

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

July 27, 2011

Tokyo Electric Power Company

**1. Purpose**

This document is to report the following matters in accordance with the instruction of “(Instruction) Regarding 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 (NISA No. 6, June 8, 2011),” dated June 9.

<Instruction>

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 in 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 amount 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 July 26, are shown in the Attachment material-1.

**3. Future forecast of storing and treatment**

**(1) Short term forecast**

Water transfer is planned so that the level of the accumulated water in the Unit 1 and 2 building and Unit 3 and 4 building will not exceed OP. 4,000, taking the stored amount in the Accumulated Water Storing Facility and the operating situation of the radioactive material treatment equipment into consideration. Water is transferred to the Process Main Building in principle, by securing the enough capacity for 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.

Stored amount 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, forecasted on August 2, are shown in the Attachment material-2.

## **(2) Middle term forecast**

Regarding the accumulated water in the 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, water transfer is planned with considering the capacity of the Process Main Building, by setting the intermediate target of the accumulated water level in the building at OP. 3,000, for the purpose of keeping enough reserve for the accumulated water level by reaching to 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 taking the situation of installing the middle and low level waste water tanks, and the operation availability and maintenance period of the radioactive material treatment equipment into consideration.

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 certain amount of store capacity is reserved in the Process Main Building. Treatment of the accumulated water in the High Temperature Incinerator Building is carried out when enough store capacity of the Process Main Building is reserved for accepting the accumulated water in the High Temperature Incinerator Building.

Stored amount in each unit building (Unit 1 to 4 (including condenser and trench)), and storing and treatment situation in the Accumulated Water Storing Facility (including underpass area close to the High Temperature Incinerator Building), forecasted for 3 months, are shown in the Attachment material-3.

Stored amount in each building and the water storage equipment is forecasted to reduce through the transfer and treatment. According to the forecast for 3 months, water levels in the buildings of both Unit 2 and 3 are estimated to decrease to OP. 3,000 in the end of September or later, supposing that there is no change in the water injection amount and no effect of rainfall, although the forecast could vary in accordance with the operation availability of the radioactive material treatment equipment, or other parameters.

Also, the water treated by the radioactive material treatment equipment can be stored in the middle and low waste water tanks, which are currently being installed.

END

# Storage and treatment of high level radioactive accumulated water (July 26, 2011)

Lines	
<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

	Stored volume	Change from last report	Storage capacity
Concentrated saltwater rece	16,565m <sup>3</sup>	+2,908m <sup>3</sup>	28,000m <sup>3</sup>
Freshwater receiving tank	1,242m <sup>3</sup> *3	-	5,000m <sup>3</sup>

\*3 Since desalination plant is operated and the water level is not still, the figure is a reference.

	Chlorine Concentration *4
Before Desalination	8,000ppm
After Desalination	19ppm

\*4 Data on 7/13

Volume of water injection to Reactor (July20-July26)		Change from last report
Freshwater	990m <sup>3</sup>	+ 377m <sup>3</sup>
Treated water (Freshwater)	1,800m <sup>3</sup>	316m <sup>3</sup>
Cumulative volume of treated water	8,510m <sup>3</sup>	

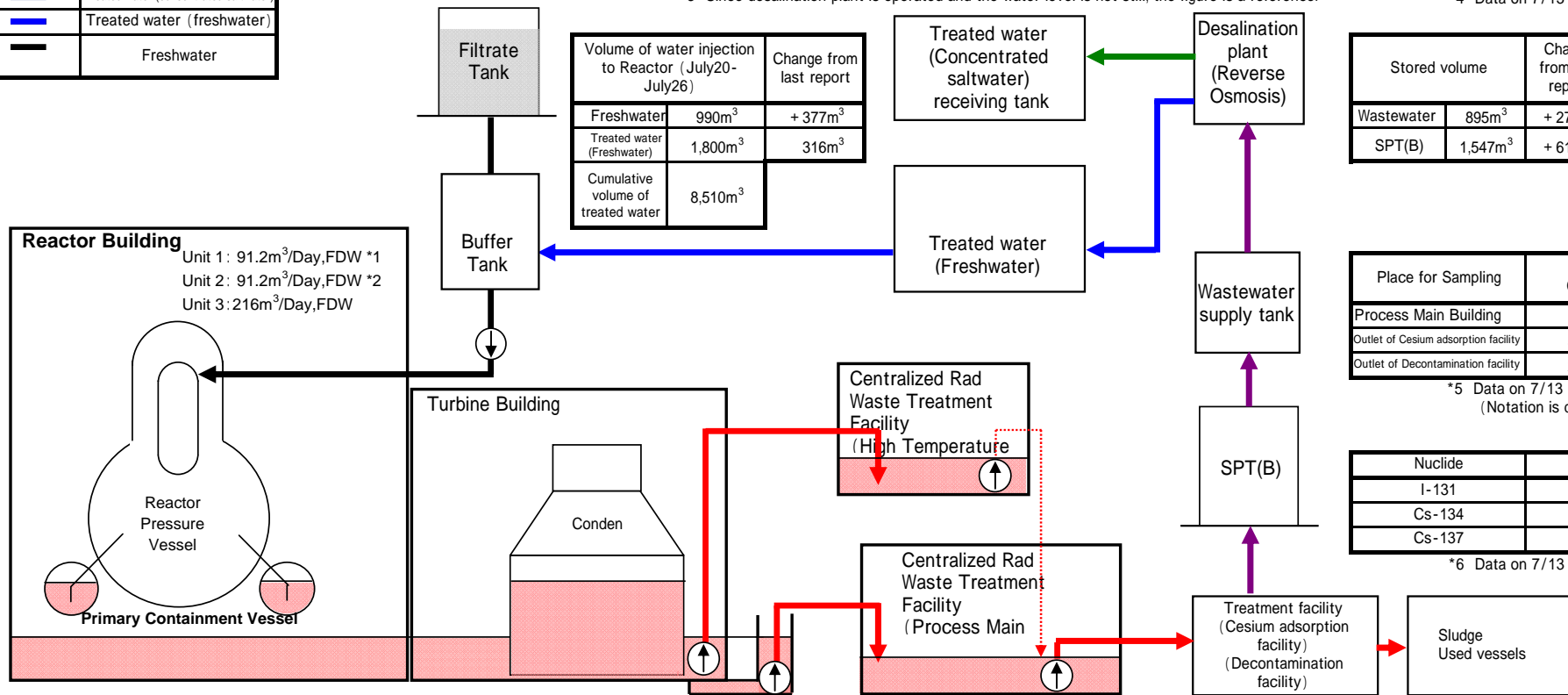
	Stored volume	Change from last report	Storage capacity
Wastewater	895m <sup>3</sup>	+ 277m <sup>3</sup>	1,200m <sup>3</sup>
SPT(B)	1,547m <sup>3</sup>	+ 619m <sup>3</sup>	3,500m <sup>3</sup>

Place for Sampling	Chlorine Concentration *5
Process Main Building	1.7E+06 Bq/cm <sup>3</sup>
Outlet of Cesium adsorption facility	5.4E+03 Bq/cm <sup>3</sup>
Outlet of Decontamination facility	2.4E+00 Bq/cm <sup>3</sup>

\*5 Data on 7/13  
(Notation is data of Cs-137.)

Nuclide	DF *6
I-131	< 3.6E+01
Cs-134	5.2E+05
Cs-137	7.1E+05

\*6 Data on 7/13



\*1,\*2 7/19 10:10 ~ Volume of water injection to Reactor is changed from 96m<sup>3</sup>/day to 91.2m<sup>3</sup>/day.

Facility	Accumulated volume	Change from last report	Water level in Turbine Building	Transfer to
Unit 1	Approx. 17,380m <sup>3</sup>	+ 500m <sup>3</sup>	OP.4,962	Process Main Building
Unit 2	Approx. 27,300m <sup>3</sup>	+ 600m <sup>3</sup>	OP.3,602	
Unit 3	Approx. 29,900m <sup>3</sup>	+ 200m <sup>3</sup>	OP.3,590	Process Main Building
Unit 4	Approx. 22,400m <sup>3</sup>	+ 200m <sup>3</sup>	OP.3,615	
Total	Approx. 96,980m <sup>3</sup>			

Storage facility	Accumulated volume	Change from last report	Water level	Treated volume (7/20-7/26)	Cumulative treated volume	Waste produced	Change from last report	Storage volume
Process Main Building	Approx. 18,530m <sup>3</sup>	+ 1,410m <sup>3</sup>	OP.5,211	Approx. 4,870m <sup>3</sup>	29,120m <sup>3</sup>	Sludge	233m <sup>3</sup>	+ 39m <sup>3</sup>
HTI Building	Approx. 5,140m <sup>3</sup>	+ 180m <sup>3</sup>	OP.3,676			Used vessels	82	+ 11
Total	Approx. 23,670m <sup>3</sup>							

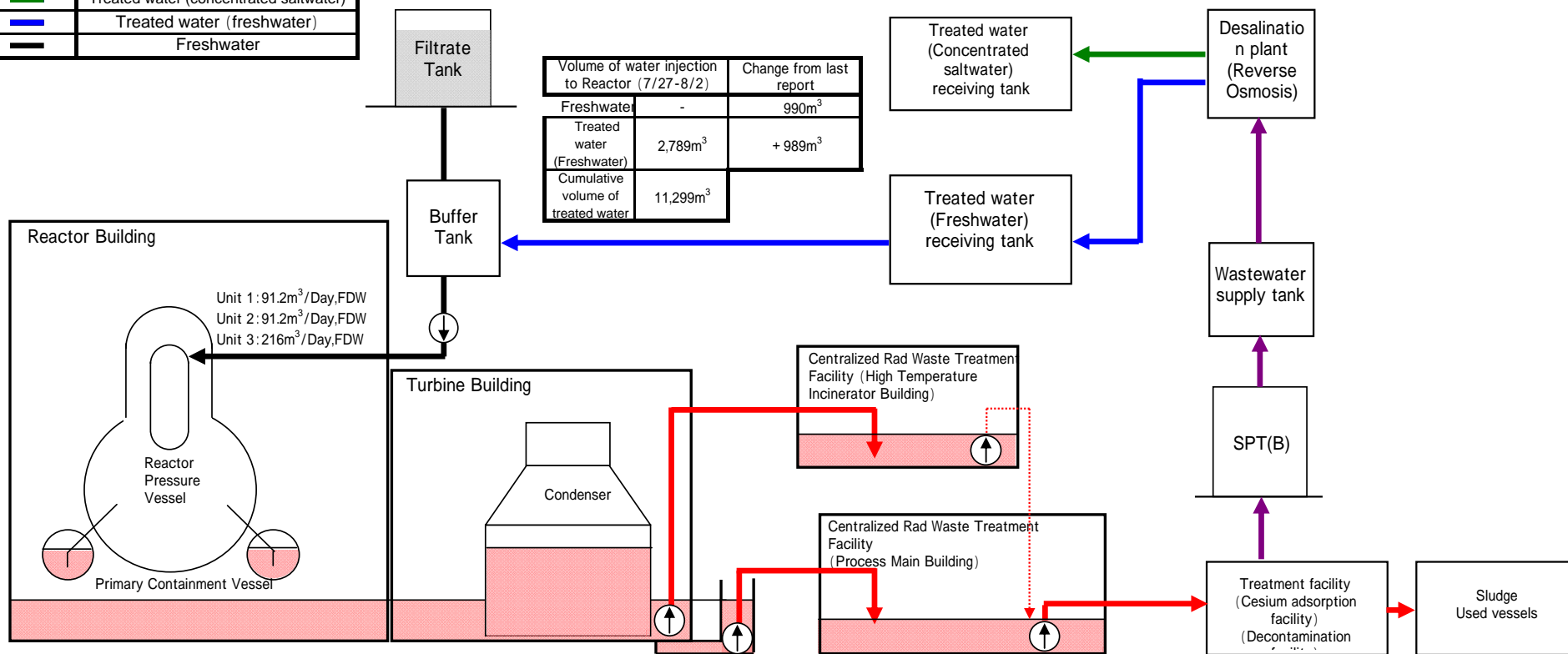
Note  
 · Previous report: July 19, 2011  
 · On July 22 to 23 and 24 to 25, filtrate was supplied from Filtrate Tank to Buffer Tank.  
 · We continue transfer from Unit 2, 3 to Process Main Building. (We temporarily stopped transferring due to the rising water level in the Process Main Building caused by the stop of power source and operation with the failure of treating facility (Unit 2: 7/21 16:04 ~ 7/22 16:56, Unit 3: 7/21 15:59 ~ 7/22 16:53))  
 · 7/23 14:15 ~ 19:00 Transferring from High Temperature Incinerator Building to Process Main Building

# Storage and treatment of high level radioactive accumulated water (Forecast for August 2, 2011) Attachment-2

Lines	
	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	20,093m <sup>3</sup>	+ 3,528m <sup>3</sup>	28,000m <sup>3</sup>
Freshwater receiving tank	805m <sup>3</sup>	437m <sup>3</sup>	5,000m <sup>3</sup>

Volume of water injection to Reactor (7/27-8/2)		Change from last report
Freshwater	-	990m <sup>3</sup>
Treated water (Freshwater)	2,789m <sup>3</sup>	+ 989m <sup>3</sup>
Cumulative volume of treated water	11,299m <sup>3</sup>	



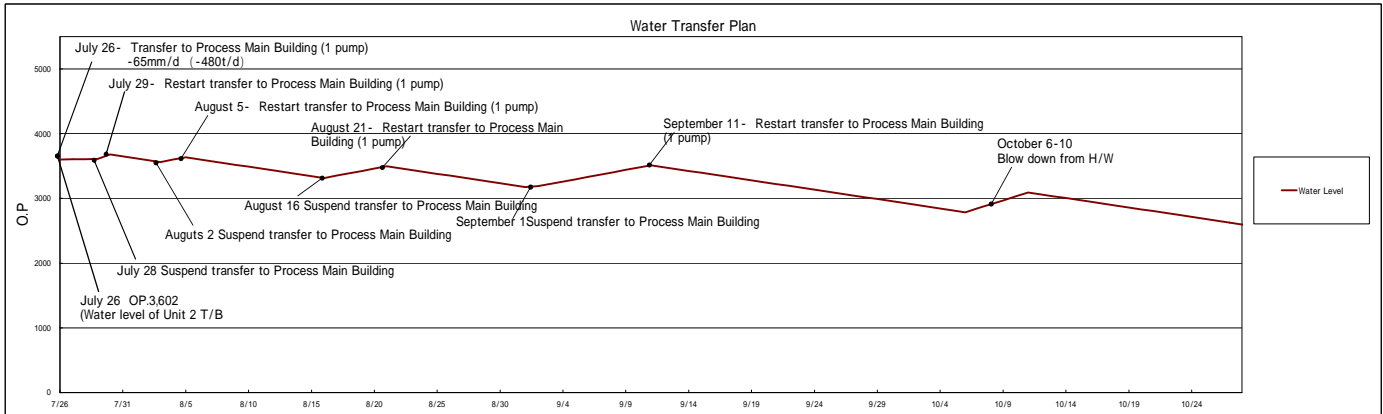
Facility	Accumulated volume	Change from last report	Water level in Turbine Building	Transfer to
Unit 1	Approx. 17,150m <sup>3</sup>	230m <sup>3</sup>	OP.3.590 (T/B of Unit 2)	Process Main Building
Unit 2	Approx. 27,200m <sup>3</sup>	100m <sup>3</sup>		
Unit 3	Approx. 29,400m <sup>3</sup>	500m <sup>3</sup>	OP.3.533 (T/B of Unit 3)	
Unit 4	Approx. 22,000m <sup>3</sup>	400m <sup>3</sup>		
Total	Approx. 95,750m <sup>3</sup>			

Storage facility	Accumulated volume	Change from last report	Water level	Treated volume (7/27-8/2)	Cumulative treated volume	Waste produced	Change from now	Storage volume
Process Main Building	Approx. 19,210m <sup>3</sup>	+ 680m <sup>3</sup>	OP.5.389	Approx. 5,880m <sup>3</sup>	Approx. 35,000m <sup>3</sup>	Sludge	280m <sup>3</sup>	800m <sup>3</sup>
HTI Building	Approx. 5,150m <sup>3</sup>	+ 10m <sup>3</sup>	OP.3.686			Used vessels	98	192
Total	Approx. 24,360m <sup>3</sup>						16	

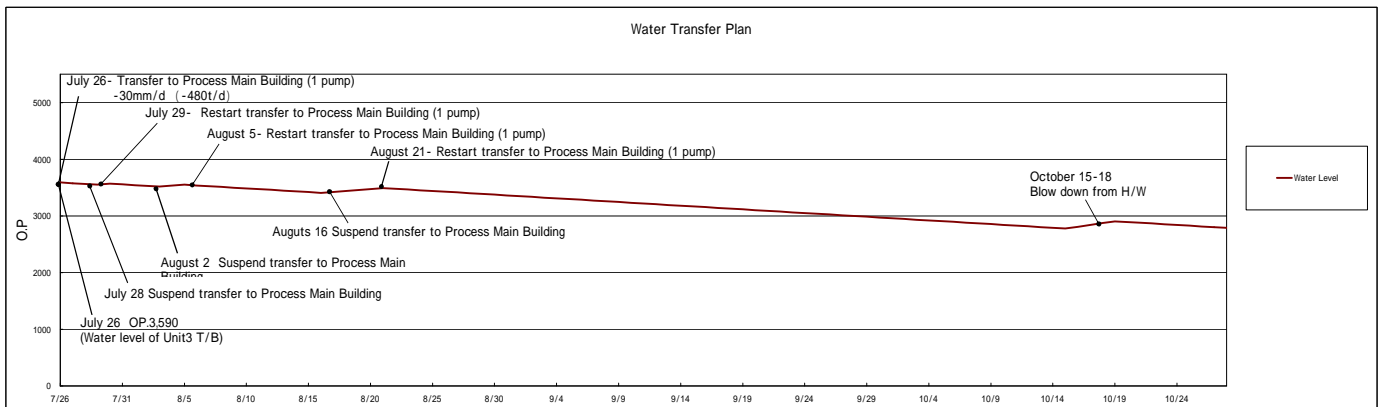
Note

- We plan to resume transfer from Unit 2 to Process Main Building.
- We plan to continue transfer from High Temperature Incinerator Building to Process Main Building.
- The capacity factor of the Treatment facility is assumed at 70%.

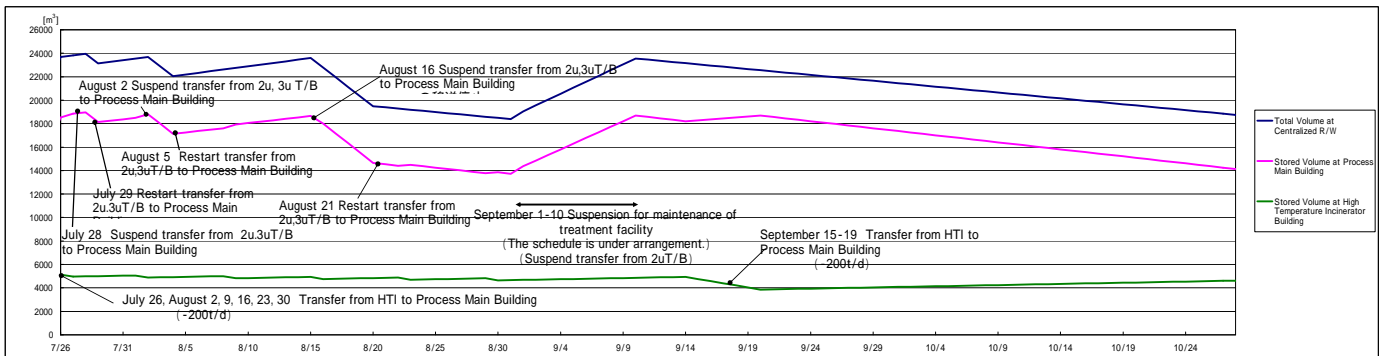
Water Level of Accumulated Water, Unit2 (mm) (Unit 1&2 connected)



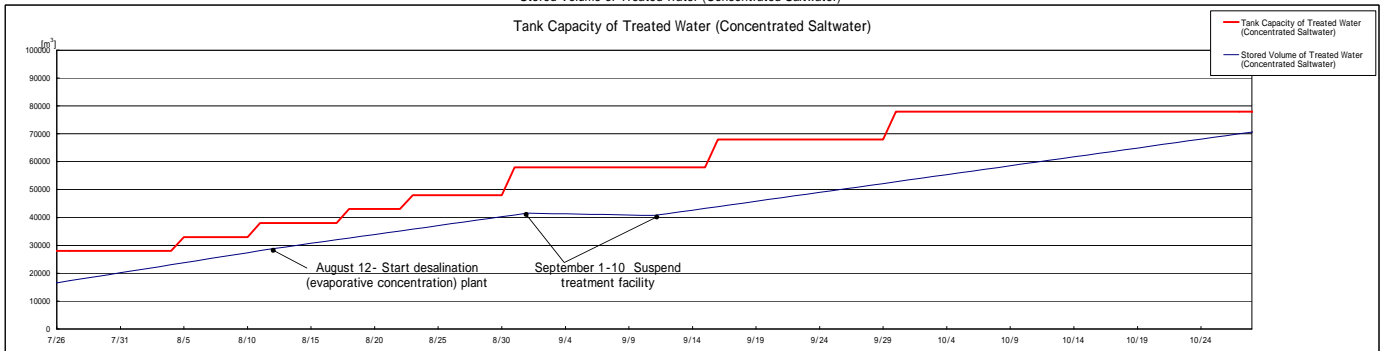
Water Level of Accumulated Water, Unit 3 (mm) (Unit 3 &4 connected)



Stored Volume at Centralized R/W



Tank Capacity of Treated Water (Concentrated Saltwater) and Stored Volume of Treated Water (Concentrated Saltwater)



The assumed operation rate is 70% until middle of August and later then 90%.