

Revised on July 13, 2023 as written in red (before: abnormal value, after: discharge suspension level)

- We announced "Sea Area Monitoring Plan for the Handling of ALPS Treated Water" on March 24, 2022 and increased the number of measurement points, measurement targets, and measurement frequency of monitoring. We started the operation of this plan since April, 2022.
- We have stipulated in the implementation plan that was approved by the NRA in July 2022 that we will suspend the discharge of ALPS treated water into the sea if **discharge suspension level** is detected in sea area monitoring. Additionally, we have added our approach to **discharge suspension level** in the implementation plan that was approved by the NRA in May 10, 2023.
- Furthermore, when discharging ALPS treated water into the sea, we will:
 - For radioactive substances other than tritium : confirm to meet regulatory standards prior to dilution/discharge
 - For tritium : dilute with a large volume of seawater to ensure that the concentration will be below 1,500 Bq/L*

Because of above, we think that the water after ALPS treated water is diluted with seawater will be safe at the time for the discharge.

* 1/40 of the regal requirement (60,000 Bq/L), approx. 1/7 of the WHO's drinking water guidelines (10,000 Bq/L)

<Announced as of May 10>

- In ALPS treated water will be discharged into the sea after dilution with seawater, 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 to be 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/L**, which is based on the maximum management value tritium concentration during the sea discharge stipulated in the implementation plan.
 - Outside the vicinity of the discharge outlet (4 locations within a 10km square in front of the power station)

The index for this area has been set at **30 Bq/L**, which is 1.5 times of 20 Bq/L, 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/L).
- If concentrations approx. half of the index 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.
- The objective of monitoring performed in order to set index (**discharge suspension level**) is to quickly analyze and rapidly ascertain sea conditions by raising the detectable limits. Furthermore, if conditions that differ from normal are found during detailed monitoring by various agencies performed in accordance with the comprehensive monitoring plan, the necessary responses will be considered and implemented.

○ Positioning of index (discharge suspension level)

- In ALPS treated water will be discharged into the sea after dilution with seawater, 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 to be discharged is not dispersing sufficiently (tritium concentration unusual situation). If the aforementioned set values are exceeded, the sea discharge will be immediately suspended.
- In order to quickly ascertain the tritium concentration conditions in the sea area, the detectable limits at 14 locations will be raised to **10 Bq/L**, and measurements will be taken.

○ Setting index (discharge suspension level)

① In the vicinity of the discharge outlet (10 locations within 3km of the power station): 700 Bq/L

- Although the government's policy stipulates the upper limit of tritium concentration during the discharge at less than 1,500 Bq/L, the maximum management value during the discharge has been set approx. 700 Bq/L, which will not be exceeded 1,500 Bq/L even in consideration of facility and measurement uncertainties and also this value is included in the implementation plan.
- Based on this maximum management value, the index (**discharge suspension level**) for this area in the vicinity of the discharge outlet (within 3km from the power station) has been set at 700 Bq/L.

(Refer to P4 Diagram 1 for details on the sampling locations)

② Outside the vicinity of the discharge outlet (4 locations within a 10km square in front of the power station): 30 Bq/L

- The index (**discharge suspension level**) for this area outside the vicinity of the discharge outlet (10km square in front of the power station) has been set at **30 Bq/L**, which is 1.5 times of 20 Bq/L, as the case which the maximum tritium concentration* in the sea area in front of nuclear power stations throughout Japan over the last three years (20 Bq/L) clearly exceeds is considered to be an unusual situation.

(Refer to P4 Diagram 2 for details on the sampling locations)

*: Maximum value in data for April 2019~March 2022 in the following database.

Source: Environmental Radioactivity and Radiation in Japan Environmental Radiation Database

<https://www.kankyo-hoshano.go.jp/en/data-en/database-en/>

Responding to index (**discharge suspension level**) exceedance, recommencing discharge after discharge suspension, and setting investigation level, etc.

○ Responding to index (**discharge suspension level**) exceedance

- After sea area monitoring measurement results have been fixed, values will be immediately checked and if the index (**discharge suspension level**) will be exceeded at even one location, the discharge will immediately be suspended. After the discharge is shut down, trends will be ascertained through more frequent monitoring and weather/sea conditions will be checked in order to assess dispersion conditions.
- However, even if index (700 Bq/L or 30 Bq/L) is exceeded, tritium concentration in the surrounding sea area was still fall below the legal requirement of 60,000 Bq/L and also the WHO's drinking water guidelines of 10,000 Bq/L, so the sea area will be considered to be safe.

○ Recommencing discharge after discharge suspension

- Facilities and operation status will be inspected for abnormalities, and operational procedures will be inspected for problems.
- Sea area monitoring results after suspension will be checked to confirm that concentrations are below index (**discharge suspension level**).
- After these checks have been completed, discharge will recommence after announcing the commencement of discharge.

○ Setting investigation level

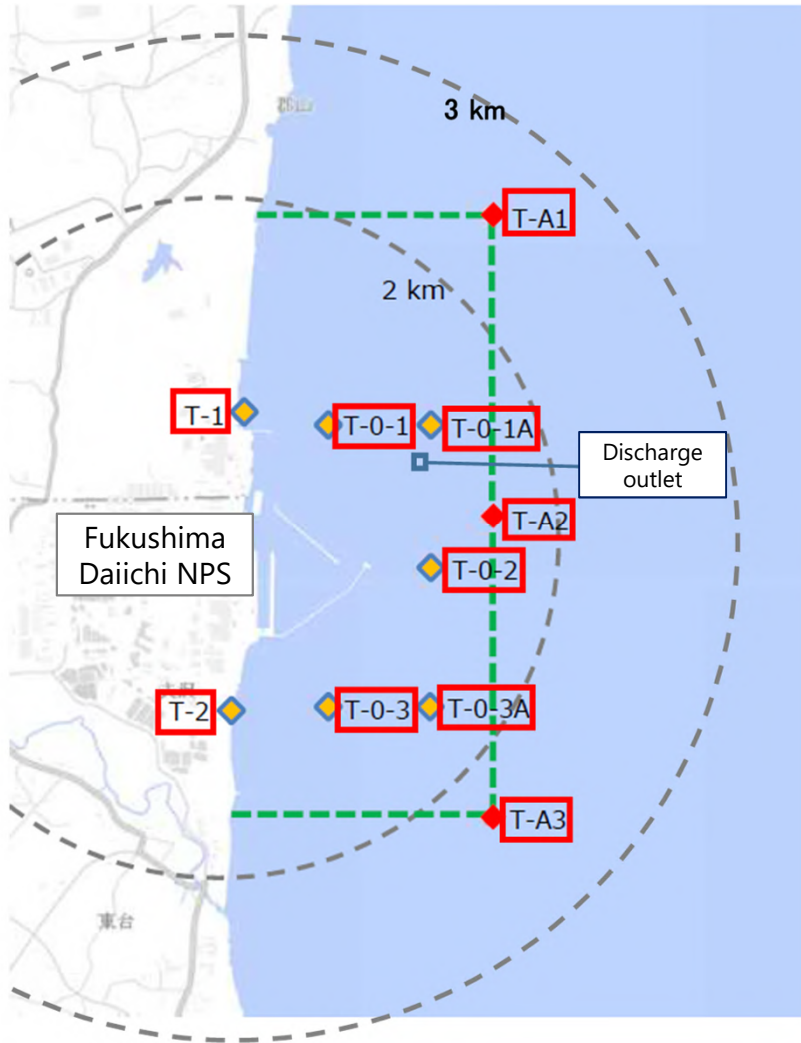
- "Investigation level" has been also set as values that require action to be taken before index (**discharge suspension level**) is reached. The "investigation level" in the vicinity of the discharge outlet (10 locations within 3km of the power station) is **350 Bq/L** (one half of the index), and the investigation level outside the vicinity of the discharge outlet (4 locations within a 10km square in front of the power station) is **20 Bq/L** (a little more than one half of the index). If these values are exceeded, immediately facilities/operation status will be inspected for abnormalities and operational procedures will be inspected for problems. At the same time, seawater will be resampled and the frequency of monitoring will be increased as necessary in accordance with the sampling results.

○ Responding to the results of sea area monitoring performed in accordance with the comprehensive monitoring plan

- If conditions that differ from normal are found during detailed monitoring by various agencies performed in accordance with the comprehensive monitoring plan, the necessary responses will be considered and implemented.

Sampling locations for setting index (discharge suspension level) and investigation level

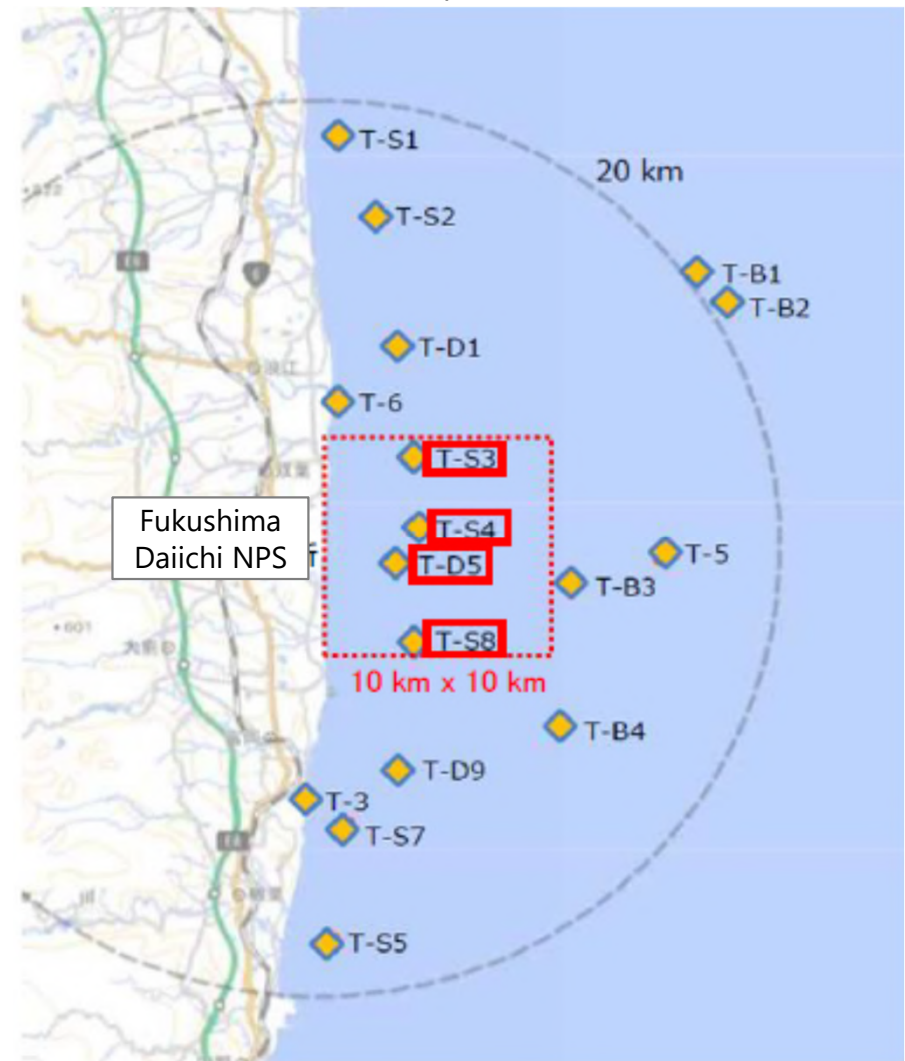
Diagram 1 Sampling locations within 3km of the power station (in the vicinity of the discharge outlet)



: Sampling locations for value setting (10 locations)
Index (discharge suspension level): 700 Bq/L,
Investigation level: 350 Bq/L

: Area where common fishery rights are no set

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



: Sampling locations for value setting (4 locations)
Index (discharge suspension level): 30 Bq/L,
Investigation level: 20 Bq/L