Situation of Storing and Treatment of Accumulated Water including Highly Concentrated Radioactive Materials at Fukushima Daiichi Nuclear Power Station
(9th Release)

August 24, 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 August 23, 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 August 30, 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

Storage and treatment of high level radioactive accumulated water (as of August 23, 2011)

Attchment-1

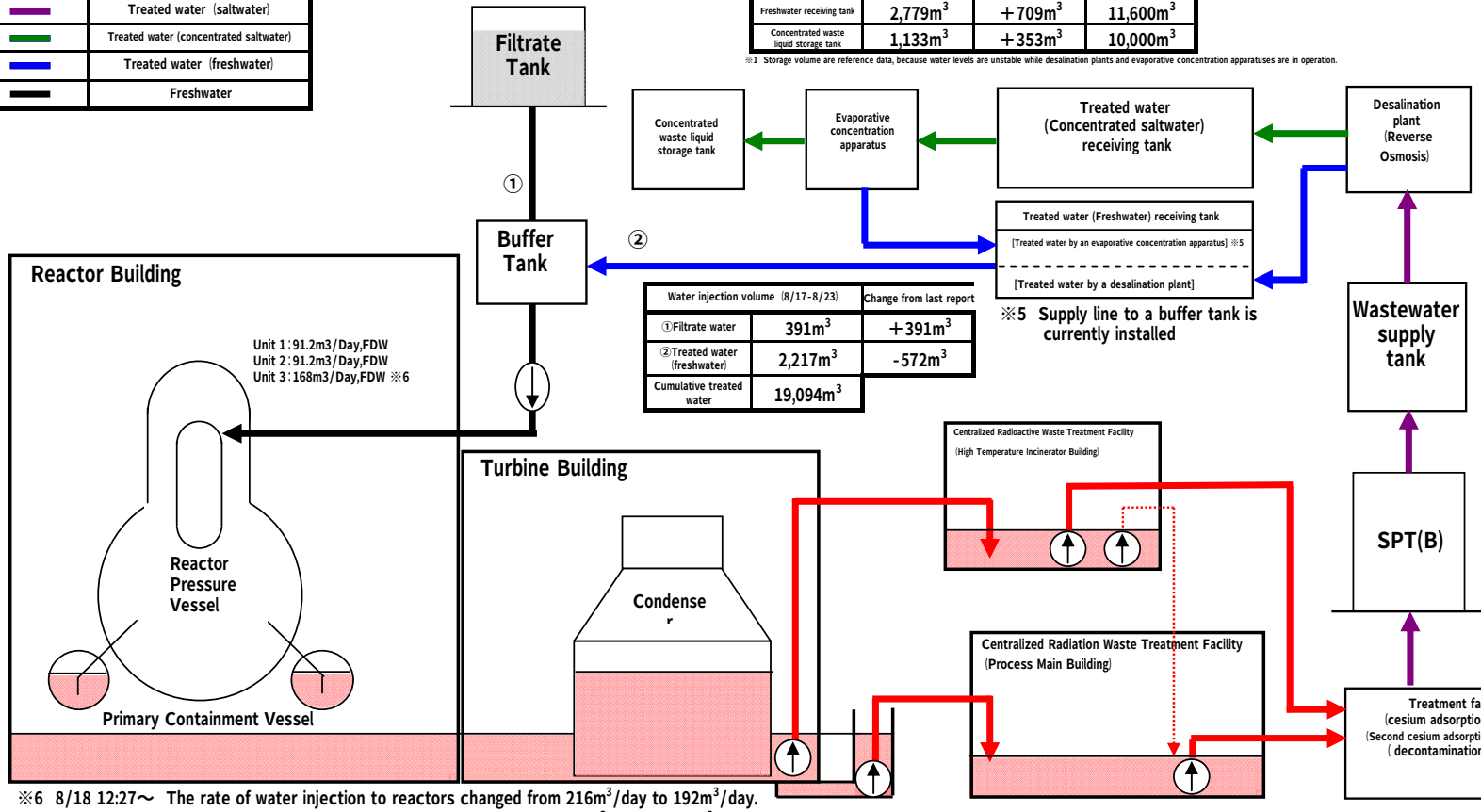
	Classification
	High level radioactive water
	Treated water (saltwater)
	Treated water (concentrated saltwater)
	Treated water (freshwater)
	Freshwater

Storage volume ※1		Change from last report	Storage capacity
Concentrated saltwater receiving tank	28,454m^3	+833m^3	40,800m^3
Freshwater receiving tank	2,779m^3	+709m^3	11,600m^3
Concentrated waste liquid storage tank	1,133m^3	+353m^3	10,000m^3

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

	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	871m^3	+104m^3	1,200m^3
SPT(B)	1,855m^3	+805m^3	3,500m^3



Water injection volume (8/17-8/23)		Change from last report
①Filtrate water	391m^3	+391m^3
②Treated water (freshwater)	2,217m^3	-572m^3
Cumulative treated water	19,094m^3	

※5 Supply line to a buffer tank is currently installed

Place of sampling	Radioactivity density ※2
Process Main Building	1.3E+06 Bq/cm^3 (sampled on Aug. 9)
Exit of cesium adsorption apparatus	1.2E+04 Bq/cm^3 (sampled on Aug. 9)
Exit of decontamination facility	ND (< 6.8E-01 Bq/cm^3) (sampled on Aug. 9)
High Temperature Incinerator Building	1.3E+06 Bq/cm^3 (sampled on Aug. 19)
Exit of second cesium adsorption apparatus	2.3E+01 Bq/cm^3 (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 August 19 (operation of the second cesium adsorption instrument)

※6 8/18 12:27～ The rate of water injection to reactors changed from 216m^3/day to 192m^3/day.
8/20 13:00～ The rate of water injection to reactors changed from 192m^3/day to 168m^3/day.

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx. 17,330m3	+310m^3	OP.4,957	Process Main Building
Unit 2	approx. 27,000m3	+100m^3	OP.3,561	
Unit 3	approx. 29,600m3	+300m^3	OP.3,553	High Temperature Incinerator Building
Unit 4	approx. 22,100m3	+400m^3	OP.3,568	
Total	approx. 96,030m3			

Storage Facility	Storage volume	Change from last report	Water level	Treated volume (8/17-8/23)	Cumulative treated volume	Waste produced		Change from last report	Storage capacity
Process Main Building	approx. 18,080m3	-590m^3	OP.5,094	approx. 6,780m3 ※7	approx. 56,010m3 ※7	Sludge	434m^3	+40m^3	800m^3
High Temperature Incinerator Building	approx. 4,300m3	-840m^3	OP.2,981			Used vessels	141	+12	192
Total	approx. 22,380m3								

※7 Including approx. 1,760m^3 of treated volume by the second cesium adsorption facility

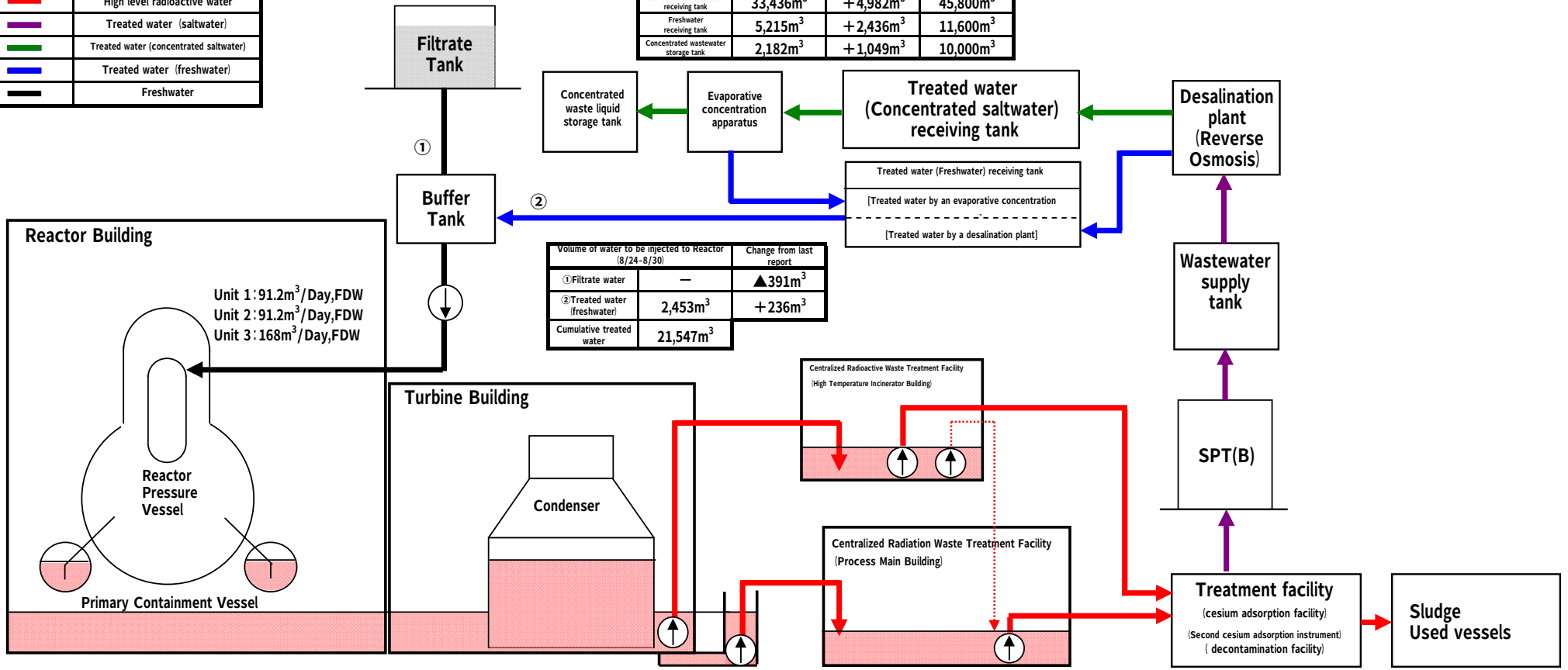
Note
・Last report: as of August 16, 2011.
・Transferred from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building (Transfer to Process Main Building was temporarily suspended due to water level adjustment in the Building (Unit 2：8/16 11:43～8/18 16:19, Unit 3: 8/15 16:46～8/19 8:51))
・8/17 8:50～17:25 Transferred from High Temperature Incinerator Building to Process Main Building; 8/21 10:20～14:31 Transferred from Site Bunker Building to Process Main Building
・8/18,19 Filtrate water was supplied from a filtrate tank to a buffer tank.
・8/19～ Have been conducting 2 lines (cesium adsorption facility - decontamination facility and second cesium adsorption facility) of operations
・8/21～ Transfer from Unit 3 to Process Main Building was switched to that from Unit 3 to High Temperature Incinerator Building.

Storage and treatment of high level radioactive accumulated water (assumed situations as of August 30, 2011)

Attchment-2

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

Stored volume		Change from last report	Storage capacity
Concentrated saltwater receiving tank	33,436m^3	+4,982m^3	45,800m^3
Freshwater receiving tank	5,215m^3	+2,436m^3	11,600m^3
Concentrated wastewater storage tank	2,182m^3	+1,049m^3	10,000m^3



Volume of water to be injected to Reactor (8/24-8/30)		Change from last report
①Filtrate water	—	▲391m^3
②Treated water (freshwater)	2,453m^3	+236m^3
Cumulative treated water	21,547m^3	

Facility	Storage volume	Change from last report	Water level in T/B	Transfer to
Unit 1	approx.17,270m3	▲60m^3	OP.3,460 (Unit 2 T/B)	Process Main Building
Unit 2	approx. 26,400m3	▲600m^3		
Unit 3	approx. 28,300m3	▲1,300m^3	OP.3,384 (Unit 3 T/B)	Process Main Building High Temperature Incinerator Building
Unit 4	approx. 20,900m3	▲1,200m^3		
Total	approx. 92,870m3			

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. 16,460m3	-1,620m^3	OP.4,671	10,920m^3 ※1	approx.66,930m^3 ※1	Sludge	494m^3	60m^3	800m^3
High Temperature Incinerator Building	approx. 3,730m3	-570m^3	OP.2,510			Used vessels	155 ※2	14 ※2	192
Total	approx. 20,190m3								

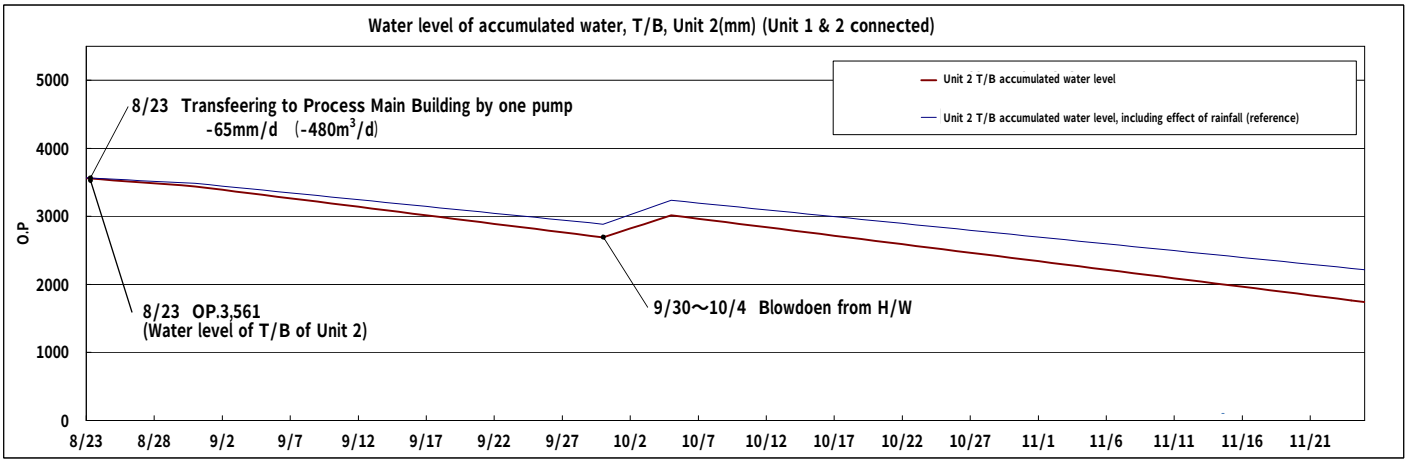
※1 Including approx. 3,360m^3 of assumed treated volume (cumulative treated volume: approx. 5,120m^3) by the second cesium adsorption facility

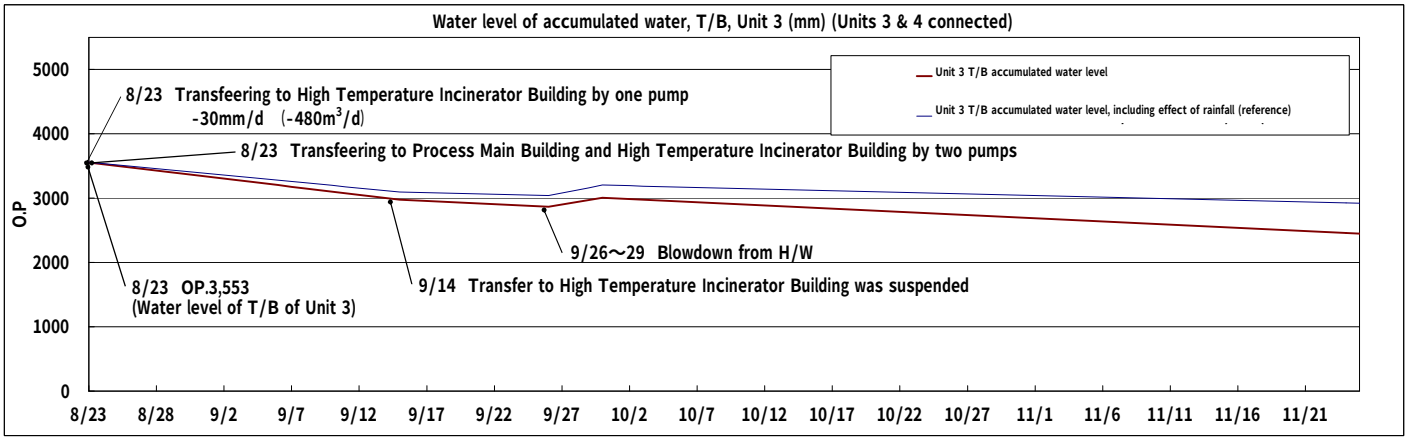
※2 Including two used vessels in the second cesium adsorption facility

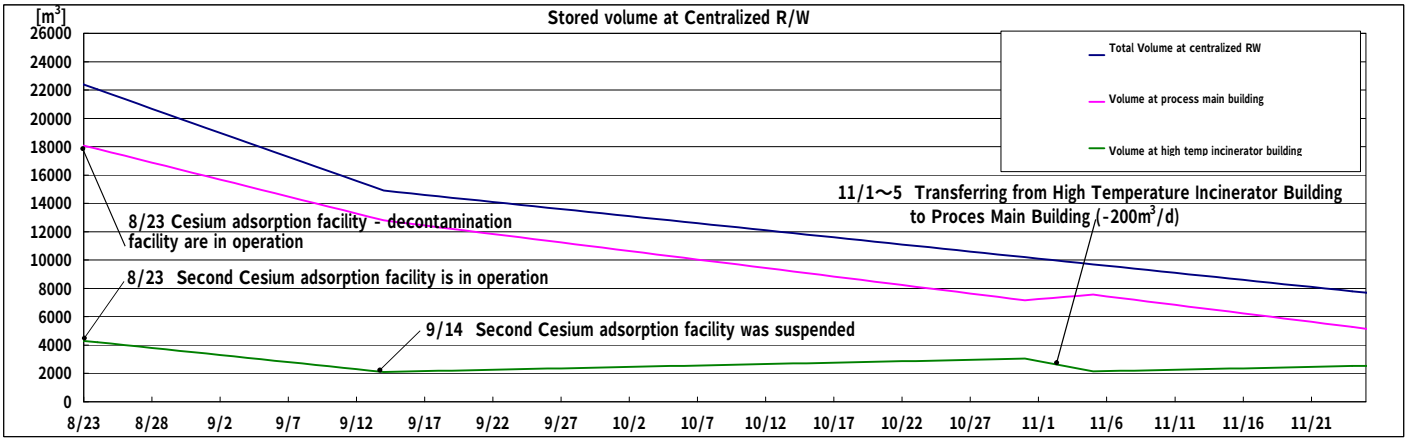
Note
- Plan to transfer from Unit 2 and 3 to Process Main Building and High Temperature Incinerator Building (We will transfer from Unit 3 to Process Main Building and High Temperature Incinerator Building by two pumps)
- Assume 90% of the capacity factor of treatment facility (cesium adsorption facility - decontamination facility)
- Plan 2 lines (cesium adsorption facility - decontamination facility and second cesium adsorption facility) of operations
- Plan to start operations of evaporative concentration apparatuses (1A,1B,1C) on August 25

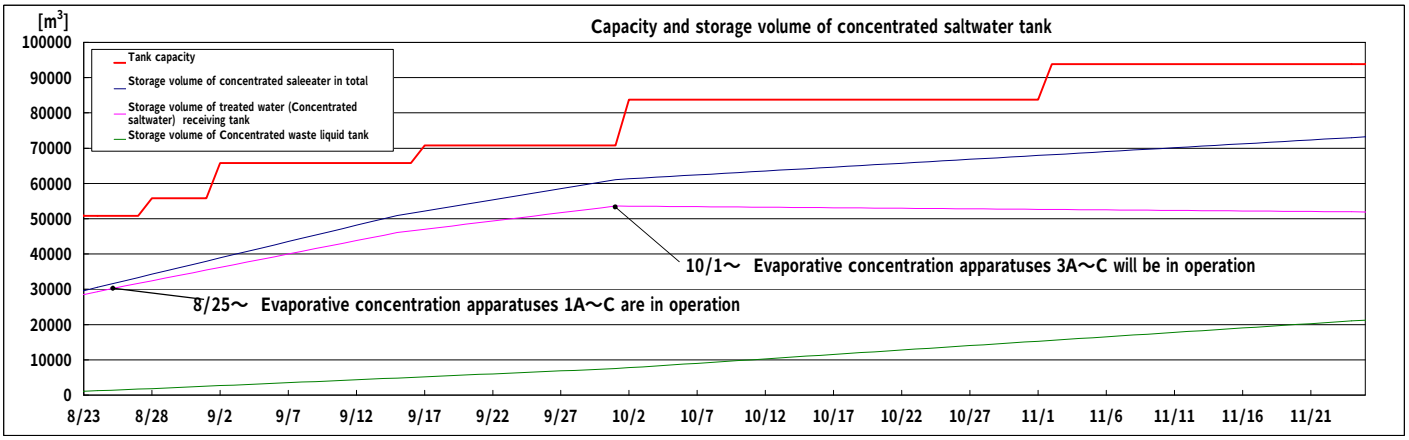
Simulation result of the treatment of accumulated water in T/B, Unit 1-4

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