

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

February 1, 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 (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 January 24, 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&2 and Unit 3&4 building will not exceed 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 (Unit 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 February 7, 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 below 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 operating ratio 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 operating ratio 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 January 31, 2012)

Classification	
<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

Storage volume ※1	Change from last report	Storage capacity ※2	
Concentrated saltwater receiving tank	97,148m <sup>3</sup>	+3,117m <sup>3</sup>	130,900m <sup>3</sup>
Freshwater receiving tank	6,771m <sup>3</sup>	+350m <sup>3</sup>	25,100m <sup>3</sup>
Concentrated waste liquid storage tank	5,447m <sup>3</sup>	▲10m <sup>3</sup>	9,500m <sup>3</sup>

※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	2,100ppm / 3ppm (sampled on Jan. 24)
Before/ after evaporative concentration	6,900ppm / 2ppm (sampled on Dec. 20)

Storage volume	change from last report	Storage volume ※2	
Waste liquid supply tank	816m <sup>3</sup>	▲327m <sup>3</sup>	1,200m <sup>3</sup>
SPT(B)	1,287m <sup>3</sup>	+155m <sup>3</sup>	3,100m <sup>3</sup>

※2 Operational Upper limit

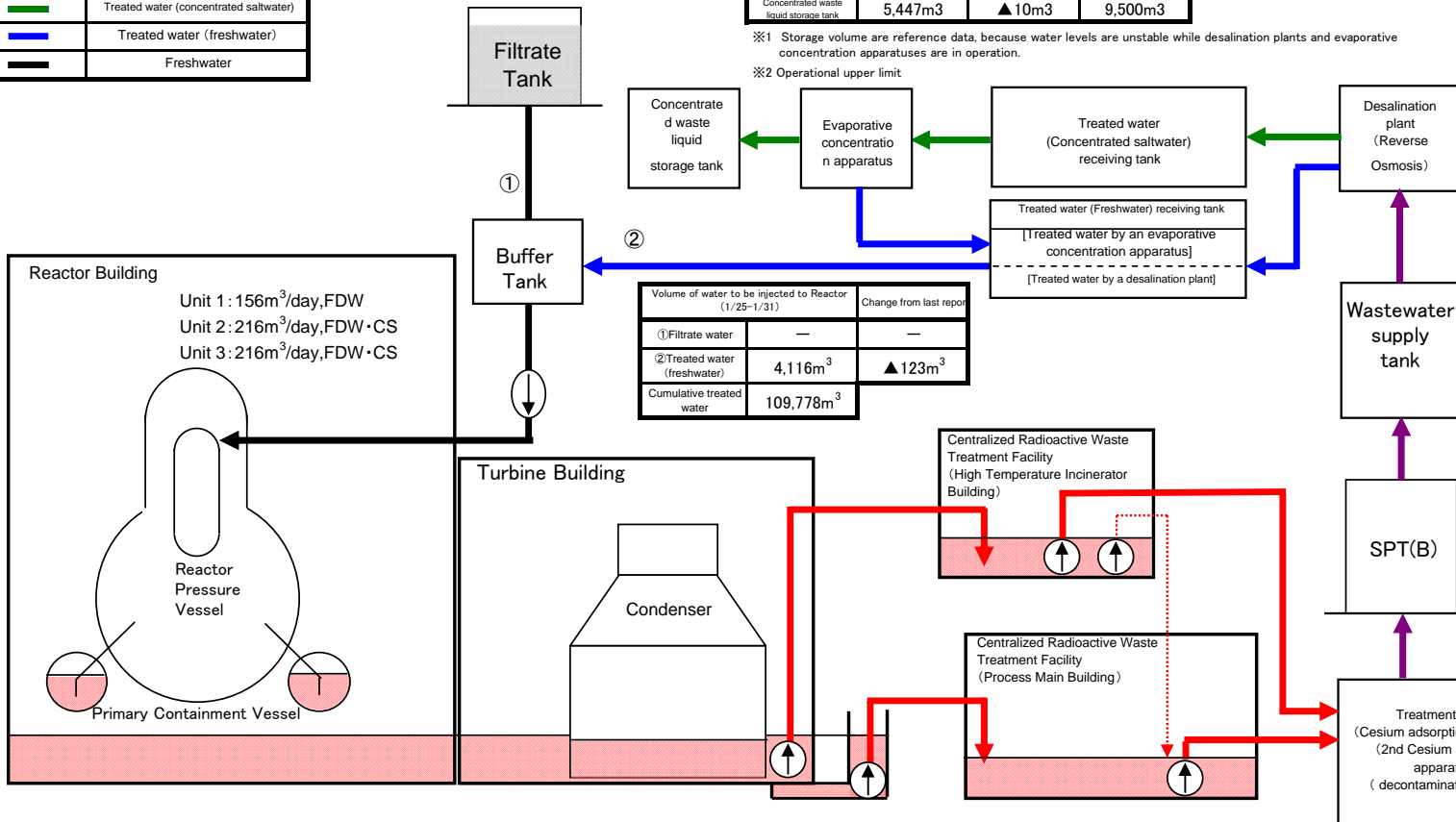
Place of sampling	Radioactivity density ※3
Process Main Building	2.8E+05 Bq/cm <sup>3</sup> (sampled on Jan.24)
Exit of cesium adsorption apparatus	4.6E+00 Bq/cm <sup>3</sup> (sampled on Jan.24)
Exit of decontamination facility	-
High Temperature Incinerator Building	2.5E+05 Bq/cm <sup>3</sup> (sampled on Jan.24)
Exit of second cesium adsorption apparatus	6.1E-01 Bq/cm <sup>3</sup> (sampled on Jan.24)

※3 Data of Cs-137 are described above.

Nuclide	DF ※4,5
I-131	- ( - )
Cs-134	6.0E+04 (2.2E+05)
Cs-137	6.1E+04 (4.1E+05)

※4 Data sampled on Jan.24 (operations of cesium adsorption facility - decontamination facility)

※5 Data in parentheses are those sampled on Jan.24 (operation of the 2nd Cesium adsorption apparatus)



Volume of water to be injected to Reactor (1/25-1/31)	Change from last report
① Filtrate water	-
② Treated water (freshwater)	▲123m <sup>3</sup>
Cumulative treated water	109,778m <sup>3</sup>

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	Approx. 13,900m <sup>3</sup>	▲30m <sup>3</sup>	OP.2,771	Process Main Building
Unit 2	Approx. 21,800m <sup>3</sup>	▲200m <sup>3</sup>	OP.3,036	
Unit 3	Approx. 23,000m <sup>3</sup>	▲500m <sup>3</sup>	OP.2,946	High Temperature Incinerator Building
Unit 4	Approx. 17,700m <sup>3</sup>	▲400m <sup>3</sup>	OP.2,959	
Total	Approx. 76,400m <sup>3</sup>			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (1/25-1/31)	Cumulative treated volume	Waste produced	Change from last report	Storage capacity
Process Main Building	Approx. 14,710m <sup>3</sup>	+830m <sup>3</sup>	OP.4,133	Approx. 7,540m <sup>3</sup>	Approx. 222,760m <sup>3</sup>	Sludge	581m <sup>3</sup>	700 ※2
High Temperature Incinerator Building	Approx. 3,590m <sup>3</sup>	▲730m <sup>3</sup>	OP.2,394	※6	※6	Used vessels	340 ※7	1,137 ※8
Total	Approx. 18,300m <sup>3</sup>							

※2 Shows the operational limit.

※6 Including approx. 5,140m<sup>3</sup> (cumulative treated volume: approx. 96,920m<sup>3</sup>) of treated volume by the 2nd Cesium adsorption apparatus.

※7 Including 30 used vessels of 2nd Cesium adsorption apparatus.

※8 Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption apparatus.

**Note:**

-Last report as of January 24, 2012

-Water transferred from Unit 2 and 3 to High Temperature Incinerator Building.

(From December 28 to January 30, water transferred to prevent freezing. On January 30, after exchanging the transfer piping to PE piping (polyethylene piping), water level was adjusted by transferring from Units 2 and 3 to the High Temperature Incinerator Building.

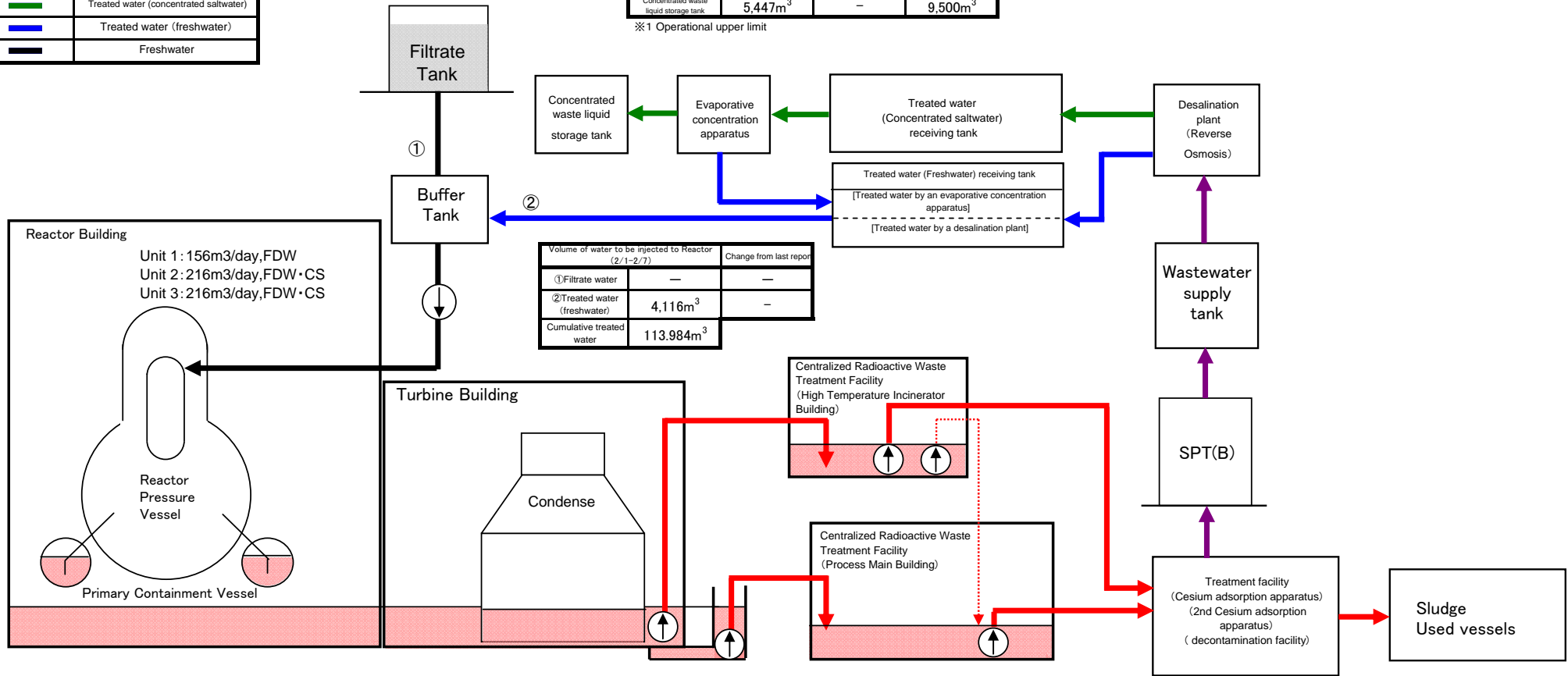
-First Cesium adsorption apparatus and 2nd Cesium adsorption apparatus have been operated in parallel (First facility utilization factor: 28.6% (Plan: 35%), Second facility utilization factor: 61.2% (Plan 60%) (reference))

# Storage and treatment of high level radioactive accumulated water (assumed situations as of February 7, 2012)

Classification	
<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

Storage volume		Change from last report	Storage capacity ※1
Concentrated saltwater receiving tank	100,256m <sup>3</sup>	+3,108m <sup>3</sup>	130,900m <sup>3</sup>
Freshwater receiving tank	7,527m <sup>3</sup>	▲756m <sup>3</sup>	25,100m <sup>3</sup>
Concentrated waste liquid storage tank	5,447m <sup>3</sup>	-	9,500m <sup>3</sup>

※1 Operational upper limit



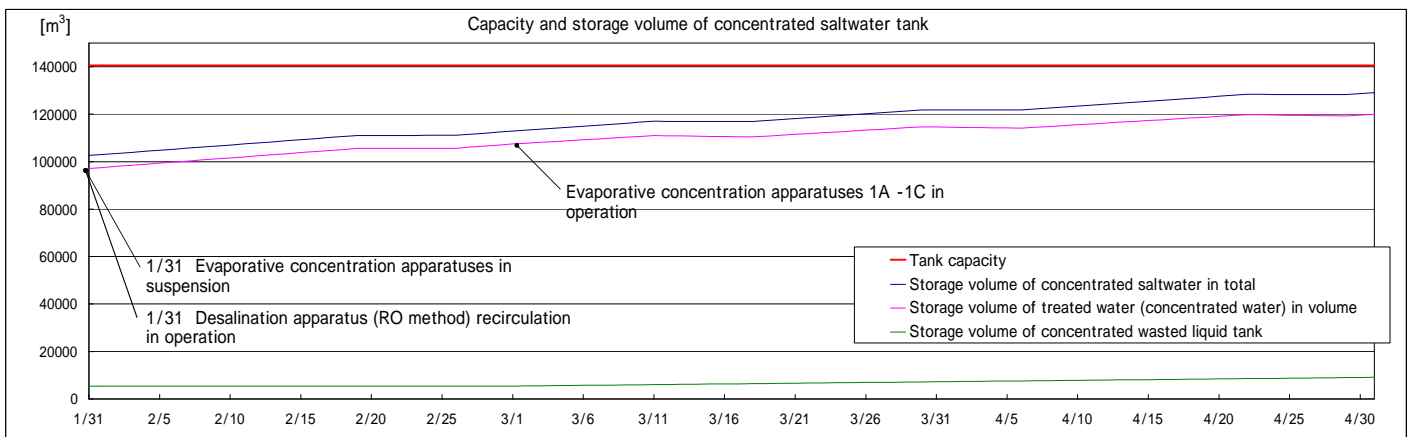
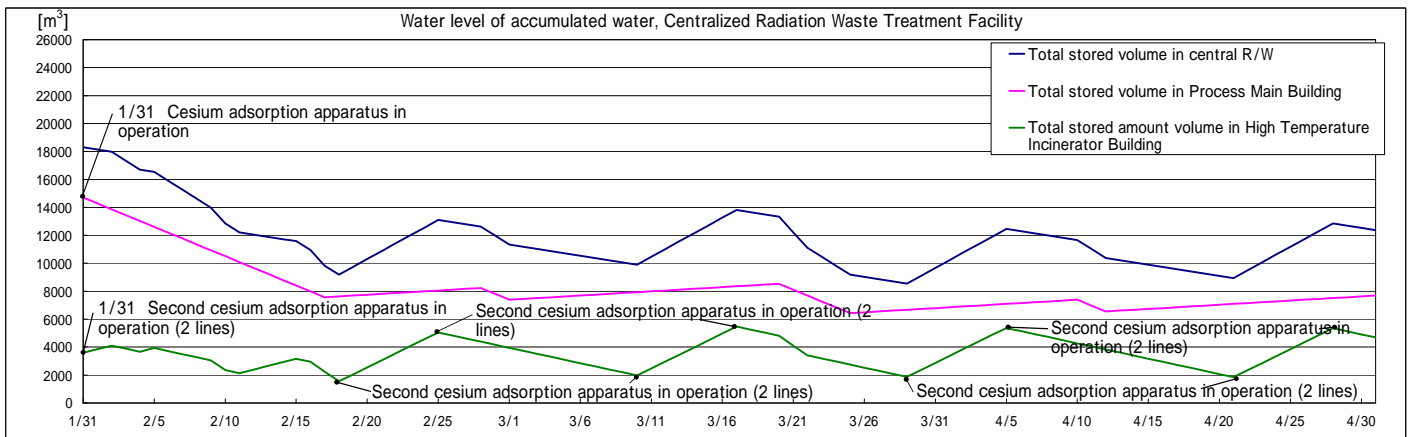
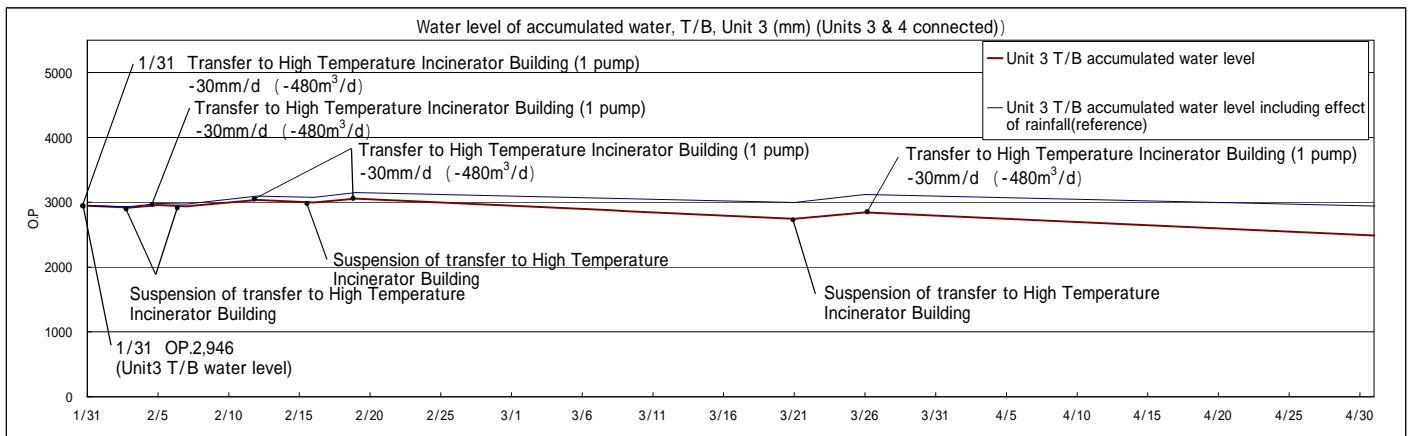
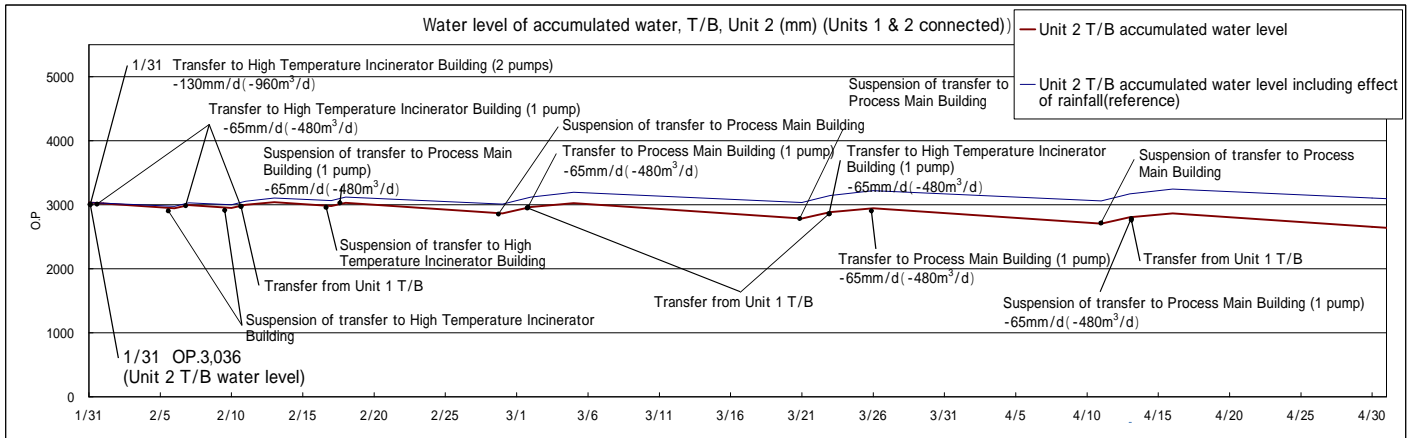
Volume of water to be injected to Reactor (2/1-2/7)		Change from last report
① Filtrate water	-	-
② Treated water (freshwater)	4,116m <sup>3</sup>	-
Cumulative treated water	113,984m <sup>3</sup>	-

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx.13,960m <sup>3</sup>	+60m <sup>3</sup>	OP.2,984	High Temperature Incinerator Building
Unit 2	approx.21,400m <sup>3</sup>	▲400m <sup>3</sup>	(Unit 2 T/B)	
Unit 3	approx.23,000m <sup>3</sup>	-	OP.2,937	High Temperature Incinerator Building
Unit 4	approx.17,700m <sup>3</sup>	-	(Unit 3 T/B)	
Total	approx.76,060m <sup>3</sup>			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (2/1-2/7)	Cumulative treated volume	Waste produced		Change from last report	Storage capacity
Process Main Building	approx.11,750m <sup>3</sup>	▲2,960m <sup>3</sup>	OP.2,903	7,980m <sup>3</sup>	approx.230,740m <sup>3</sup> ※2	Sludge	581m <sup>3</sup>	-	700m <sup>3</sup>
High Temperature Incinerator Building	approx.4,210m <sup>3</sup>	▲620m <sup>3</sup>	OP.2,904	※2		Used vessels	346 ※3	+6	1,137 ※4
Total	approx.15,960m <sup>3</sup>								

※1 Shows the operational limit.  
 ※2 Including approx. 5,040m<sup>3</sup> (cumulative treated volume: approx.101,960m<sup>3</sup>) of treated volume by the 2nd Cesium adsorption apparatus.  
 ※3 Including 30 used vessels of 2nd Cesium adsorption apparatus.  
 ※4 Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption

Note:  
 • Water planned to be transferred from Unit 2 and 3 to High Temperature Incinerator Building.  
 (Water transfer from Unit 2 and 3 to High Temperature Incinerator Building is planned to be temporarily suspended.)  
 • First Cesium adsorption apparatus and 2nd Cesium adsorption apparatus are planned to be operated in parallel (Planned facility utilization factor of the First: 35%, Planned facility utilization factor of the Second: 60%) (reference))



Note - Amount of water treatment is assumed to be 1,140m<sup>3</sup>/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.