesium adsorption apparatus and 2nd Cesium adsorption apparatus have been operated in parallel (First facility utilization factor: 39.8%, Second facility utilization factor: 77.6% (reference))
- All the evaporate concentration apparatus were stopped

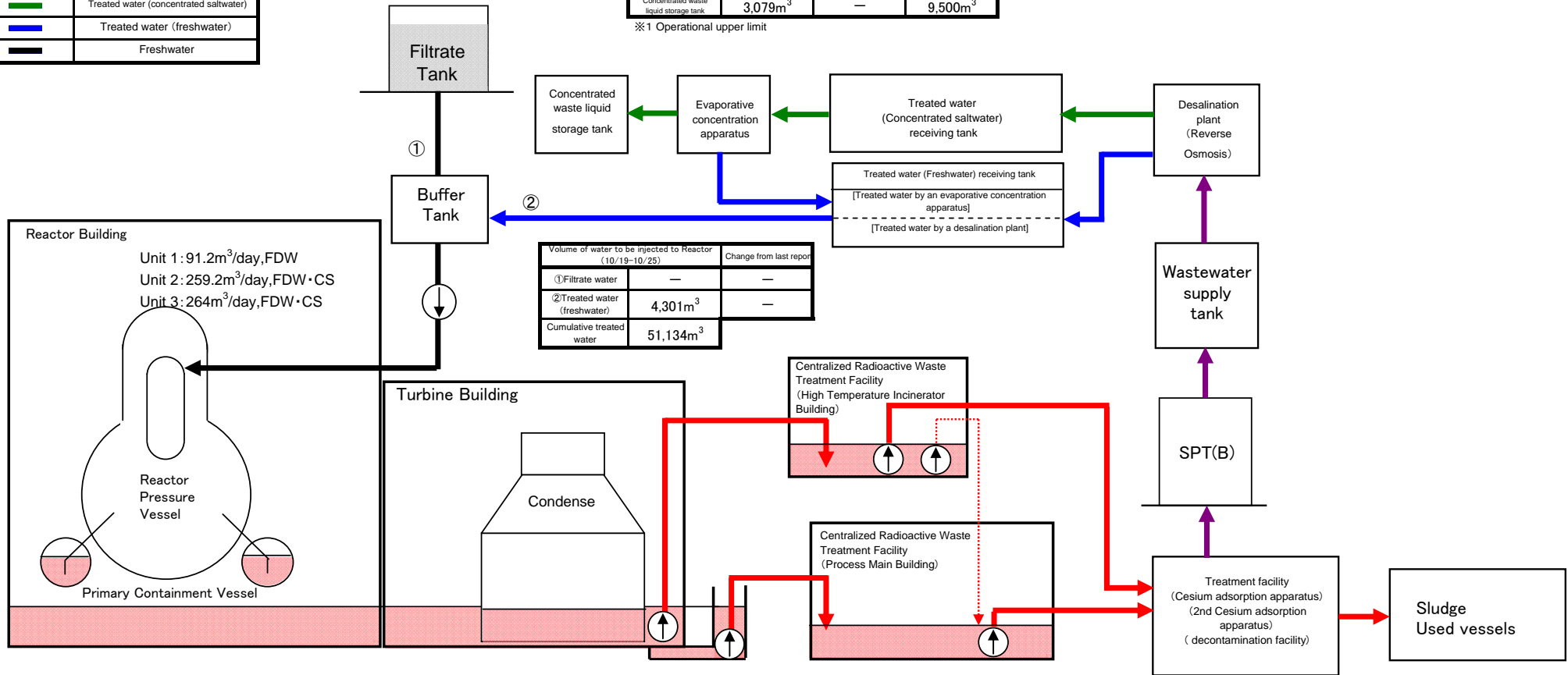
Storage and treatment of high level radioactive accumulated water (assumed situations as of October 25, 2011)

Classification	
■	High level radioactive water
■	Treated water (saltwater)
■	Treated water (concentrated saltwater)
■	Treated water (freshwater)
■	Freshwater

Storage volume			Change from last report	Storage capacity ※1
Concentrated saltwater receiving tank	74,361m ³	+3,780m ³	85,600m ³	
Freshwater receiving tank	6,418m ³	▲1,781m ³	17,700m ³	
Concentrated waste liquid storage tank	3,079m ³	—	9,500m ³	

※1 Operational upper limit

Volume of water to be injected to Reactor (10/19-10/25)			Change from last report
①Filtrate water	—	—	—
②Treated water (freshwater)	4,301m ³	—	—
Cumulative treated water	51,134m ³	—	—



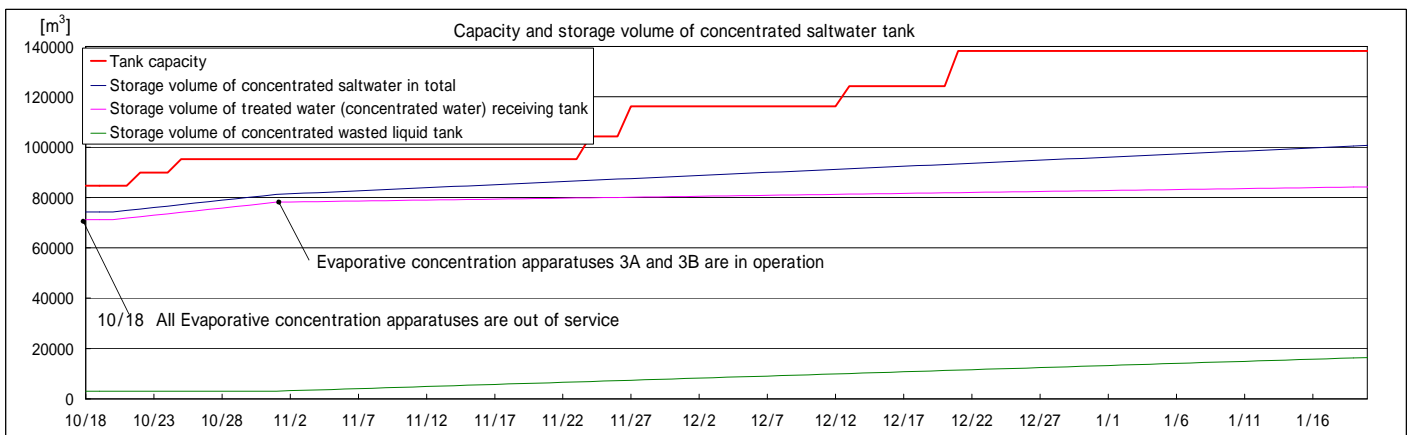
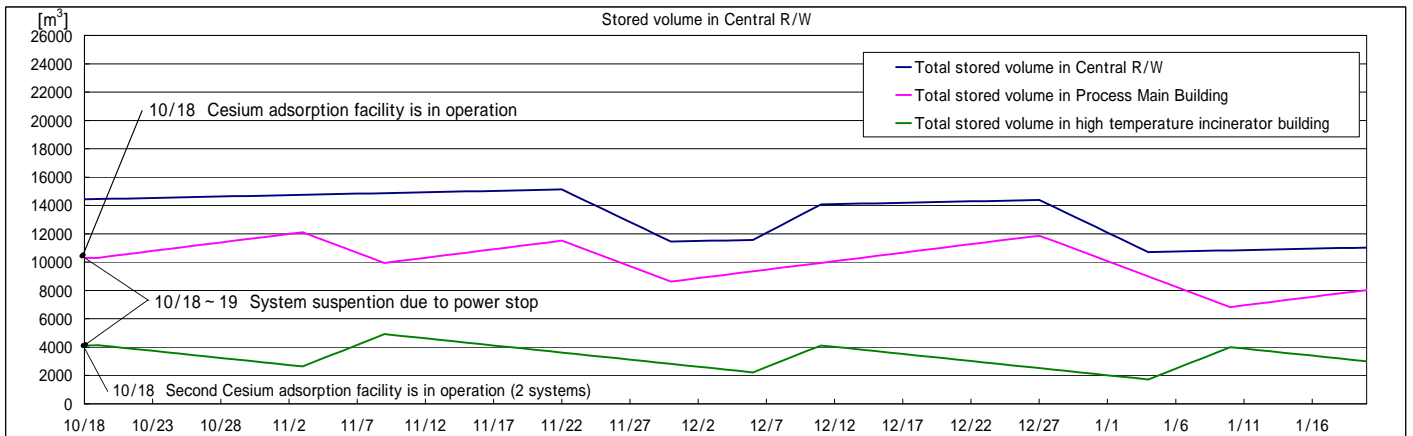
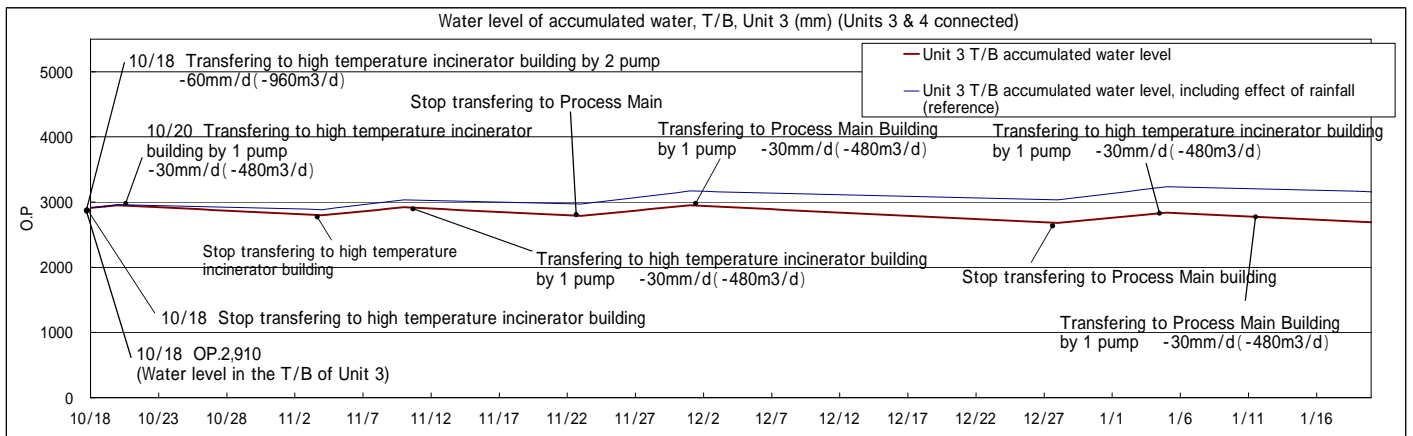
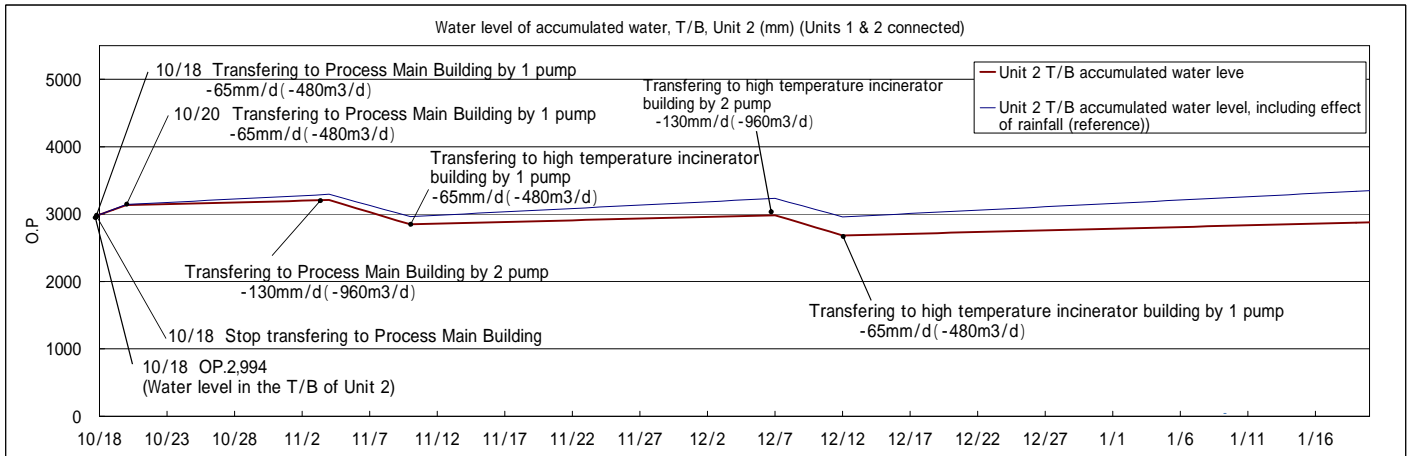
Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	Approx. 16,320m ³	+70m ³	OP.3,171 (Unit 2 T/B)	Process Main Building
Unit 2	Approx. 22,600m ³	+1,200m ³	OP.2,896 (Unit 3 T/B)	High Temperature Incinerator Building
Unit 3	Approx. 22,500m ³	▲100m ³	OP.2,896 (Unit 3 T/B)	High Temperature Incinerator Building
Unit 4	Approx. 18,200m ³	▲100m ³	OP.2,896 (Unit 3 T/B)	High Temperature Incinerator Building
Total	Approx. 79,620m ³			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (10/19-10/25)	Cumulative treated volume	Waste produced		Change from last report	Storage capacity
Process Main Building	Approx. 11,040m ³	+730m ³	OP.2,782	6,300m ³	Approx. 140,400m ³ ※2	Sludge	581m ³	—	800m ³
High Temperature Incinerator Building	Approx. 3,320m ³	▲800m ³	OP.2,182	※2		Used vessels	261 ※3	+7	393 ※4
Total	Approx. 14,360m ³								

※2 Including approx. 4,200m³ (cumulative treated volume: approx. 44,460m³) of treated volume by the 2nd Cesium adsorption apparatus.
 ※3 Including 20 used vessels of 2nd Cesium adsorption apparatus.
 ※4 Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption apparatus.

Note:

- Water of Unit 2 and Unit 3 will be transferred to Process Main Building and High Temperature Incinerator Building (Transfer from Unit 2 and Unit 3 will be stopped temporarily with stop of Treatment Facility due to interruption of power supply.)
- Treatment Facility (First Cesium adsorption apparatus and 2nd Cesium adsorption apparatus) will be stopped due to interruption of power supply
- First Cesium adsorption apparatus and 2nd Cesium adsorption apparatus will be operated in parallel (First facility utilization factor: 25%, Second facility utilization factor: 50% (reference)).



Note - Amount of water treatment is assumed to be 960m³/d (It can be adjusted according to level of accumulated water in T/B.)
 - Assume 5mm increase per day of accumulated water level of T/B including influences of rainfall in case we consider 3-year-averaged rainfall near 1F from August to October.