Situation of Storage and Treatment of Accumulated Water including Highly Concentrated Radioactive Materials at Fukushima Daiichi Nuclear Power Station
(38th Release)

March 14, 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 13, 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 20, 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 13, 2012)

Attachment-1

	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	105,917m³	▲2063m³	130,900m³
Freshwater receiving tank	7,001m³	▲38m³	25,100m³
Concentrated waste liquid storage tank	5,457m³	+15m³	9,500m³

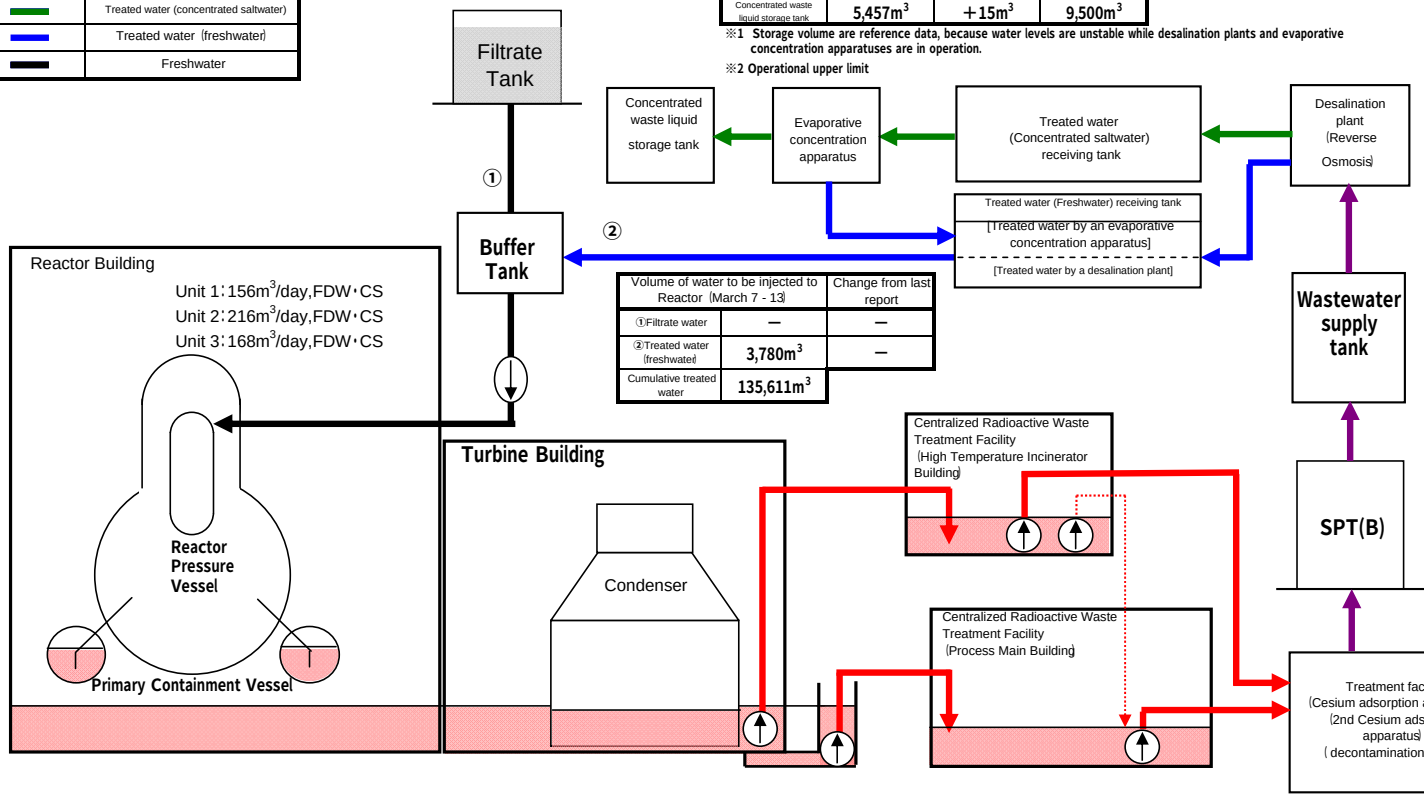
※1 Storage volume are reference data, because water levels are unstable while desalination plants and evaporative concentration apparatuses are in operation.

※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	986m³	+382m³	1,200m³
SPT(B)	974m³	+463m³	3,100m³

※2 Operational Upper limit



Volume of water to be injected to Reactor (March 7 - 13)		Change from last report
①Filtrate water	—	—
②Treated water (freshwater)	3,780m³	—
Cumulative treated water	135,611m³	

Place of sampling	Radioactivity density ※3
Process Main Building	1.7E+05 Bq/cm³ (sampled on Feb.21)
Exit of cesium adsorption apparatus	1.4E+00 Bq/cm³ (sampled on Feb.21)
Exit of decontamination facility	—
High Temperature Incinerator Building	2.1E+05 Bq/cm³ (sampled on Feb.21)
Exit of second cesium adsorption apparatus	6.1E-01 Bq/cm³ (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)

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx. 14,600m³	+400m³	OP.3,226	High Temperature Incinerator Building
Unit 2	approx. 23,100m³	+1000m³	OP.3,223	
Unit 3	approx. 24,100m³	+300m³	OP.3,073	High Temperature Incinerator Building
Unit 4	approx. 18,600m³	+500m³	OP.3,077	
Total	approx. 80,400m³			

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. 19,100m³	+3830m³	OP.5,405	approx. 2,480m³ ※6	approx. 259,580m³ ※6	Sludge	581m³	—	700m³ ※2
High Temperature Incinerator Building	approx. 4,370m³	+160m³	OP.3,035			Used vessels	377 ※7	+7	1,137 ※8
Total	approx. 23,470m³								

※2 Shows the operational limit.

※6 Including approx .2,480m³ (cumulative treated volume:approx. 122,240m³) 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.

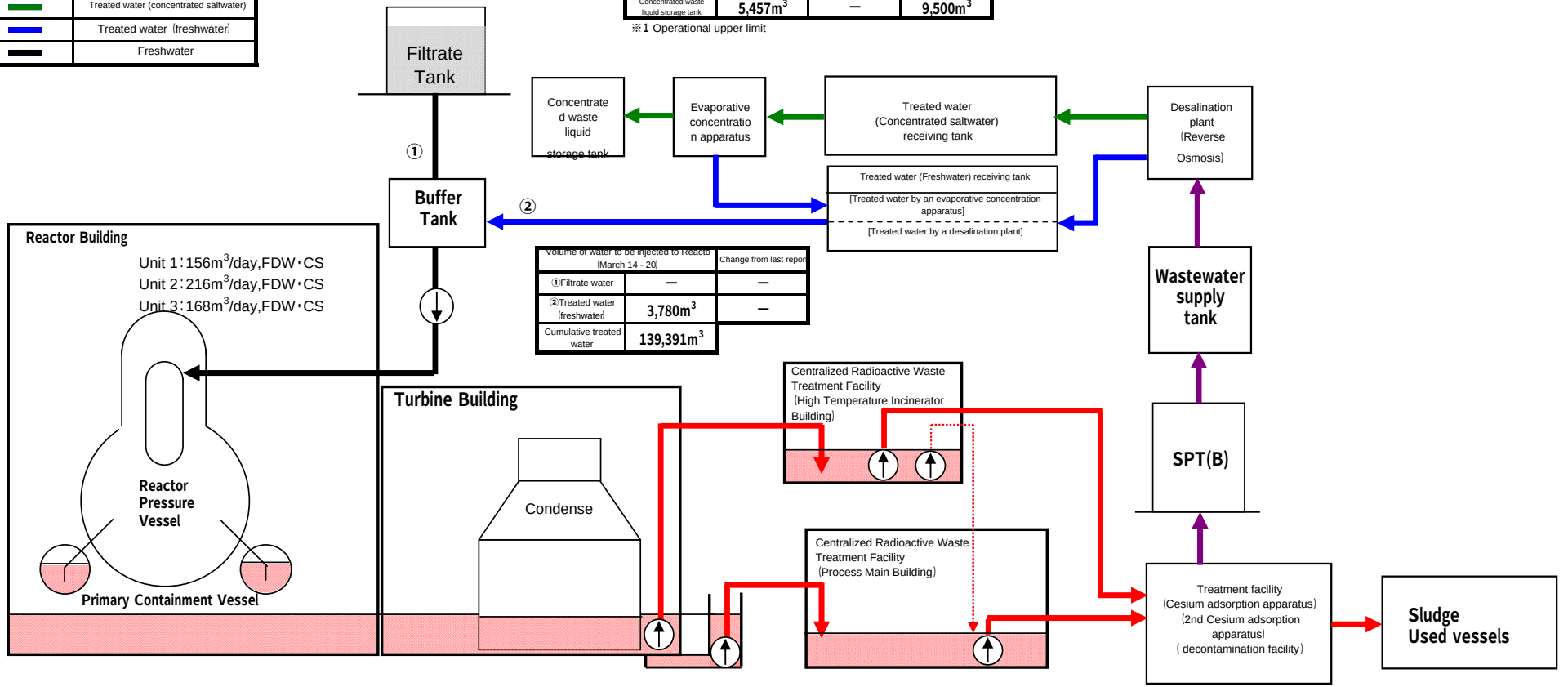
Note:
- Last report as of March 6, 2012
- Water transferred from Units 2 and 3 to Process Main Building and Temperature Incinerator Building.
  (On March 7, the transfer from Unit 2 to Precess Main Building was resumed. On March 11, the place the water was transferred to was switched from Process Main Building to High Temberature Incinerator Building. On March 7, the transfer to Process Main Building was resumed. On March 8, the transfer from U3 to Process Main Building was suspeded. Water in U3 has been transferred to Hign Temperature Incinerator Building since March 10.)
- The 2nd cesium adsorption apparatus is in operation (Capacity factor: 29.5% (Planned: 20%).
- Since March 1, the cesium adsorption apparatus has been out of service.
- On March 10, the operation of the 2nd cesium adsorption apparatus was resumed.
- On March 12, the water was transferred from the on-site baner building to the Process Main Building.
- On March 13, the 2nd cesium adsorption apparatus was stopped due to the power outage.

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

	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	108,521m^3	+2604m^3	130,900m^3
Freshwater receiving tank	7,757m^3	+756m^3	25,100m^3
Concentrated waste liquid storage tank	5,457m^3	−	9,500m^3

※1 Operational upper limit



Volume of water to be injected to Reactor (March 14 - 20)		Change from last report
①Filtrate water	−	−
②Treated 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. 14,800m3	+200m^3	OP.3,208 (Unit 2 T/B)	Process Main Building
Unit 2	approx. 23,000m3	▲100m^3		
Unit 3	approx. 24,200m3	+100m^3	OP.3,092 (Unit 3 T/B)	High Temperature Incinerator Building
Unit 4	approx. 18,700m3	+100m^3		
Total	approx. 80,700m3			

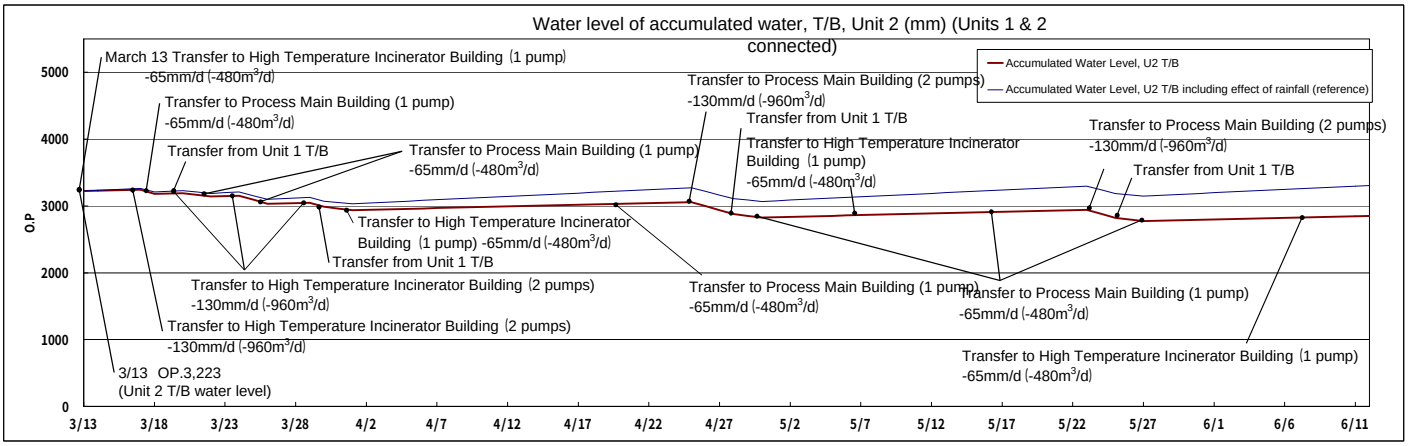
Storage Facility	Storage volume	Change from last report	Water level	Treated volume (3/7-3/13)	Cumulative treated volume	Waste produced		Change from last report	Storage capacity
Process Main Building	approx. 18,110m3	▲990m^3	OP.5,122	approx. 7,140m3 ※2	approx. 266,720m3 ※2	Sludge	581m^3	−	700m^3
High Temperature Incinerator Building	approx. 4,040m3	▲330m^3	OP.2,762			Used vessels	379 ※3	+2	1,137 ※4
Total	approx. 22,150m3								

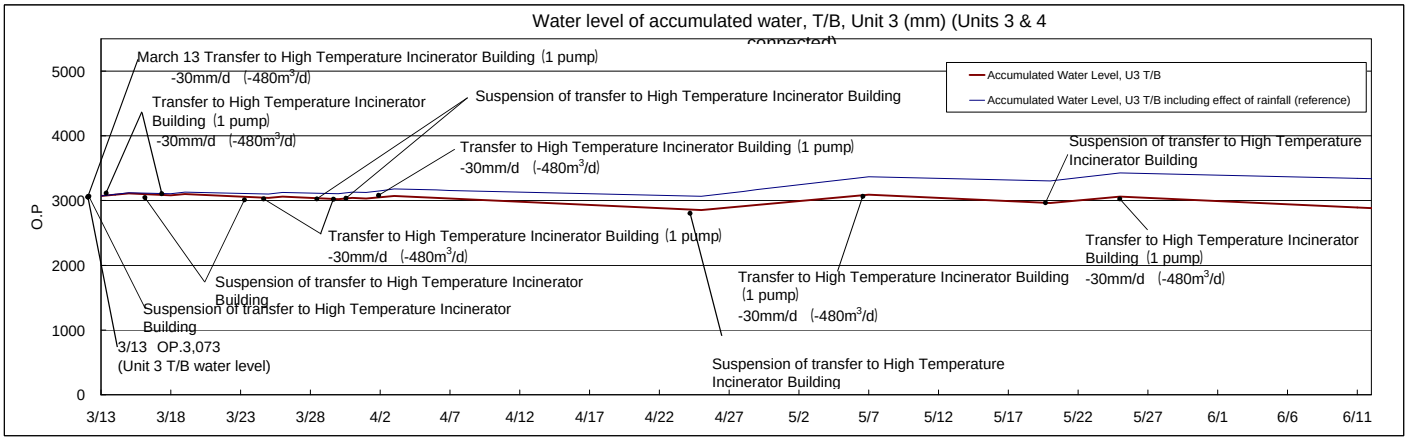
※1 Shows the operational limit.
※2 Including approx. 5,460m^3 (cumulative treated volume:approx.127,700m^3) of treated volume by the 2nd Cesium adsorption apparatus.
※3 Including 40 used vessels of 2nd Cesium adsorption apparatus.
※4 Storage capacity will vary according to stored used vessels of 2nd Cesium adsorption

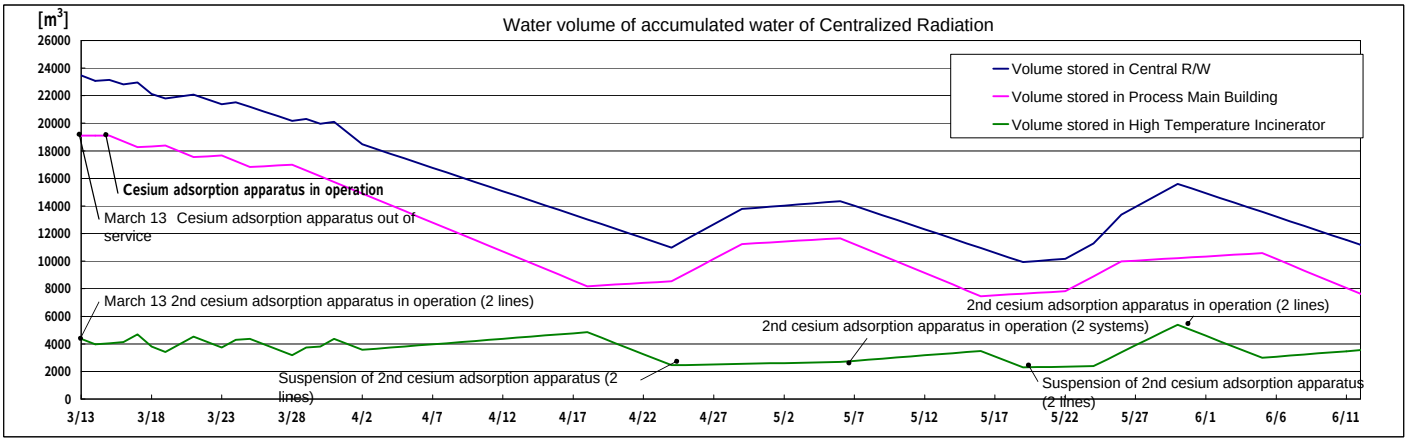
Note:
・Transfer from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building is planned . (The place the water in Unit 2 will be transferred to will be switched to Process Main Building. Transferring the water from Unit 3 to High Temperature Incinerator Building will be temporarily suspended.)
・The cesium adsorption apparatus is planned to be restarted. (Planned capacity facto: 20%)
・The 2nd cesium adsorption apparatus is planned to be in service. (Planned capacity factor: 65%)
・The 2nd cesium adsorption apparatus is planned to be stopped due to the commissioning before the treatment of the water accumulated in Process Main Building.
・The water treatment facilities (the cesium adsorption apparatus and the 2nd cesium adsorption apparatus) are planned to be stopped due to the power outage.

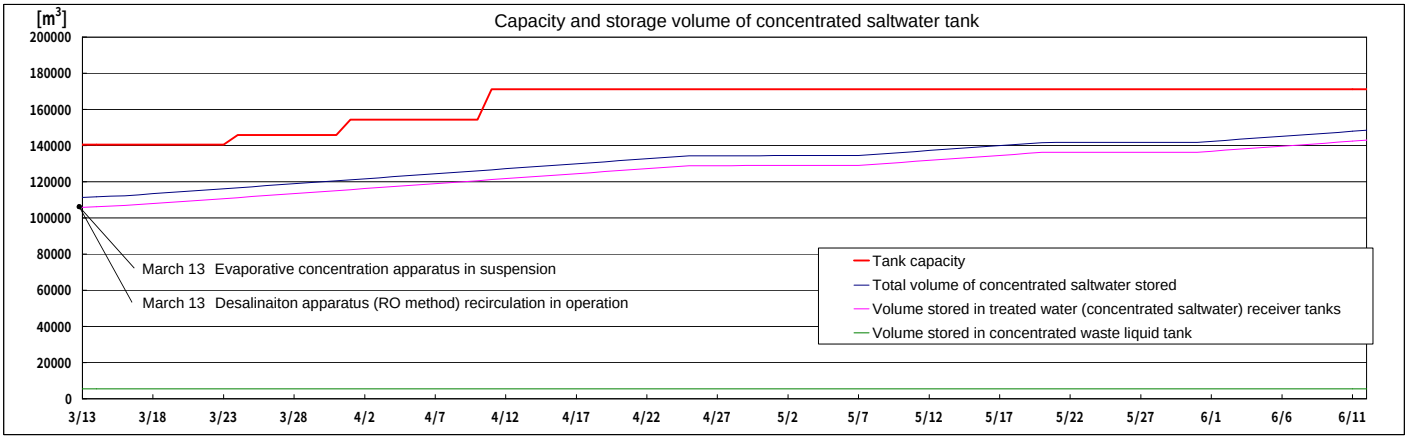
Simulation result of the treatment of accumulated water in T/B, Units 1 to 4

Attachment-3









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.