

**Situation of Storage and Treatment of Accumulated Water including Highly Concentrated
Radioactive Materials at Fukushima Daiichi Nuclear Power Station
(39th Release)**

March 22, 2012

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 (Units 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 March 20, 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 Units 1&2 and Units 3&4 building will be maintained around at the level of OP. 3,000, based on the stored amount in the Accumulated Water Storing Facilities and the operating situation of the radioactive material treatment equipment. Water is transferred to the Process Main Building and/or High Temperature Incinerator Building as Accumulated Water Storing Facilities.

Treatment is implemented considering the situation of storage and transfer of Accumulated Water Storing Facilities.

We assume stored amounts in each unit building (Units 1 to 4 (including condenser and trench)),

and stored and treated amount in the Accumulated Water Storing Facilities (including underpass area close to the High Temperature Incinerator Building), and other related data as of March 27, as shown in Attachment -2.

(2) Middle term forecast

Regarding accumulated water in Unit 1&2 building and Unit 3&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. On the other hand, based on the view of limiting inflow of underwater to buildings and reducing the amount of emerged accumulated water, we are planning to transfer accumulated water keeping its level in the building around OP. 3,000 considering water tank capacity.

As for accumulated water of the Process Main Building and the High Temperature Incinerator Building, we are planning to treat the accumulated water considering the situation of construction of middle and low level waste water tanks, the operation factor of the radioactive material treatment instruments and duration for maintenance.

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 Facilities (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. However, it would be subject to change depending on the operation factor of the radioactive material treatment instruments and so on.

Also, the water treated at the radioactive material treatment equipment (fresh water and condensed salt water) can be stored in the middle and low level waste water tanks.

END

Storage and treatment of high level radioactive accumulated water (as of March 20, 2012)

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

Storage volume 1			Change from last report	Storage capacity 2	
Concentrated saltwater receiving tank	108,767m ³	+ 2,850m ³		130,900m ³	
Freshwater receiving tank	7,611m ³	+ 610m ³		25,100m ³	
Concentrated waste liquid storage tank	5,467m ³	+ 10m ³		9,500m ³	

1 Storage volume are reference data, because water levels are unstable while desalination plants and evaporative concentration apparatuses are in operation.
2 Operational upper limit

		Chlorine density	
Before/ after desalination	1,800ppm / 2ppm	(sampled on Feb. 21)	
Before/ after evaporative concentration	6,900ppm / 2ppm	(sampled on Dec. 20)	

Storage volume			change from last report	Storage volume 2	
Waste liquid supply tank	789m ³	197m ³		1,200m ³	
SPT(B)	2,144m ³	+ 1,170m ³		3,100m ³	

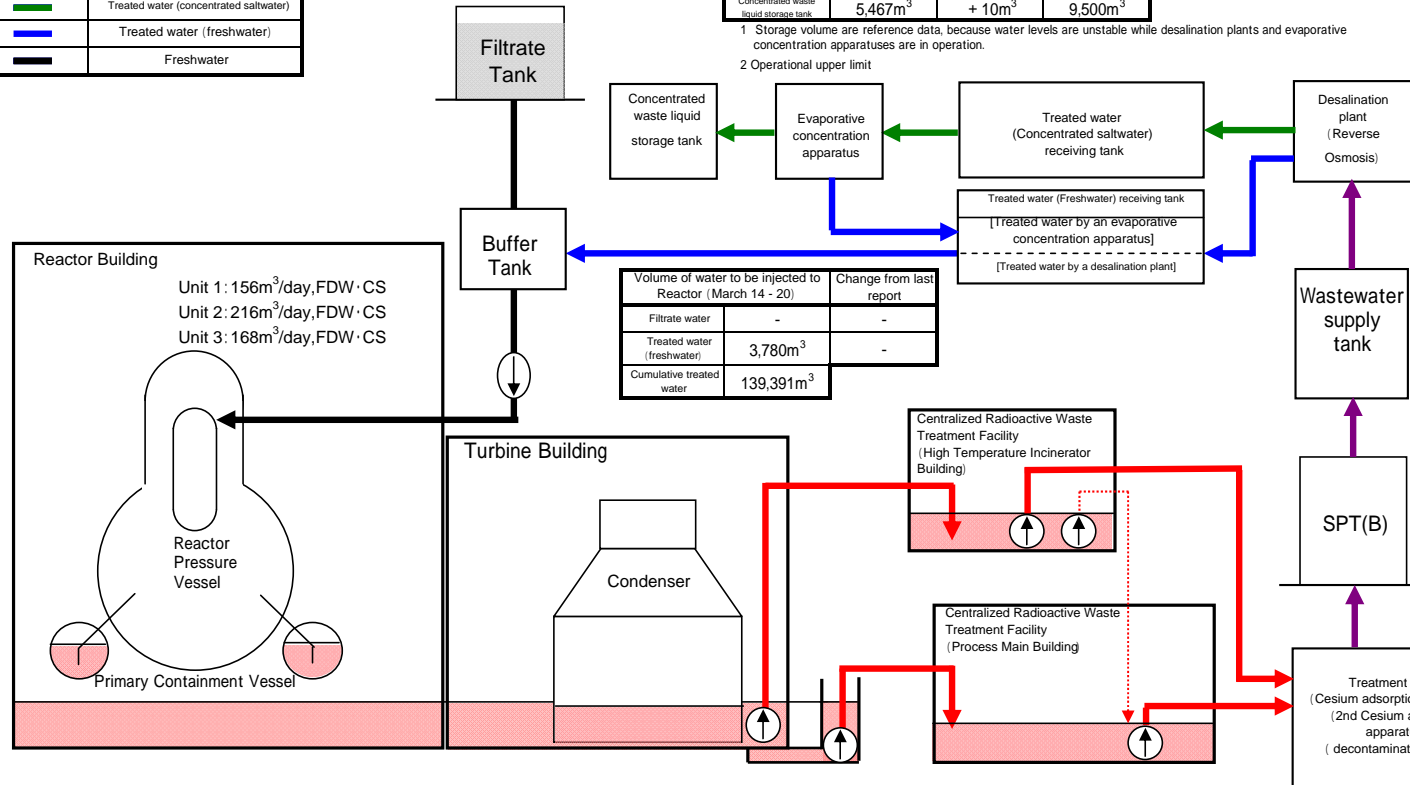
2 Operational Upper limit

Place of sampling	Radioactivity density 3
Process Main Building	1.7E+05 Bq/cm ³ (sampled on Feb.21)
Exit of cesium adsorption apparatus	1.4E+00 Bq/cm ³ (sampled on Feb.21)
Exit of decontamination facility	-
High Temperature Incinerator Building	2.1E+05 Bq/cm ³ (sampled on Feb.21)
Exit of second cesium adsorption apparatus	6.1E-01 Bq/cm ³ (sampled on Feb.21)

3 Data of Cs-137 are described above.

Nuclide	DF	4,5
I-131	-	(-)
Cs-134	1.1E+05	(1.8E+05)
Cs-137	1.2E+05	(3.4E+05)

4 Data sampled on Feb.21 (operations of cesium adsorption facility - decontamination facility)
5 Data in parentheses are those sampled on Feb.21 (operation of the 2nd Cesium adsorption apparatus)



Volume of water to be injected to Reactor (March 14 - 20)		Change from last report
Filtrate water	-	-
Treated water (freshwater)	3,780m ³	-
Cumulative treated water	139,391m ³	

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx. 14,600m ³	-	OP.3,383	Process Main Building
Unit 2	approx. 23,100m ³	-	OP.3,226	Process Main Building
Unit 3	approx. 23,900m ³	200m ³	OP.3,092	High Temperature Incinerator Building
Unit 4	approx. 18,600m ³	-	OP.3,082	High Temperature Incinerator Building
Total	approx. 80,200m ³			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (March7-13)	Cumulative treated volume	Waste produced	Change from last report	Storage capacity
Process Main Building	approx. 18,340m ³	760m ³	OP.5,188	approx. 8,220m ³	approx. 267,800m ³	Sludge 581m ³	-	700m ³ 2
High Temperature Incinerator Building	approx. 3,370m ³	1,000m ³	OP.2,209	6	6	Used vessels 377 7	-	1,137 8
Total	approx. 21,710m ³							

2 Shows the operational limit.
6 Including approx. 6,100m³ (cumulative treated volume: approx. 128,340m³) of treated volume by the 2nd Cesium adsorption apparatus.
7 Including 40 used vessels of 2nd Cesium adsorption apparatus.
8 Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption apparatus.

Note:
 · The previous update was reported as of March 13, 2012
 · The high level accumulated water was transferred from Units 2 and 3 to Process Main Building and Temperature Incinerator Building.
 (On March 18, the transfer from Unit 2 was switched from High Temperature Incinerator Building to Process Main Building. From March 13 to 15 as well as from March 18 to 19, the transfer from Unit 3 to High Temperature Incinerator Building was suspended.)
 · The two line operation was conducted for Cesium Adsorption Apparatus and 2nd Cesium Adsorption Apparatus. (Capacity factor for Cesium Adsorption Apparatus: 25.2% (Projected: 20%), Capacity factor for 2nd Cesium Adsorption Apparatus: 72.6% (Projected: 65%)(Ref.))
 · On March 13, 2nd Cesium Adsorption Apparatus was shutdown due to power outage.
 · On March 14, 2nd Cesium Adsorption Apparatus was shutdown due to test operation of the accumulated water treatment for the Process Main Building.
 · On March 14 and 15, the water was transferred from the trench between Process Main Building and High Temperature Incinerator Building to the High Temperature Incinerator Building
 · Since March 15, Cesium Adsorption Apparatus has been resumed.
 · On March 16, The treatment apparatuses (Cesium Adsorption Apparatus and 2nd Cesium Adsorption Apparatus) were shutdown due to power outage.
 · On March 19, The water was transferred from Side Bunker Building to Process Main Building.

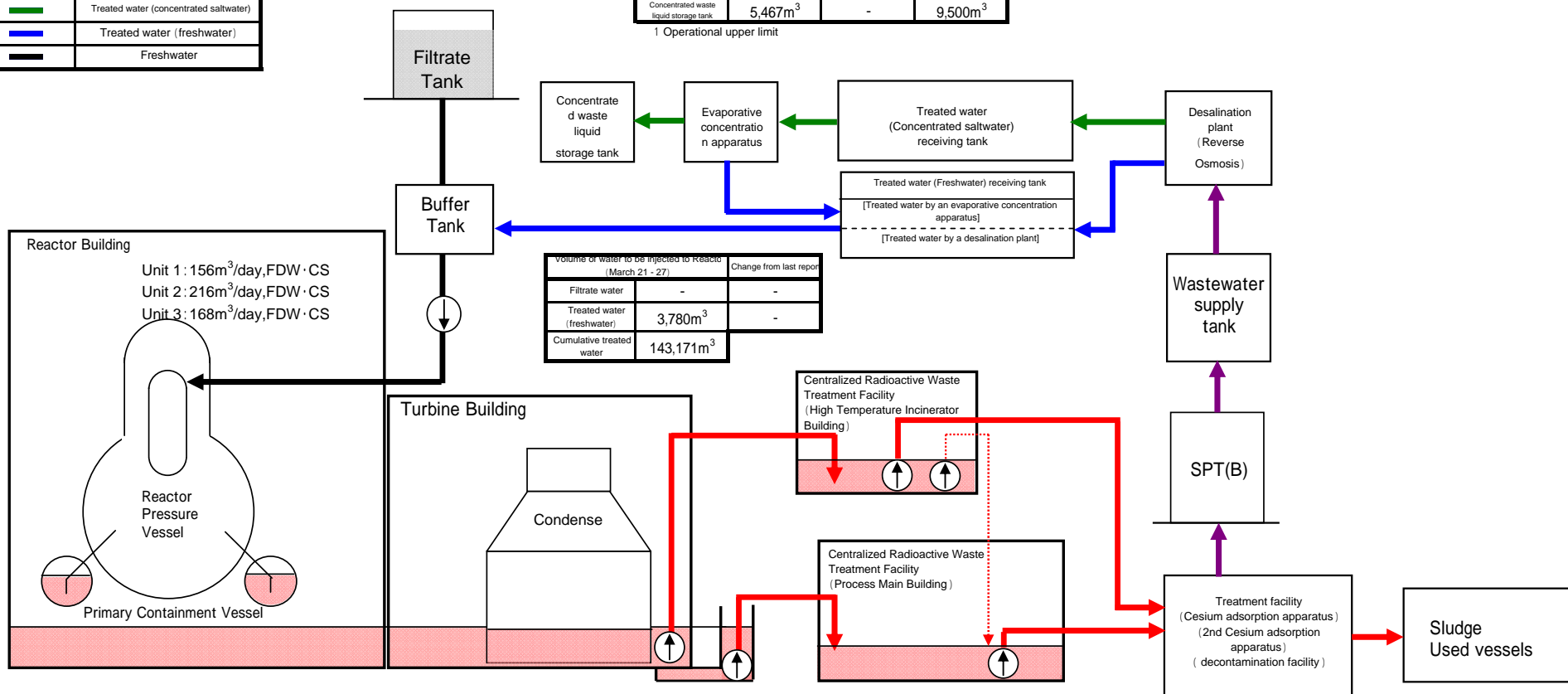
Storage and treatment of high level radioactive accumulated water (assumed situations as of March 27, 2012)

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

Storage volume			
	Storage volume	Change from last report	Storage capacity ¹
Concentrated saltwater receiving tank	112,631m ³	+ 3,864m ³	130,900m ³
Freshwater receiving tank	9,207m ³	+ 1,596m ³	25,100m ³
Concentrated waste liquid storage tank	5,467m ³	-	9,500m ³

¹ Operational upper limit

Volume of water to be injected to Reactor (March 21 - 27)		
	Volume	Change from last report
Filtrate water	-	-
Treated water (freshwater)	3,780m ³	-
Cumulative treated water	143,171m ³	-



Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx. 14,400m ³	200m ³	OP.3,168 (Unit 2 T/B)	High Temperature Incinerator Building
Unit 2	approx. 22,700m ³	400m ³	OP.3,081 (Unit 3 T/B)	High Temperature Incinerator Building
Unit 3	approx. 23,900m ³	-		
Unit 4	approx. 18,500m ³	100m ³		
Total	approx. 79,500m³			

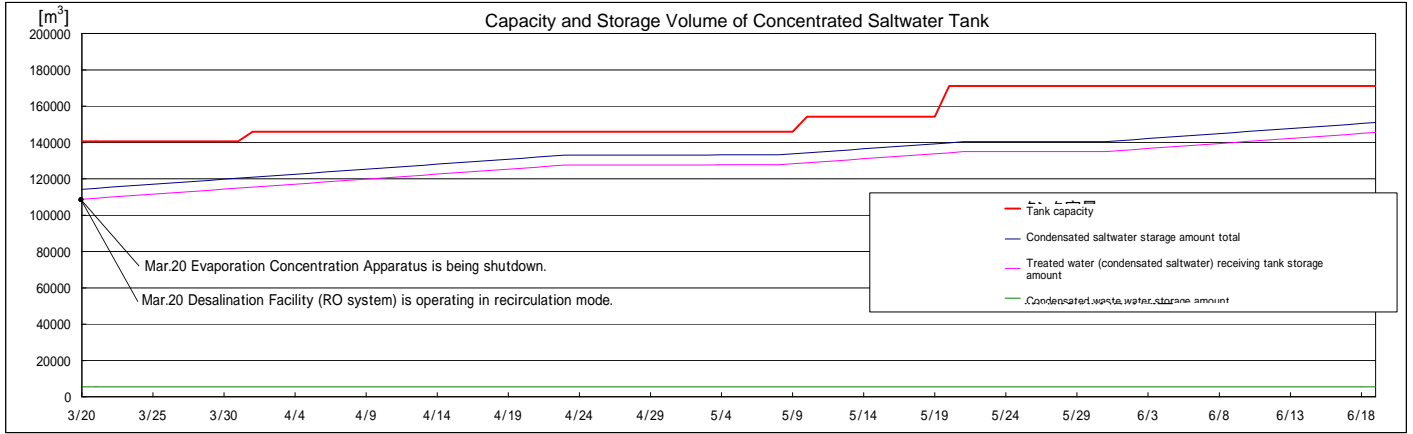
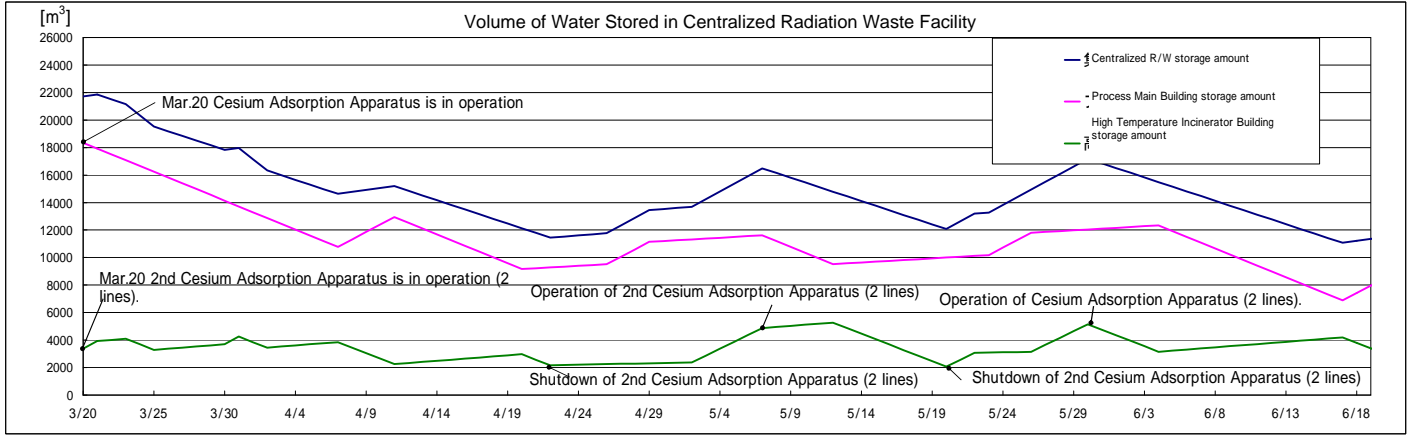
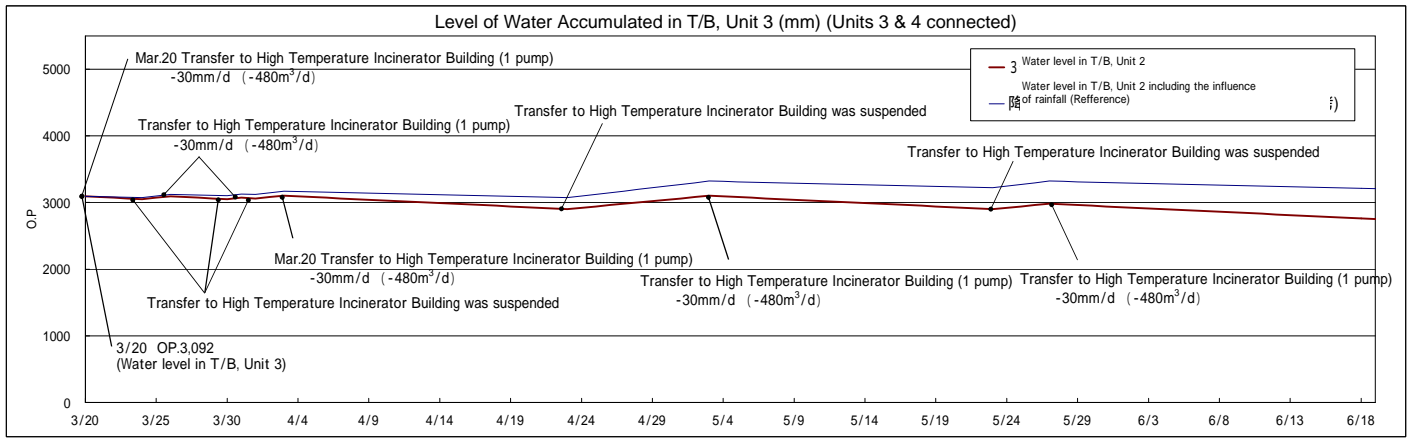
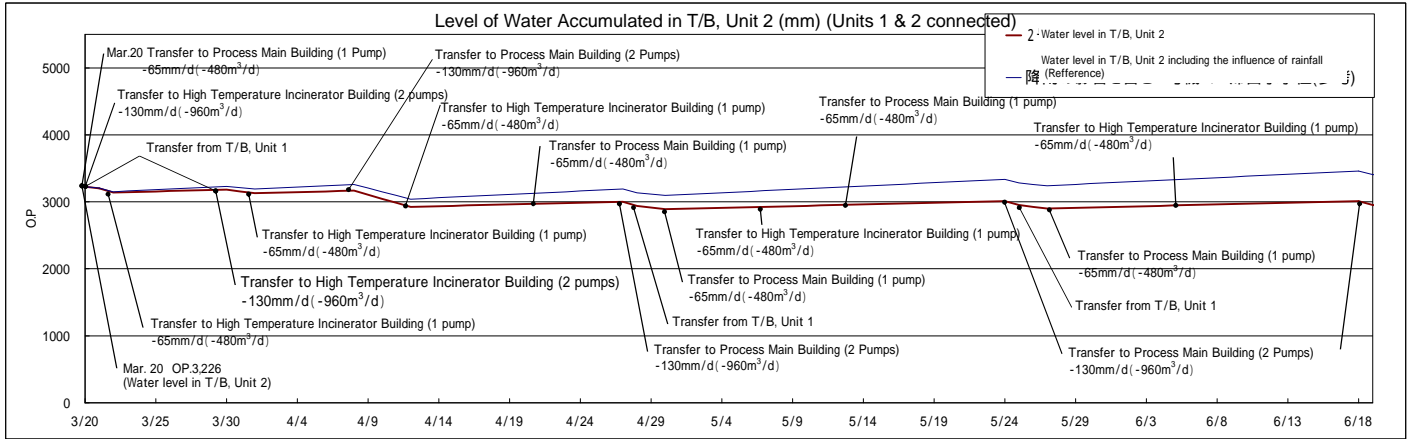
Storage Facility	Storage volume	Change from last report	Water level	Treated volume (3/7-3/13)	Cumulative treated volume	Waste produced		Change from last report	Storage capacity
						Sludge	Used vessels		
Process Main Building	approx. 15,450m ³	2,890m ³	OP.4,365	approx. 9,240m ³	approx. 277,040m ³	581m ³	3	-	700m ³
High Temperature Incinerator Building	approx. 4,010m ³	+ 640m ³	OP.2,736			385	3	+ 8	1,137
Total	approx. 19,460m³								

- 1 Shows the operational limit.
- 2 Including approx. 6,300m³ (cumulative treated volume: approx. 134,640m³) of treated volume by the 2nd Cesium adsorption apparatus.
- 3 Including 40 used vessels of 2nd Cesium adsorption apparatus.
- 4 Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption

Note:

- Water transfer from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building is scheduled. (The place the water of Unit 2 will be transferred to will be switched to High Temperature Incinerator Building. Transferring the water from Unit 3 to High Temperature Incinerator Building will be temporarily suspended.)
- The two line operation is scheduled for Cesium Adsorption Apparatus and 2nd Cesium Adsorption Apparatus (Projected capacity factor of Cesium Adsorption Apparatus: 35%, Projected capacity factor of 2nd Cesium Adsorption Apparatus: 75% (Ref.))
- Water transfer from Turbine Building of Unit 1 to Unit 2 is scheduled.

Simulation Results of Accumulated Water Treatment in T/B, Units 1 to 4



Note: - Amount of water treatment is assumed to be 1,320m³/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 considering 3-year-averaged rainfall near 1F from August to October.