Fukushima Daiichi Nuclear Power Station
Revision of future monitoring plan for quick tritium measurements

＜Reference document＞
December 25, 2023
Tokyo Electric Power Company Holdings, Inc.
Fukushima Daiichi Decontamination & Decommissioning Engineering Company

○ In discharging ALPS treated water diluted with seawater into the sea, the surrounding sea area has been monitored to ensure that the water to be discharged is dispersing sufficiently. Index, as “discharge suspension level”, has been set in order to determine if the discharge needs to be suspended as the facility operation in the event that sea area monitoring results indicate that the water discharged is not dispersing sufficiently.

- In the vicinity of the discharge outlet (10 locations within 3km of the power station)

  The index for this area has been set at **700 Bq/liter**, which is based on the maximum management value of tritium concentration during the sea discharge stipulated in the implementation plan.

- Outside the vicinity of the discharge outlet (4 locations within a 10km radius in front of the power station)

  The index for this area has been set at **30 Bq/liter**, which is 1.5 times of 20 Bq/liter, the value which clearly exceeds the maximum tritium concentration in the sea area in front of nuclear power stations throughout Japan over the last three years (20 Bq/liter).

○ If concentrations approx. half of the index (discharge suspension level) are detected, facilities, operation status, and operational procedures will immediately be inspected for problems, and seawater will be resampled. Monitoring frequency will be increased if necessary based on the results.

○ Detection limit of monitoring performed with index (discharge suspension level) will be raised to quickly ascertain sea conditions. Furthermore, if conditions that differ from normal are found during detailed monitoring by various organizations performed in accordance with the comprehensive monitoring plan, the necessary responses will be considered and implemented.

○ For these quick tritium measurements taken in the vicinity of the discharge outlet, the monitoring frequency has been increased from once a week to daily after the commencement of the discharge.

< Announced by September 28, 2023 >

○ Since the commencement of discharge, quick tritium measurements have been performed every day in the vicinity of the discharge outlet (10 locations within a 3km of the power station). In light of the analysis results that we have obtained and the discussion at the 10th experts meeting on sea area monitoring related to ALPS treated water by Ministry of Environment held on December 22, we will change the monitoring plan from tomorrow , December 26, to conduct monitoring frequently during discharge period (Refer to slide 2). There will be no change to the monitoring plan for the area outside the in the vicinity of the discharge outlet (4 locations within a 10km radius in front of the power station).

○ Going forward, we will remain vigilant to ensure that there are no unintentional discharges of ALPS treated water into the sea. Furthermore, as the entity in charge of the discharge of ALPS treated water into the sea, we shall carefully engage in sea area monitoring in accordance with the government’s Comprehensive Radiation Monitoring Plan. We shall also work in coordination with the government and other related organizations to ascertain sea conditions, and convey this information carefully in an easy-to-understand manner.

Future monitoring plan for quick tritium measurements

	A total of 4 locations※1 in the vicinity of the discharge outlet	Other 6 locations
During the discharge period and for one week following the completion of discharge	Quick measurements : Conduct daily※2 (Normal measurement: Conduct once a week)	Quick measurements : Conduct twice a week (Normal measurement: Conduct once a week)
Outside the discharge period (Excluding one week following the completion of discharge)	Quick measurements : Conduct once a week (Normal measurement: Conduct once a week)	Quick measurements : Conduct once a month (Normal measurement: Conduct once a week)

※1 Selected considering 3 monitoring points conducted by Ministry of the Environment in the vicinity of the discharge outlet, detection performance of monitoring conducted by TEPCO, and direction of ocean current.

※2 If two days are missed because of bad weather condition during the discharge period, and it is predicted that measurements will not be able to be taken the next day either (third day in a row), quick tritium measurement will conducted at **T-1** and **T-2** on the third day.

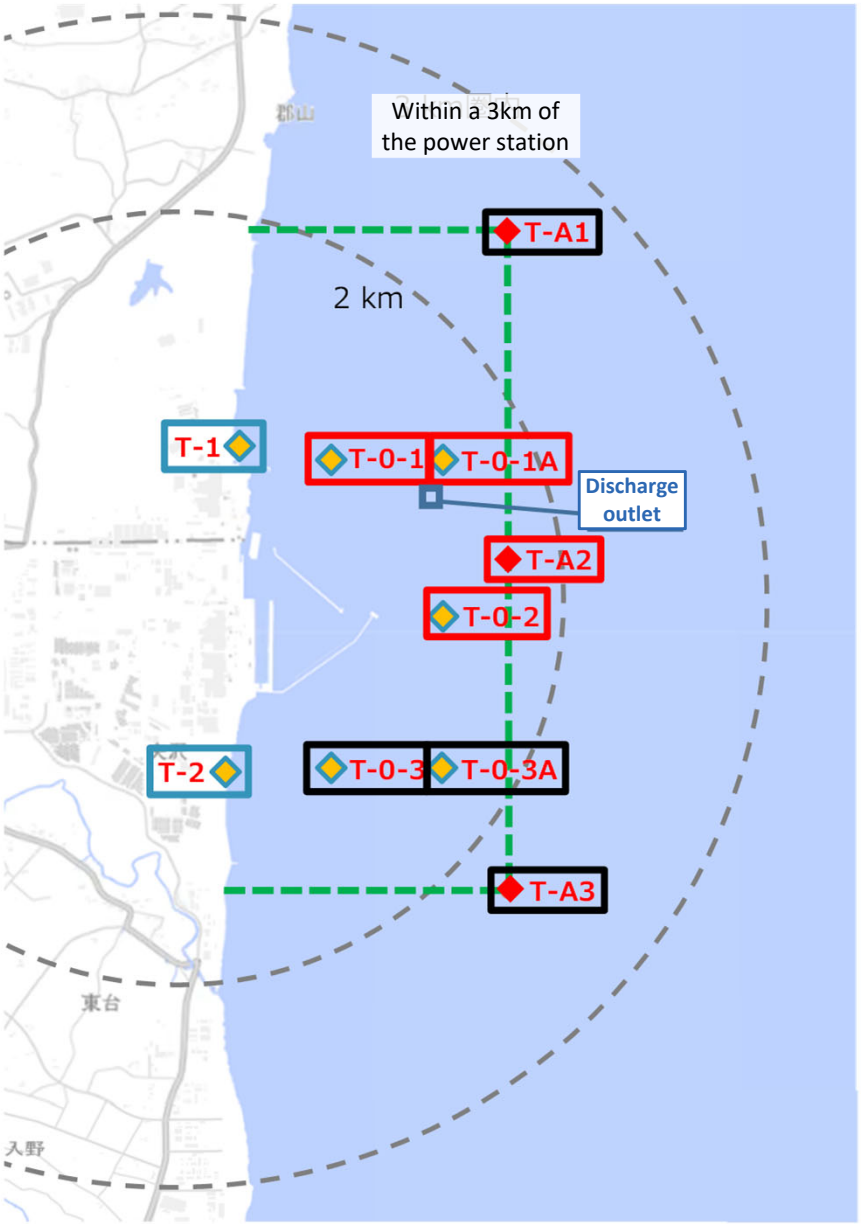
Quick measurement : Analysis performed with a detection limit of 10Bq/liter in order to quickly confirm that the discharged water is dispersing from the discharge outlet as anticipated after leaving the discharge outlet.

Normal measurement: Analysis performed with a detection limit of 0.4Bq/liter (once a week), and 0.1Bq/liter (once a month) in accordance with the government's Comprehensive Radiation Monitoring Plan.

Note) The same specimen may be used for both quick measurements and normal analysis

○ During the analysis of samples from the other 6 locations, this plan may be revised if

- ✓ Tritium is detected during quick measurements
- ✓ Concentrations that exceed detection limits for quick measurements are detected during normal analysis



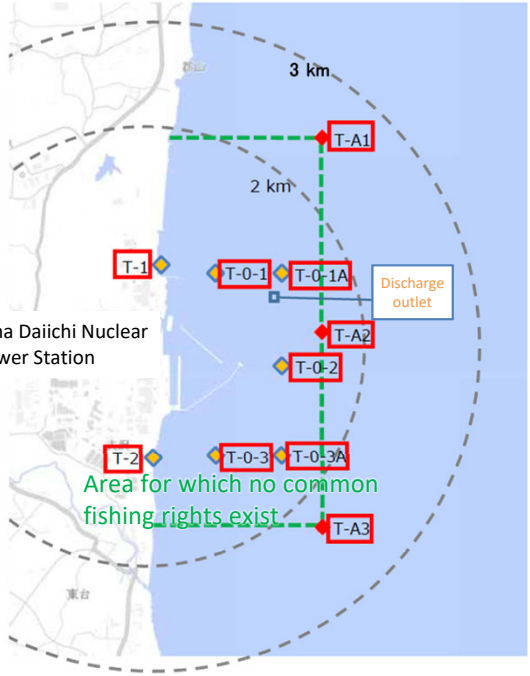
Partially edited excerpt from "Fukushima Daiichi Nuclear Power Station Completion of the Discharge from Measurement/Confirmation Facility Tank Group A (Third Discharge)) (November 20, 2023)

(Reference) Monitoring plans for quick tritium measurements

- Seawater tritium analysis is implemented once a week at all points on Figures 1 and 2 below, with the detection limit set to 0.1-0.4Bq/liter.
- In addition, quick tritium measurements with the detection limit set to 10Bq/liter will be implemented at the locations outlined in the red frames in Figures 1 and 2 below. In the case "discharge suspension level" indicators are exceeded, the discharge into the sea will be suspended.
- After the commencement of the discharge, in light of the monitoring frequency outlined by the various organizations within the Comprehensive Monitoring Plan, frequency of quick tritium measurements specifically near the discharge outlets shown in Figure 1 will be increased from once a week to everyday for the time being.

To be revised

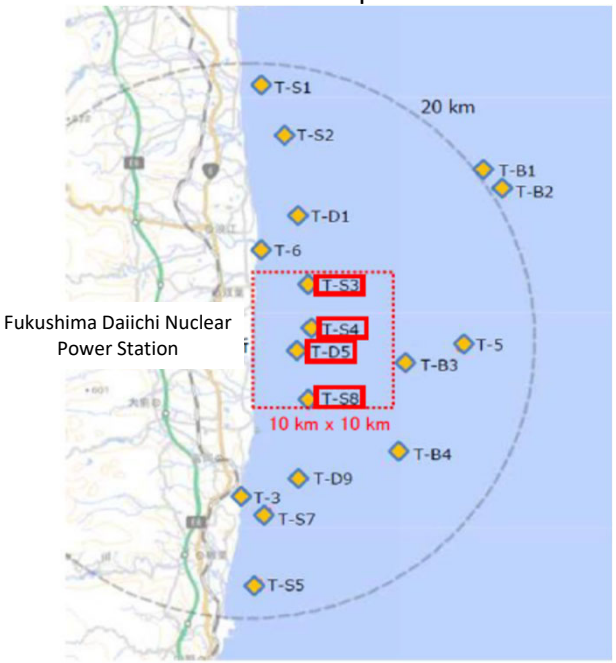
Figure 1. Sampling locations within a 3km radius of the power station (in the vicinity of the discharge outlet)



: Monitoring locations for measurements to obtain results quickly (10 locations)
Indicator (discharge suspension level): 700Bq/liter
Analysis frequency: once a week → **Every day for the time being**

Remains the same

Figure 2. Sampling locations within a 10km square in front of the power station



: Monitoring locations for measurements to obtain results quickly (4 locations)
Indicator (discharge suspension level): 30Bq/liter
Analysis frequency: Once a week (T-D5),
Once a month (T-S3, T-S4, T-S8)