Situation of Storing and Treatment of Accumulated Water including Highly Concentrated Radioactive Materials at Fukushima Daiichi Nuclear Power Station
(30th Release)

January 18, 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 17, 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 January 24, 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

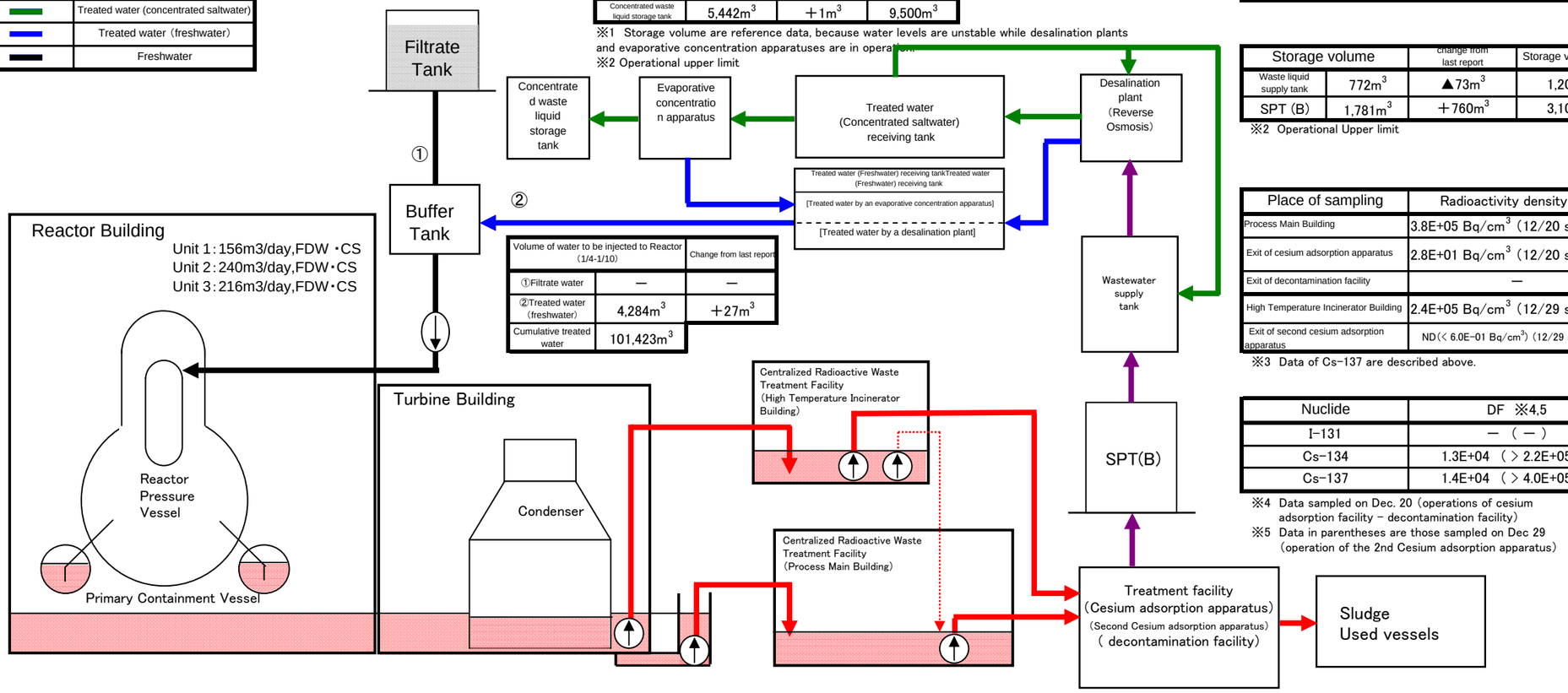
Storage and treatment of high level radioactive accumulated water (as of January 17, 2012)

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	90,419m^3	＋2,634m^3	130,900m^3
Freshwater receiving tank	7,248m^3	▲599m^3	25,100m^3
Concentrated waste liquid storage tank	5,442m^3	＋1m^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



Volume of water to be injected to Reactor (1/4-1/10)		Change from last report
①Filtrate water	—	—
②Treated water (freshwater)	4,284m^3	＋27m^3
Cumulative treated water	101,423m^3	

	Chlorine density
Before/ after desalination	7,700ppm / 12ppm（Sampled on Dec 20）
Before/ after evaporative concentration	6,900ppm / 2ppm（Sampled on Dec 20）

Storage volume		change from last report	Storage volume ※2
Waste liquid supply tank	772m^3	▲73m^3	1,200m^3
SPT (B)	1,781m^3	＋760m^3	3,100m^3

※2 Operational Upper Limit

Place of sampling	Radioactivity density ※3
Process Main Building	3.8E+05 Bq/cm^3（12/20 sampling）
Exit of cesium adsorption apparatus	2.8E+01 Bq/cm^3（12/20 sampling）
Exit of decontamination facility	—
High Temperature Incinerator Building	2.4E+05 Bq/cm^3（12/29 sampling）
Exit of second cesium adsorption apparatus	ND(< 6.0E-01 Bq/cm^3)（12/29 sampling）

※3 Data of Cs-137 are described above.

Nuclide	DF ※4,5
I-131	— （ — ）
Cs-134	1.3E+04 （ > 2.2E+05 ）
Cs-137	1.4E+04 （ > 4.0E+05 ）

※4 Data sampled on Dec. 20（operations of cesium adsorption facility – decontamination facility）
※5 Data in parentheses are those sampled on Dec 29（operation of the 2nd Cesium adsorption apparatus）

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx. 14,100m^3	▲60m^3	OP.3,231	High Temperature Incinerator Building
Unit 2	approx. 20,700m^3	▲1700m^3	OP.2,877	
Unit 3	approx. 23,200m^3	▲900m^3	OP.2,973	High Temperature Incinerator Building
Unit 4	approx. 18,200m^3	▲600m^3	OP.3,029	
Total	approx. 76,200m^3			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (1/4-1/10)	Cumulative treated	Waste produced		Change from last report	Storage capacity
Process Main Building	approx. 16,140m^3	＋2960m^3	OP.4,561	approx. 7,490m^3 ※6	約207,330m^3 ※6	Sludge	581m^3	—	700m^3 ※2
High Temperature Incinerator Building	approx. 4,650m^3	▲590m^3	OP.3,286			Used vessels	322 ※7	＋4	1,137 ※8
Total	approx. 20,790m^3								

※2 Shows the operational limit.
※6 Including treated volume: approx. 5,260m^3 (cumulative treated volume: approx.86,450m^3) by the second cesium adsorption apparatus.
※7 Including 28 used vessels of the second cesium adsorption apparatus.
※8 Storage capacity will vary according to stored used vessels of the second cesium adsorption apparatus.

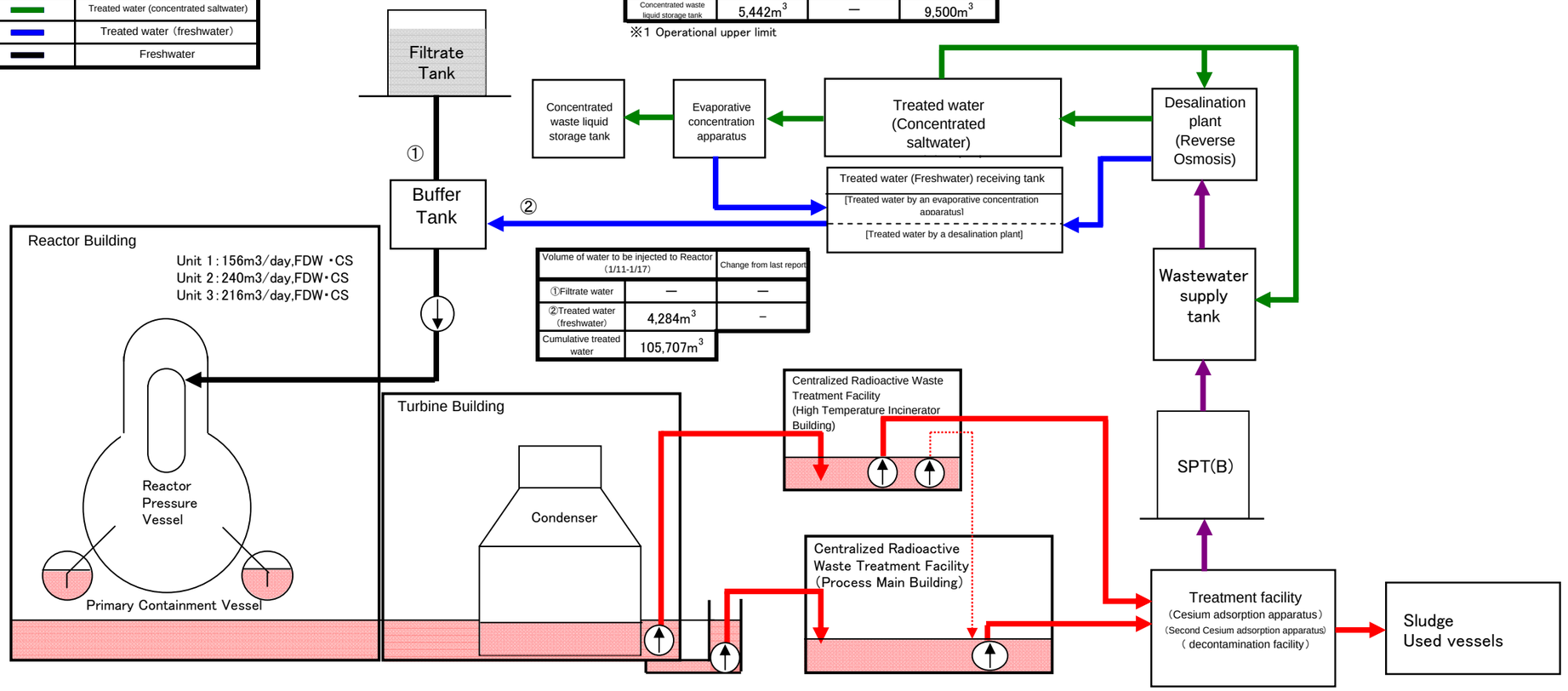
Note:
・Last report as of Jan. 10, 2012
・Transferred from Units 2 and 3 to Process Main Building & High Temperature Incinerator Building. (water transfer implemented intermittently for anti-freezing operation and water-level controldue)
・The cesium adsorption apparatus and the second cesium adsorption apparatus implemented (operating ratio of the cesium adsorption apparatus: 26.5% (previous estimated operating ratio: 30%) (reference), operating ratio of the second cesium adsorption apparatus: 62.6% (previous estimated operating ratio: 60%) (reference))
・On Jan. 11, 2012, the cesium adsorption apparatus restarted.
・On Jan. 11, 2012, transferred from On-site Bunker Building to Process Main Building.
・On Jan. 12, 2012, transferred from Unit 3 Condensed Water Storage Tank to Unit2 Turbine Building.

Storage and treatment of high level radioactive accumulated water (assumed situation as of January 24, 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	93,527m^3	＋3,108m^3	130,900m^3
Freshwater receiving tank	7,836m^3	＋588m^3	25,100m^3
Concentrated waste liquid storage tank	5,442m^3	－	9,500m^3

※1 Operational upper limit



Volume of water to be injected to Reactor (1/11-1/17)		Change from last report
①Filtrate water	－	－
②Treated water (freshwater)	4,284m^3	－
Cumulative treated water	105,707m^3	

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx. 14,290m^3	＋190m^3	OP.2,938 (Unit2 T/B)	High Temperature Incinerator Building
Unit 2	approx. 21,100m^3	＋400m^3		
Unit 3	approx. 23,500m^3	＋300m^3	OP.3,007 (Unit3 T/B)	High Temperature Incinerator Building
Unit 4	approx. 18,500m^3	＋300m^3		
Total	approx. 77,390m^3			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (1/11-1/17)	Cumulative treated
Process Main Building	approx. 13,600m^3	▲2,540m^3	OP.3,651	approx. 7,980m^3 ※2	approx. 215,310m^3 ※2
High Temperature Incinerator Building	approx. 3,800m^3	▲850m^3	OP.2,583		
Total	approx. 17,400m^3				

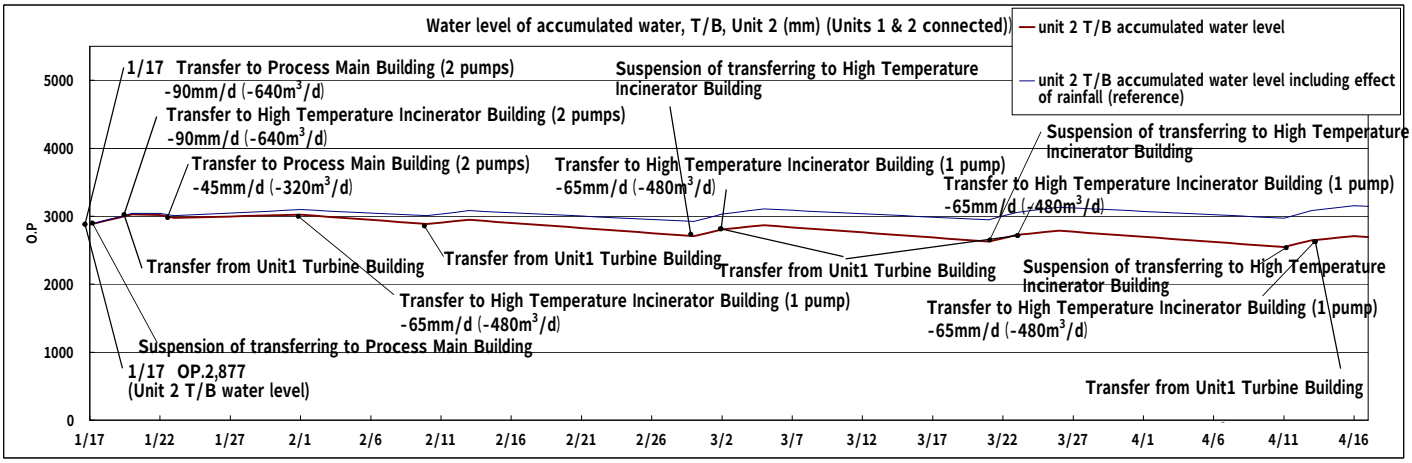
Waste produced		Change from last report	Storage capacity
Sludge	581m^3	－	700m^3 ※1
Used vessels	328 ※3	＋6	1,137 ※4

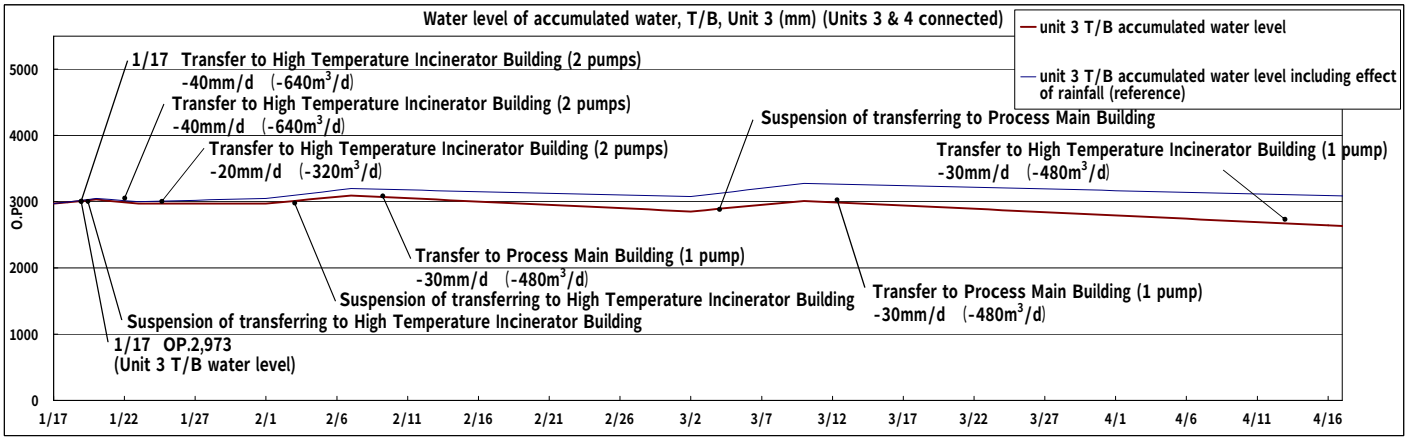
※1 Shows the operational limit.
※2 Including treated volume: approx. 5,040m3 (cumulative treated volume: approx. 91,490m3) of the second cesium adsorption apparatus.
※3 Including 30 used vessels of the second cesium adsorption apparatus.
※4 Storage capacity will vary according to stored used vessels of the second cesium adsorption apparatus.

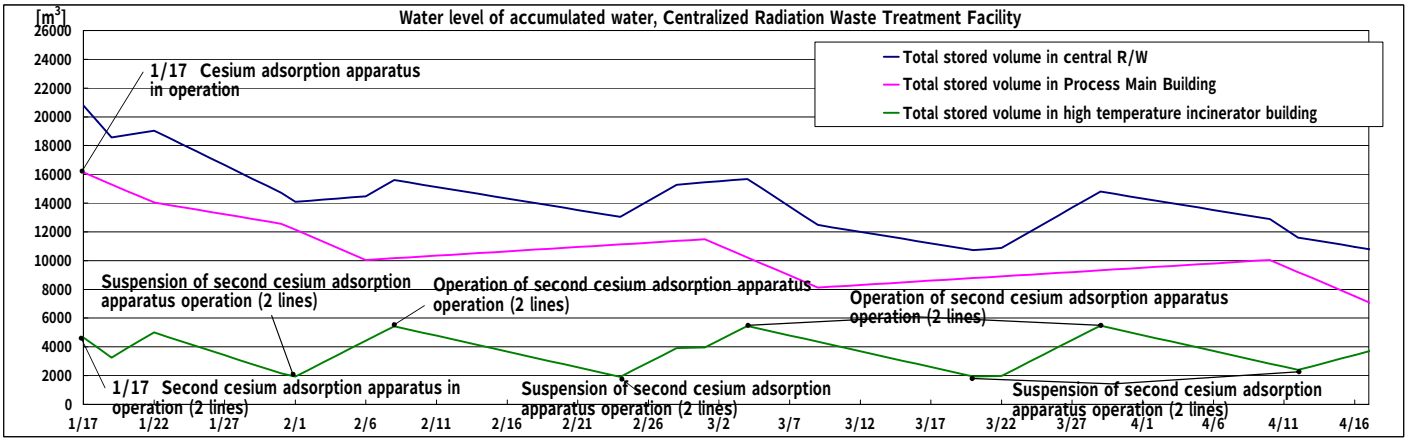
Note:
・Water in Unit 2 and Unit 3 will be transferred to Process Main Building and High Temperature Incinerator Building. (We will start to transfer the water for anti-freezing operation and water-level control)
・The cesium adsorption apparatus and the second cesium adsorption apparatus will be re-operated (Estimated operation ratio of the cesium adsorption apparatusis 35%, Estimated operation ratio of the second cesium adsorption apparatusis 60% (reference))
・Water in Unit 1 Turbine Building will be transferred to Unit 2 Turbine Building.

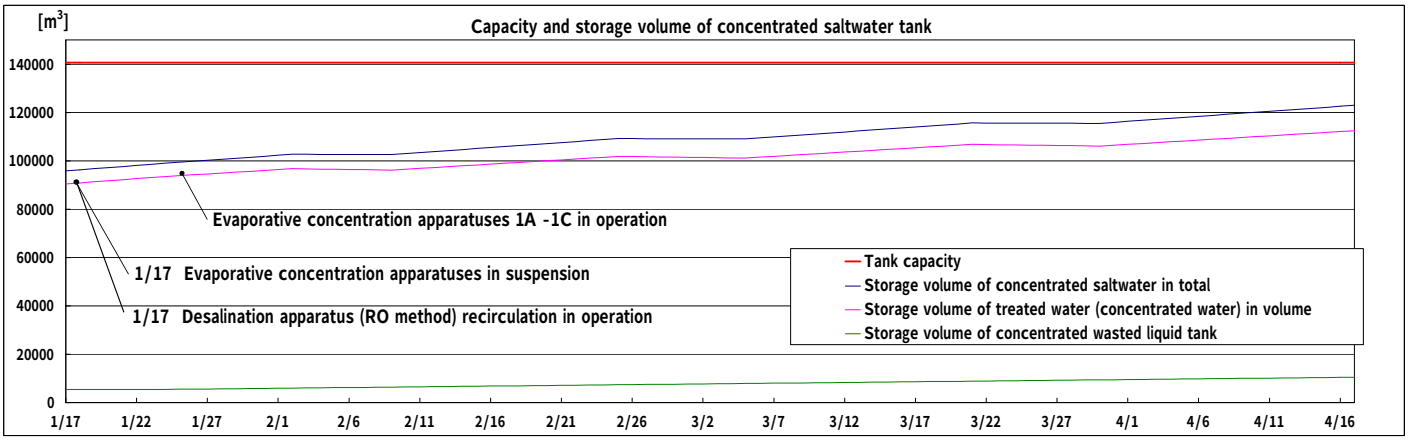
Simulation result of the treatment of accumulated water in T/B, Units 1 to 4

Attachment-3









Note
- Amount of water treatment is assumed to be 1,140m3/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.
- Pump transfer amount will be changed for preventing hose from freezing till completion of installing insulation.