Situation of Storing and Treatment of Accumulated Water including Highly Concentrated Radioactive Materials at Fukushima Daiichi Nuclear Power Station
(11th Release) [Modified Version]

September 9, 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 September 6, 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. 4,000, 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 September 13, 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, we set an immediate goal that the accumulated water level in the building will be at OP. 3,000 and the water transfer is planned on the basis of the capacity of the Process Main Building for the purpose of keeping enough capacity for the accumulated water in the building until its level reaches OP. 4,000 and keeping the accumulated water level lower than the groundwater level.

Also, treatment of the accumulated water in the Process Main Building is planned on the basis of the situation of installing the middle and low level waste water tanks, and the capacity factor and maintenance period of the radioactive material treatment equipment.

On the other hand, the accumulated water level in the High Temperature Incinerator Building is kept below OP. 4,200, and the transfer is planned when enough amount of storing capacity is reserved in the Process Main Building. Treatment of the accumulated water in the High Temperature Incinerator Building is carried out when enough storing capacity in the Process Main Building is reserved for accepting the accumulated water in the High Temperature Incinerator Building.

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 reduce through transfers and treatment. According to the forecast for 3 months, water levels in the buildings of Unit 2 and 3 are estimated to decrease to OP. 3,000 after the middle of September, supposing that there is no change in the water injection amount and no effect of rainfall, although the timing may vary in accordance with the capacity factor of the radioactive material treatment equipment, or other parameters.

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

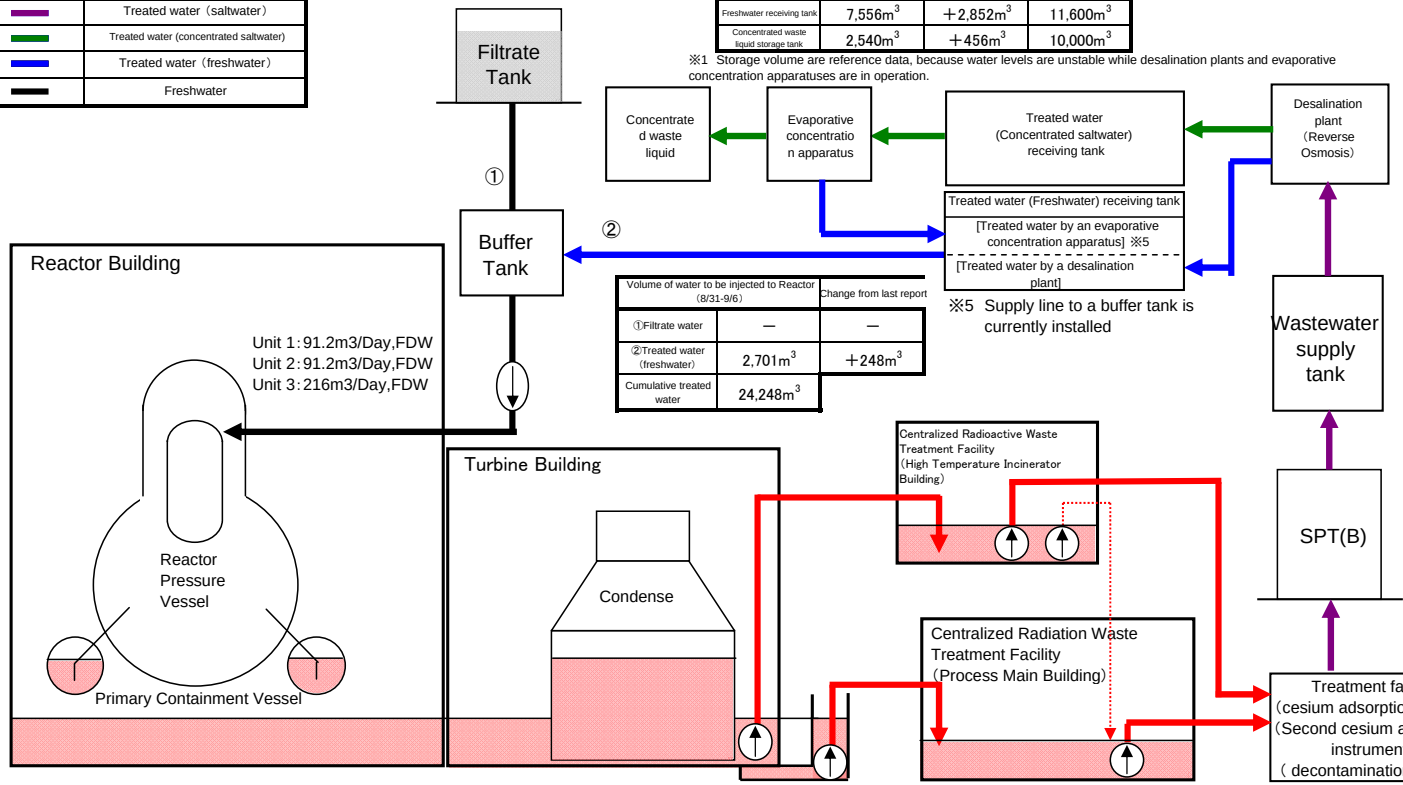
Attachment-1

Storage and treatment of high level radioactive accumulated water (as of September 6, 2011)

	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
Concentrated saltwater receiving tank	39,256m³ ＊1	＋6,295m³ ＊1	55,800m³
Freshwater receiving tank	7,556m³	＋2,852m³	11,600m³
Concentrated waste liquid storage tank	2,540m³	＋456m³	10,000m³

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



Volume of water to be injected to Reactor (8/31-9/6)		Change from last report
①Filtrate water	—	—
②Treated water (freshwater)	2,701m³	＋248m³
Cumulative treated water	24,248m³	

※5 Supply line to a buffer tank is currently installed

	Chlorine density
Before/ after desalination	6,000ppm / 20ppm（sampled on Aug. 9）
Before/ after evaporative concentration	12,000ppm / ＜1ppm（sampled on Aug. 16）

Storage volume		change from last report	Storage volume
Waste liquid supply tank	652m³	▲253m³	1,200m³
SPT(B)	1,516m³	▲1,071m³	3,500m³

Place of sampling	Radioactivity density ※2
Process Main Building	1.3E+06 Bq/cm³（sampled on Aug. 9）
Exit of cesium adsorption apparatus	1.2E+04 Bq/cm³（sampled on Aug. 9）
Exit of decontamination facility	ND(< 6.8E-01 Bq/cm³)（sampled on Aug. 9）
High Temperature Incinerator Building	1.3E+06 Bq/cm³（sampled on Aug. 19）
Exit of second cesium adsorption apparatus	2.3E+01 Bq/cm³（sampled on Aug. 19）

※2 Data of Cs-137 are described above.

Nuclide	DF ※3,4
I-131	< 4.6E+02 （ < 1.2E+03 ）
Cs-134	> 1.0E+06 （ 5.2E+04 ）
Cs-137	> 1.9E+06 （ 5.7E+04 ）

※3 Data sampled on August 9 (operations of cesium adsorption facility - decontamination facility)
※4 Data in parentheses are those sampled on September 1 (operation of the second cesium adsorption instrument)

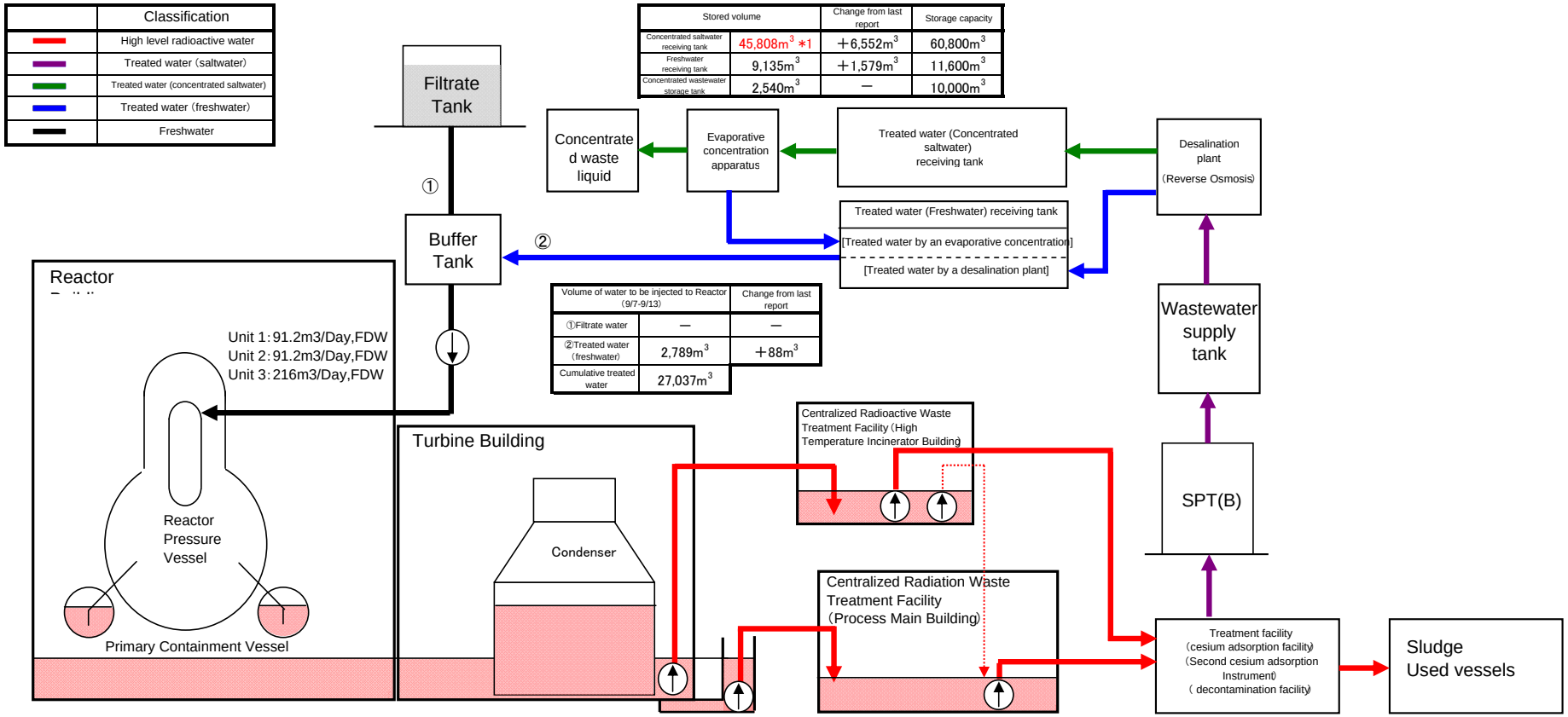
Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx.17,070m3	▲120m³	OP.4,947	High Temperature Incinerator Building
Unit 2	approx.24,400m3	▲2,000m³	OP.3,171	
Unit 3	approx.26,700m3	▲400m³	OP.3,180	Process Main Building
Unit 4	approx.19,600m3	▲800m³	OP.3,220	
Total	approx.87,770m3			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (8/24-8/30)	Cumulative treated volume	Waste produced		Change from last report	Storage capacity
Process Main Building	approx.15,770m3	▲2,260m³	OP.4,491	approx.11,450m3 ※6	approx.78,430m3 ※6	Sludge	555m³	＋61m³	800m³
High Temperature Incinerator Building	approx.4,050m3	—	OP.2,778			Used vessels	173 ※7	＋17	393 ※8
Total	approx.19,820m3								

※6 Including approx. 3,840m3 (cumulative treated volume:approx.9,080m3) of treated volume by the second cesium adsorption facility.
※7 Including 5 used vessels of Second cesium adsorption instrument.

Note:
・Last report: as of August 30, 2011.
・Transferred from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building
・cesium adsorption facility－conducted operations of 2 lines (decontamination facility and second cesium adsorption facility)
((reference)operation rate of decontamination facility :90.6%、operation rate of second cesium adsorption facility :91.4%)
・August 31 Evapolative concentration apparatus (1A, 1B, 1C) commenced operation.
・September 4 All the evaporative consentration apparatus stopped operation.
・September 4 Cesium absorption tower (additional) has installed.
*1 Correction of misdescriotions

Storage and treatment of high level radioactive accumulated water (assumed situations as of September 13, 2011)



Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx.16,500m3	▲570m^3	OP.3,034 (Unit2 T/B)	Process Main Building
Unit 2	approx.21,500m3	▲2,900m^3		
Unit 3	approx.25,500m3	▲1,200m^3	OP.3,021 (Unit3 T/B)	Process Main Building High Temperature Incinerator Building
Unit 4	approx.18,400m3	▲1,200m^3		
Total	approx.81,900m3			

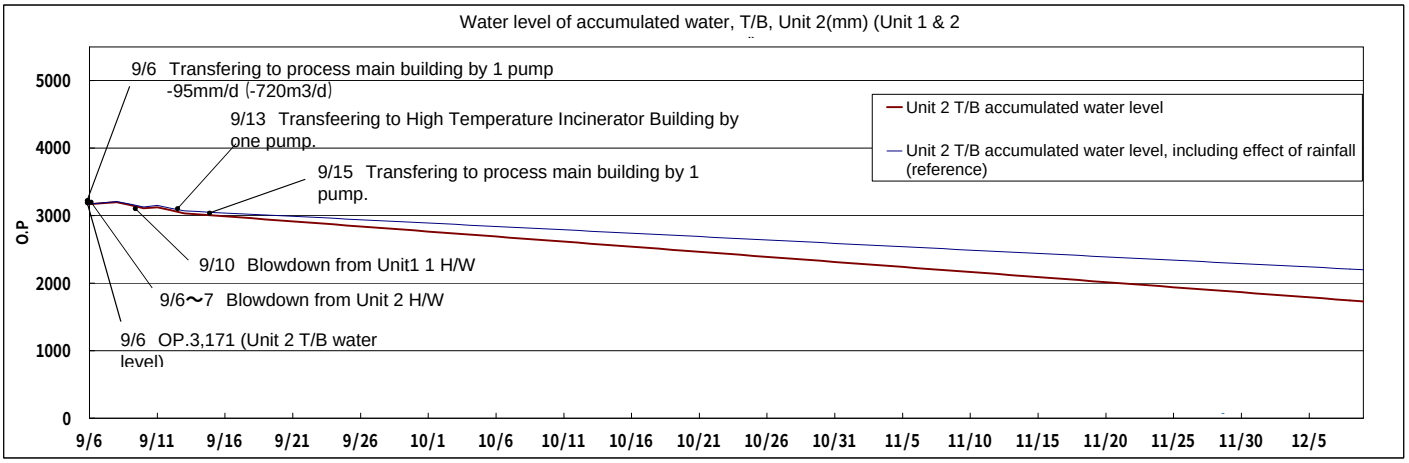
Storage Facility	Storage volume	Change from last report	Water level	Volume to be treated (8/24-8/30)	Cumulative treated volume	Waste produced		Change from now	Storage volume
Process Main Building	approx.16,320m3	+550m^3	OP.4,634	10,920m^3 ※1	approx.89,350m^3 ※1	Sludge	615m^3	60m^3	800m^3
High Temperature Incinerator Building	approx.2,850m3	▲1,200m^3	OP.1,783			Used vessels	187 ※2	+14	393 ※3
Total	approx.19,170m3								

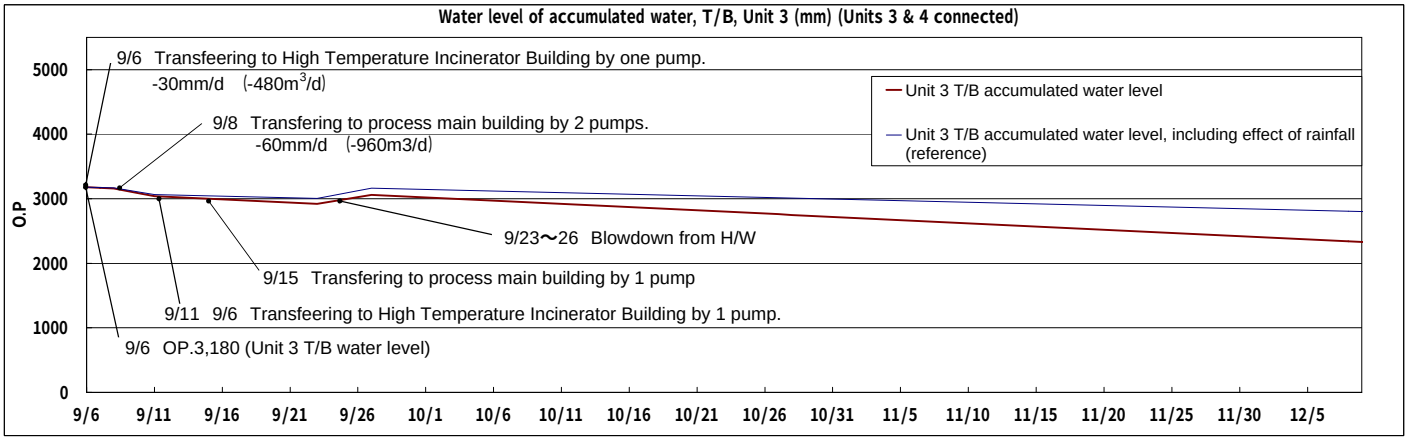
※1 Including approx. 3,360m3 (cumulative treated volume:approx.12,440m3) of treated volume by the second cesium adsorption facility.
※2 Including 7 used vessels of Second cesium adsorption instrument.
※3 Storage capacity will vary according to stored used vessels of Second cesium adsorption instrument.

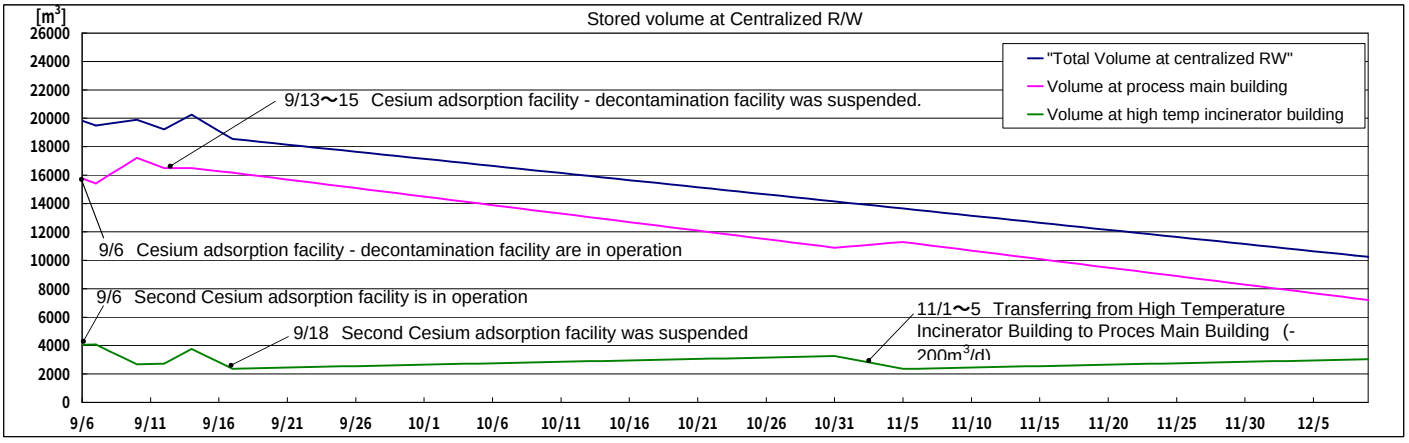
Note:
・Plan to transfer from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building.
（Transfer from Unit 2 to High Temperature Incinerator Building will switch to that from Unit 2 to Process Main Building by one pump and Transfer from Unit 3 to Process Main Building will switch to that from Unit 3 to High Temperature Incinerator Building by one pump）
・Plan 2 lines (cesium adsorption facility - decontamination facility and second cesium adsorption facility) of operations
（(reference) assumed operation rate of decontamination facility :90%、assumed operation rate of second cesium adsorption facility：80%）
・Plan to stop all the evapolate concentration apparatus.
・Plan to transfer from condenser of Unit 2 to Turbine Building.
*1 Correction of misdescriotion

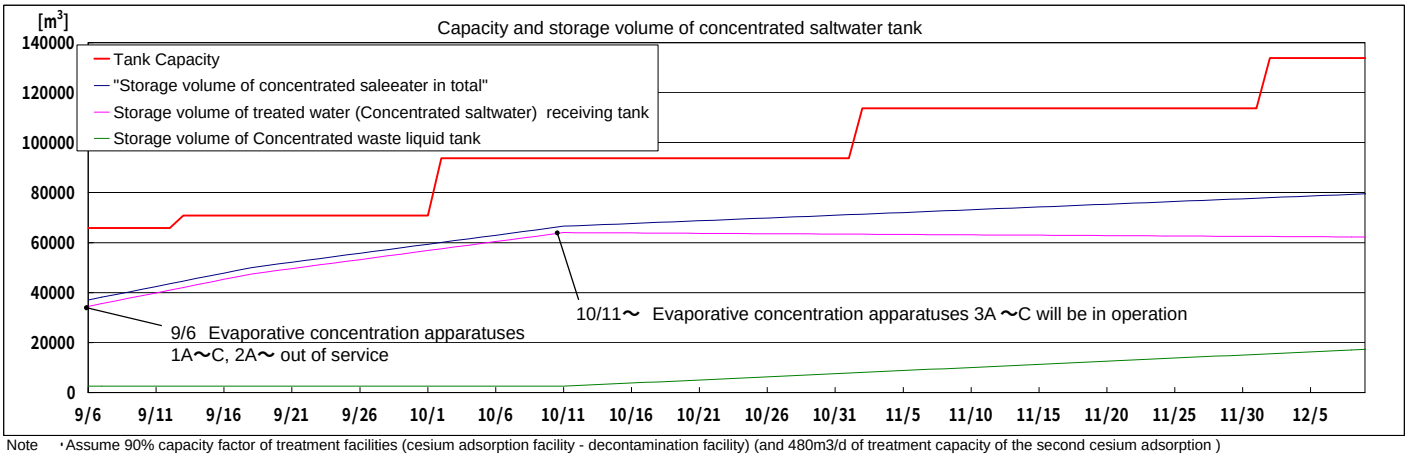
Simulation result of the treatment of accumulated water in T/B, Unit 1-4

Attachment-3









Note ・Assume 90% capacity factor of treatment facilities (cesium adsorption facility - decontamination facility) (and 480m3/d of treatment capacity of the second cesium adsorption)
・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