

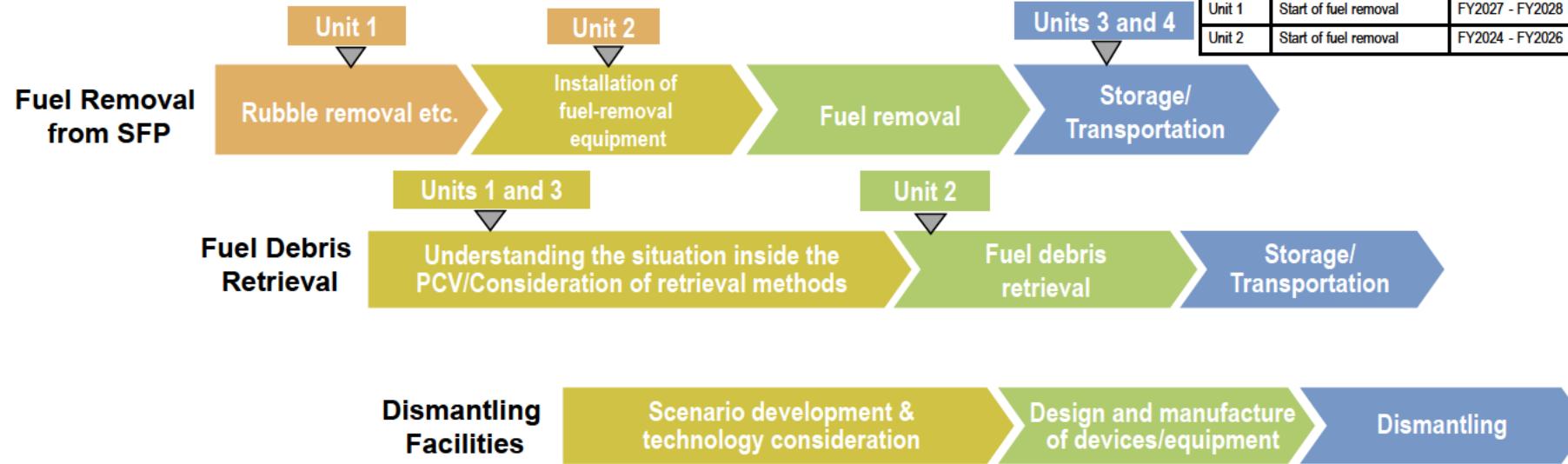
Outline of Decommissioning, Contaminated Water and Treated Water Management

Main decommissioning work and steps

Fuel removal from the spent fuel pool was completed on December 22, 2014 at Unit 4 and February 28, 2021 at Unit 3. Trial fuel debris retrieval at Unit 2 commenced on September 10, 2024 and a milestone of the Mid-and-Long-Term Roadmap "Commencing fuel debris retrieval at the first Unit" was achieved. Work continues sequentially toward the start of fuel removal from Units 1 and 2 and fuel debris (Note 1) retrieval from Units 1-3. (Note 1) Fuel assemblies that melted during the accident along with nearby metal materials, etc.

<Milestones in the Mid-and-Long-Term Roadmap>

Units 1-6	Completion of fuel removal	Within 2031
Unit 1	Start of fuel removal	FY2027 - FY2028
Unit 2	Start of fuel removal	FY2024 - FY2026

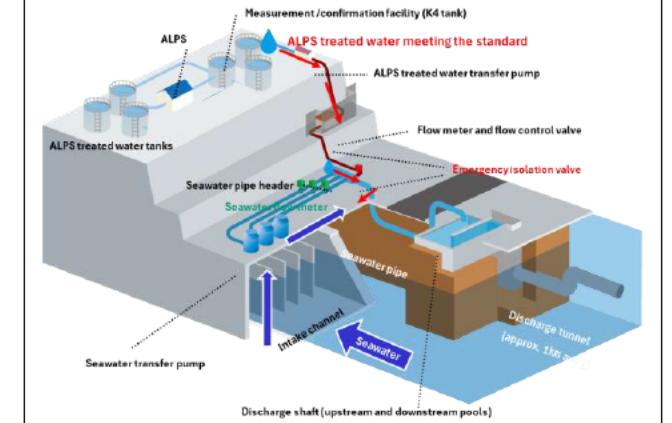


Measures for treated water

Handling of ALPS treated water

Regarding the discharge of ALPS treated water into the sea, TEPCO must comply with regulatory and other safety standards to safeguard the public, the surrounding environment and agricultural, forestry and fishery products. To minimize adverse impacts on reputation, ongoing efforts will continue, including enhanced monitoring, ensuring objectivity and transparency by engaging with third-party experts and having safety checked by the IAEA. Moreover, accurate information will be disseminated with full transparency.

Flow of discharge of ALPS treated water into the sea



Contaminated water management - triple-pronged efforts -

(1) Efforts to promote contaminated water management based on the three basic policies

- ① "Removing" the contamination source
- ② "Redirecting" groundwater from the contamination source
- ③ "Preventing leakage" of contaminated water

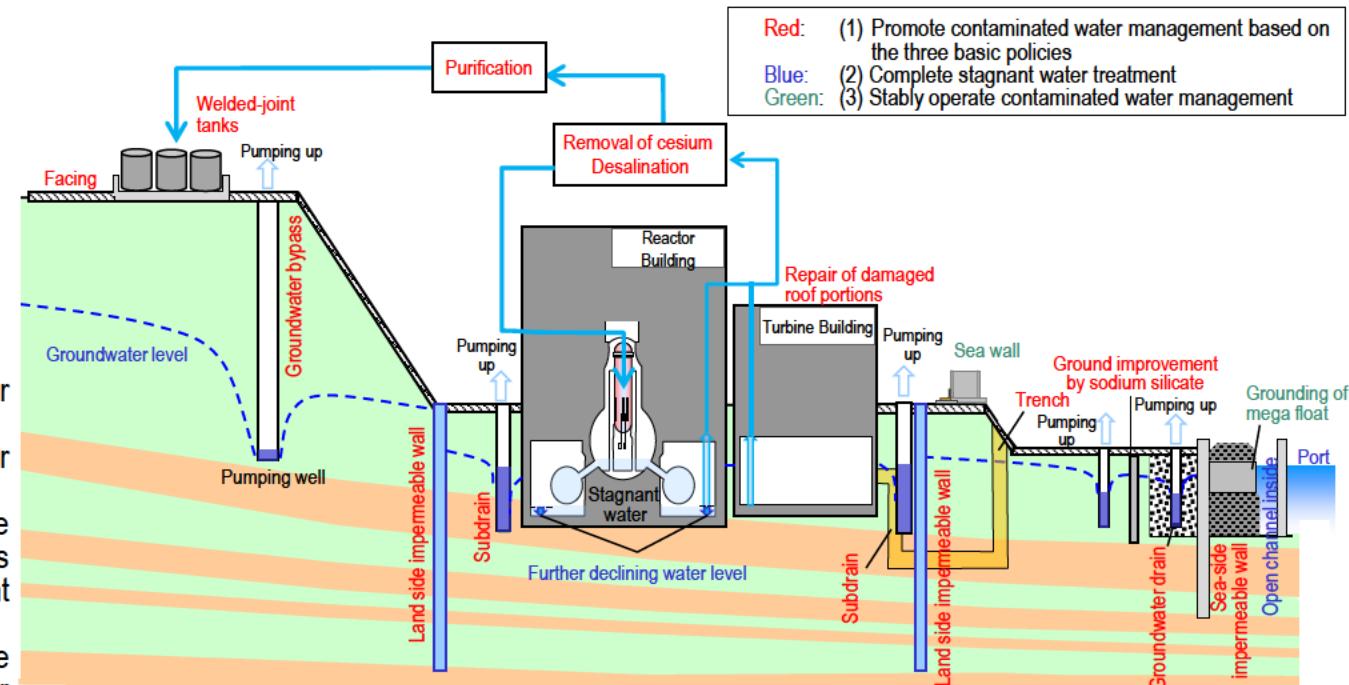
- For stagnant water in buildings (contaminated water), first, cesium and strontium are reduced by the cesium absorption apparatuses (SARRY and KURION). Then, stagnant water in buildings is treated by the multi-nuclide removal system (ALPS) and stored in welded-joint tanks.
- Multi-layered contaminated water management measures, including land-side impermeable walls and subdrains, have stabilized the groundwater at a low level and the increased contaminated water generated during rainfall is being suppressed by repairing damaged portions of the building roofs facing onsite. Through these measures, the amount of contaminated water generated has been suppressed and reduced from approx. 540 m³/day (in May 2014) before implementing measures to approx. 70 m³/day (in FY2024). It was confirmed that the milestone of "suppressing the amount of contaminated water generated to 100 m³/day or less during average rainfall within FY2025," which was achieved in FY2023, has been maintained in FY2024.
- Measures will proceed to further reduce and suppress the amount of contaminated water generated to approx. 50-70 m³/day by FY2028.

(2) Efforts to complete stagnant water treatment

- To reduce stagnant water levels in buildings as planned, work to install additional stagnant water transfer equipment will proceed.
- In 2020, treatment of stagnant water in buildings was completed, except for the Units 1-3 Reactor Buildings, Process Main Building and High-Temperature Incinerator Building.
- While assessing the dust impact, measures to reduce the stagnant water level were implemented. In March 2023, the target water level in each building was achieved. For the Units 1-3 Reactor Buildings, "reducing stagnant water in the Reactor Buildings to about half the amount at the end of 2020 during the period FY2022-2024" was achieved.
- Measures are being implemented for the reduction of radiation dose and stabilization of zeolite sandbags on the basement floors of the Process Main Building and High-Temperature Incinerator Building.

(3) Efforts to stably operate contaminated water management

- As part of the tsunami countermeasures, openings in buildings were closed and work to install sea walls was completed. As countermeasures for heavy rain, sandbags are being installed to suppress direct inflow into buildings while drainage channel enhancements and other measures are being implemented as planned.



Progress status

- ◆ The temperatures of the Reactor and the Primary Containment Vessel of Units 1-3 have been maintained stable. There was no significant change in the concentration of radioactive materials newly released from Reactor Buildings into the air. It was concluded that the comprehensive cold shutdown state had been maintained.

Unit 2: The status of PCV internal investigation and fuel debris trial retrieval

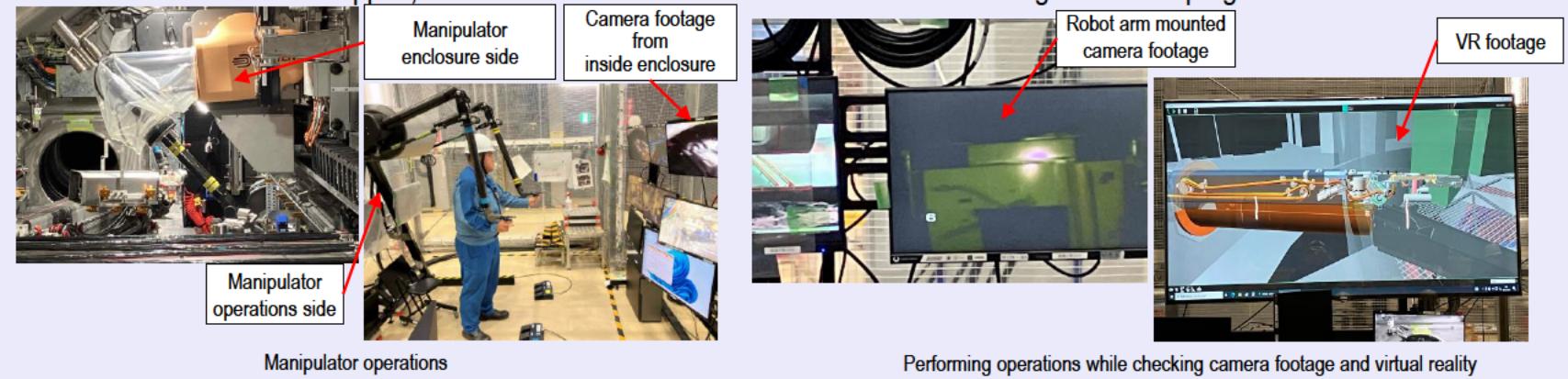
On-site work will be performed using large devices that are completely remotely operated, and the difficulty level of the work is extremely high, so maintenance tasks are being performed on a mockup of the facility that assumes the risks.

Currently, visibility during camera replacement is being checked, and training on using the manipulator to replace the cameras, as well as operations to withdraw the arm in the event of emergency, are underway. During the test, it was confirmed that even if all the cameras mounted on the robotic arm stopped, the arms could still be retrieved to the enclosure using the control program and VR.

Furthermore, work training in a simulated environment is underway in preparation for installation of ancillary equipment, such as robot arm and cables, on site.

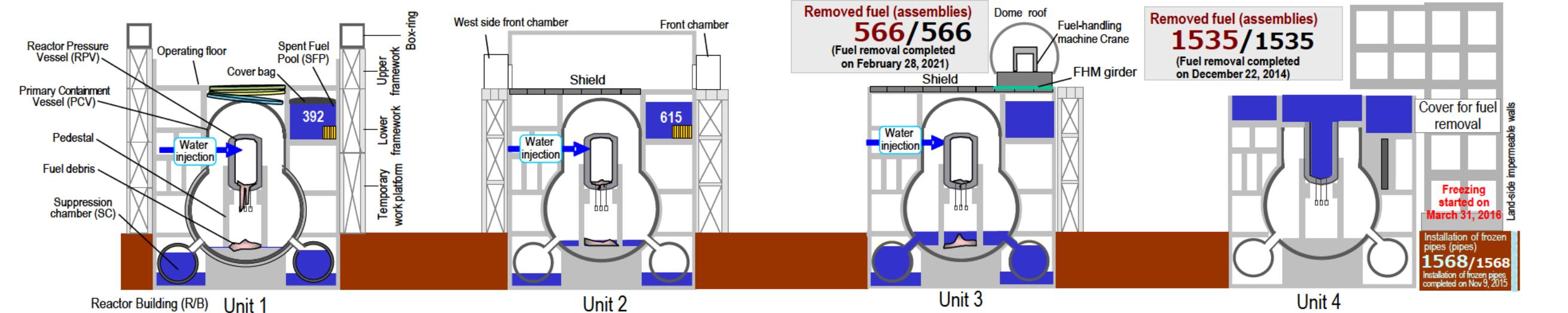
If verification tests go smoothly, the robotic arm will be transported to Fukushima Daiichi Nuclear Power Station at the end of FY2025 and installed on-site.

In light of the camera malfunctions on the telescopic device, we have changed the cameras that were subjected to high accumulated doses during field work to ones that have been adopted in our previous works, and irradiation tests on the cameras mounted on the robotic arm are underway.



Manipulator operations

Performing operations while checking camera footage and virtual reality



Reactor Building (R/B) Unit 1

Unit 2

Unit 3

Unit 4

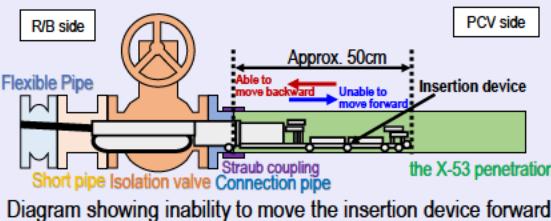
Unit 3 PCV internal investigation (non-submerged area) using micro-drones

This investigation aims to collect information around the X-6 penetration and inside the pedestal, which are important for future deposit investigation and fuel debris retrieval horizontal access. In December 1, 2025, when conducting function tests of the investigation device it suddenly became impossible to move the insertion device forward inside the the X-53 penetration. The device was moved backwards and returned to the seal box.

Two cameras were added to the end of the insertion device in order to perform a detailed inspection of the inside of the insertion pipe.

Analysis of obtained footage shows that the center axes of the connection pipe and the X-53 penetration are slightly misaligned. Based on these results, we assume the reasons why the insertion device cannot move past this point are because “the cross-sectional area of the pathway becomes smaller” and “the crawler loses grip”.

Going forward, the obtained data will be further analyzed in detail and countermeasures will be deliberated. We will review the upcoming processes based on mockup testing results.



the X-53 penetration on the back side Connection pipe on the back side

Results of the 16th survey to improve the work environment

The survey has been conducted since 2011 aiming to ask workers feedback and improvement requests regarding the work environment, and actual working state. In the results of the 16th survey, the ratio of positive evaluations increased across main questions.

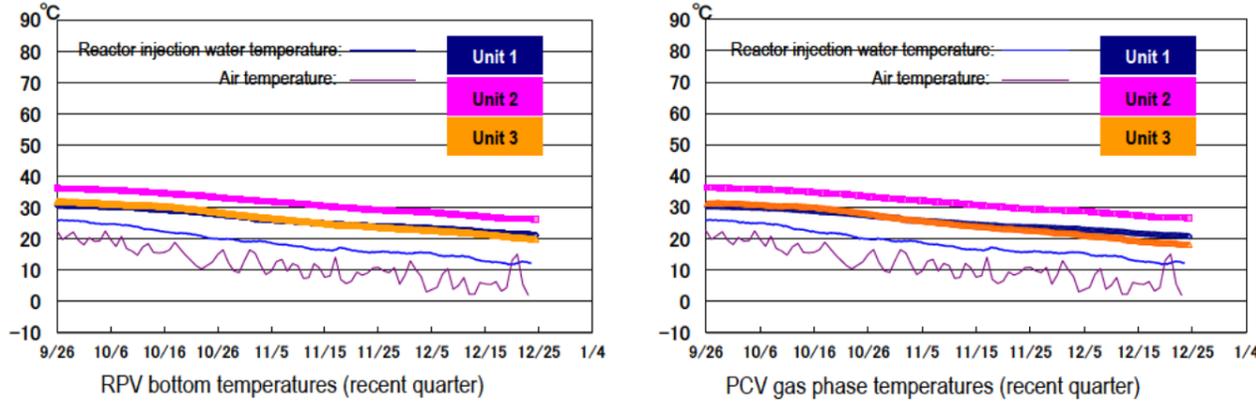
We think these results show that in order to respond to opinions received from workers as much as possible, feasible response measures and alternative measures have been examined, and efforts have been made to improve the facilities and environment. Regarding “the concern about radiation”, 76.6% of workers responded that they feel “no or almost no concern about radiation”, marking a 16.9% increase from the previous year and the same level (70%) with the average of the past five years excluding last year. Regarding this question, the ratio possibly declined in the previous survey partly due to the body contamination incident in 2023. This year's evaluation improved through subsequent efforts to secure and improve safety by work inspection and to foster understanding about radiation impact on health by holding educational seminars by expert lecturers.

We will continue to improve the work environment for workers to secure a safe workplace.

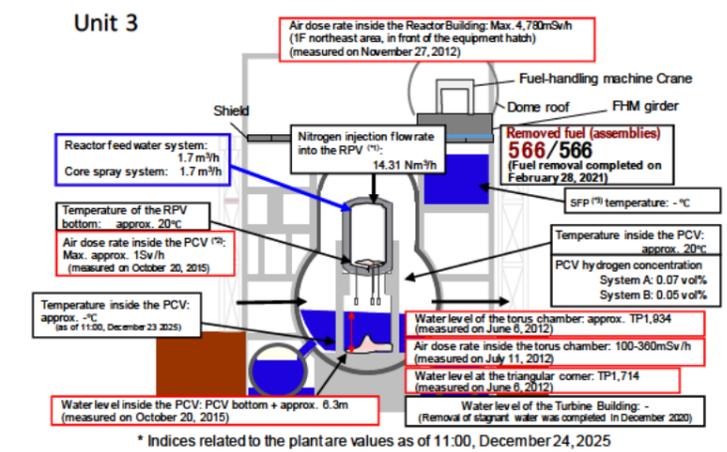
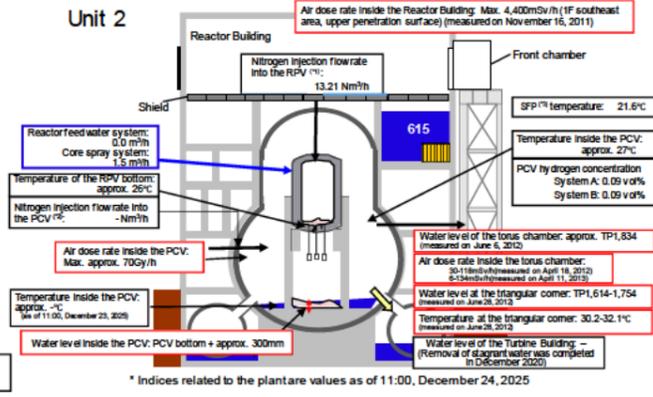
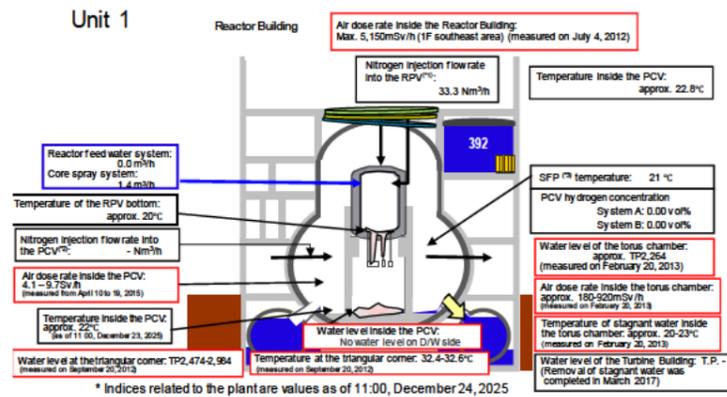
I. Confirmation of the reactor conditions

Temperatures inside the reactors

Through continuous reactor cooling by water injection, the temperatures of the Reactor Pressure Vessel (RPV) bottom and the Primary Containment Vessel (PCV) gas phase were maintained as shown below for recent, though they varied depending on the unit and location of the thermometer.



*1 The trend graphs show part of the temperature data measured at multiple points.
*2 A part of data could not be measured due to maintenance and inspection of the facility and other work.

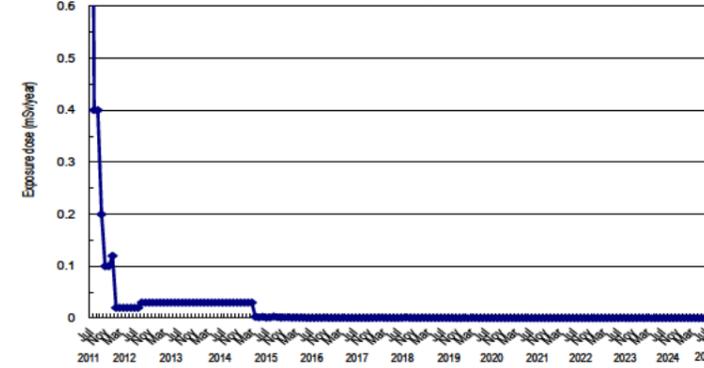


(*1) RPV (Reactor Pressure Vessel)
(*2) PCV (Primary Containment Vessel)
(*3) SFP (Spent Fuel Pool)

Release of radioactive materials from the Reactor Buildings

As of November 2025, the concentration of radioactive materials newly released from Reactor Building Units 1-4 into the air and measured at the site boundary was evaluated at approx. 5.1×10^{-12} Bq/cm³ and 1.1×10^{-11} Bq/cm³ for Cs-134 and -137 respectively, while the radiation exposure dose due to the release of radioactive materials there was less than 0.00003 mSv/year.

Annual radiation dose at site boundaries by radioactive materials (cesium) released from Reactor Building Units 1-4



(Reference)

- * The concentration limit of radioactive materials in the air outside the surrounding monitoring area:
[Cs-134]: 2×10^{-5} Bq/cm³
[Cs-137]: 3×10^{-5} Bq/cm³
- * Data of Monitoring Posts (MP1-MP8).
Data of Monitoring Posts (MPs) measuring the air dose rate around the site boundary showed 0.280-0.952 µSv/h (November 26 – December 23, 2025).
To measure the variation in the air dose rate of MP2-MP8 more accurately, work to improve the environment (trimming trees, removing surface soil and shielding around the MPs) was completed.

Note 1: Different formulas and coefficients were used to evaluate the radiation dose in the facility operation plan and monthly report. The evaluation methods were integrated in September 2012. As the fuel removal from the spent fuel pool (SFP) commenced for Unit 4, the radiation exposure dose from Unit 4 was added to the items subject to evaluation since November 2013. The evaluation has been changed to a method considering the values of continuous dust monitors since FY2015, with data to be evaluated monthly and announced the following month.

Note 2: Radiation dose was calculated using the evaluation values of release amount from Units 1-4 and Units 5 and 6. The radiation dose of Unit 5 and 6 was evaluated based on expected release amount during operation until September 2019 but the evaluation method was reviewed and changed to calculate based on the actual measurement results of Units 5 and 6 from October.

Note 3: Dose assessment has been changed since July 2024 due to the change of standard meteorology, etc. in the implementation plan (effective July 8, 2024).

Other indices

There was no significant change in indices, including the pressure in the PCV and the PCV radioactivity density (Xe-135) for monitoring criticality, nor was any anomaly in the cold shutdown state or criticality sign detected.

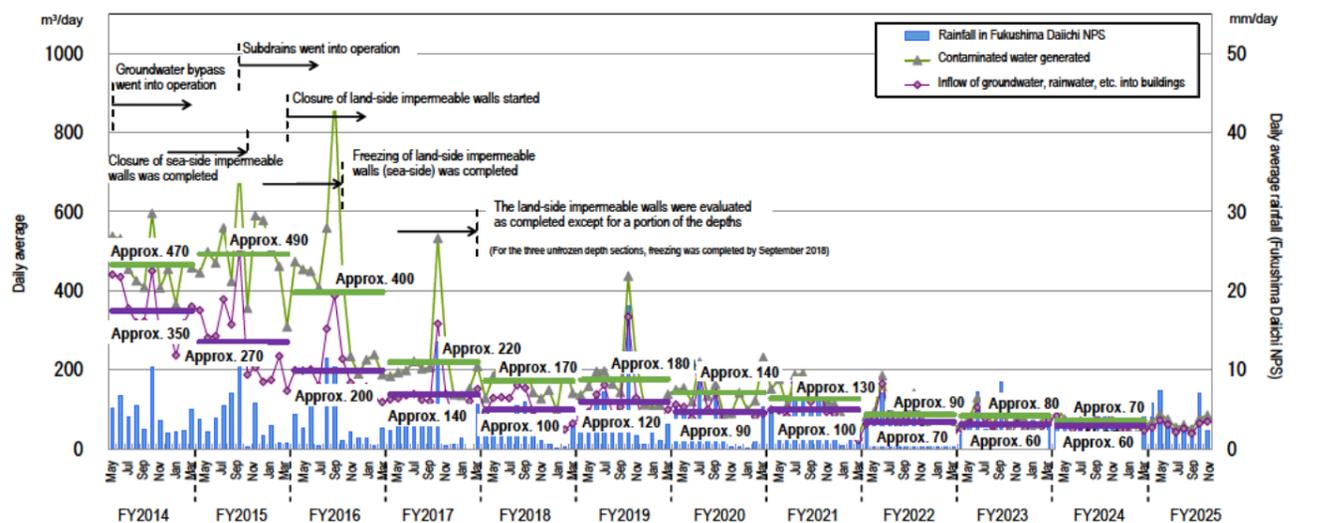
Based on the above, it was confirmed that the comprehensive cold shutdown state had been maintained and the reactors remained in a stabilized condition.

II. Progress status by each plan

Measures for contaminated water and treated water

➤ Status of contaminated water generated

- Multi-layered contaminated water management measures, including land-side impermeable walls and subdrains, have stabilized the groundwater at a low level and the increased contaminated water generated during rainfall is being suppressed by repairing damaged portions of building roofs facing onsite. Through these measures, the generation of contaminated water has been suppressed and reduced from approx. 540 m³/day (in May 2014) before implementing measures to approx. 70 m³/day (in FY2024). It was confirmed that the milestone of “suppressing the amount of contaminated water generated to 100 m³/day or less during average rainfall within FY2025,” which was achieved in FY2023, has been maintained in FY2024.
- Measures will proceed to further reduce the amount of contaminated water generated and suppress to approx. 50-70 m³/day by FY2028.



*1 Values differ from those announced at the 20th Committee on Countermeasures for Contaminated Water Treatment (held on August 25, 2017) because the method of calculating the contaminated water volume generated was reviewed on March 1, 2018. Details of the review are described in the materials for the 50th and 51st meetings of the Secretariat of the Team for Countermeasures for Decommissioning and Contaminated Water Treatment.

*2: The monthly daily average is derived from the daily average from the previous Thursday to the last Wednesday, which is calculated based on the data measure

Figure 1: Changes in contaminated water generated and inflow of groundwater and rainwater into buildings

➤ Operation of the Water-Treatment Facility Special for Subdrains & Groundwater drains

- At the Water-Treatment Facility Special for Subdrains & Groundwater drains, release started from September 14, 2015, and up until December 15, 2025, 2,840 releases had been completed.

The water quality of all temporary storage tanks satisfied the operational target.

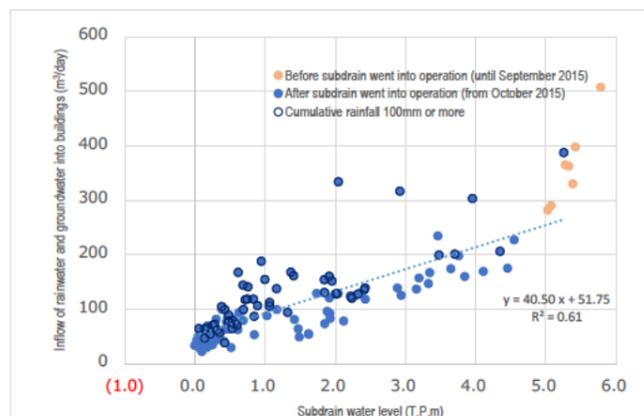


Figure 2: Correlation between inflow such as groundwater and rainwater into buildings and the water level of Units 1-4 subdrains

➤ Implementation status of facing

- Facing is a measure that involves asphaltting the on-site surface to reduce the radiation dose, prevent rainwater from infiltrating the ground and reduce the amount of underground water flowing into buildings. As of the end of November 2025, 97% (1,410,000 m²) of the planned area (1,450,000 m²) on site had been completed. For the area inside the land-side impermeable walls, facing is proceeded after appropriate yard coordination from the zones in which facing can be implemented without affecting the decommissioning work. As of the end of November 2025, 55% (30,000 m²) of the planned area (60,000 m²) had been completed.

➤ Status of the groundwater level around buildings

- For groundwater levels within the land-side impermeable walls, the difference between the inside and outside has remained constant, though the groundwater level on the mountain side varied due to rainfall. The groundwater level of the groundwater drain observation well remained sufficiently lower than the ground surface, at around T.P.+1.4m (the height of the ground surface: T.P.+2.5m).
- Regarding the subdrains of Units 1-4, pumping volumes varied with precipitation. The pumping amount in the T.P.+2.5m area remained constant after the facing in this area was completed.

➤ Operation of the multi-nuclide removal system and other water-treatment facilities

- Regarding the multi-nuclide removal system (existing), hot tests with radioactive water was conducted (System A: from March 30, 2013, System B: from June 13, 2013, System C: from September 27, 2013). On March 23, 2022, an inspection prior-to-use certificate was granted by the Nuclear Regulation Authority (NRA) and the entire inspection prior-to-use was completed. For the multi-nuclide removal system (additional), an inspection prior to use certificate was granted by the NRA on October 12, 2017. Regarding the multi-nuclide removal system (high-performance), hot tests using radioactive water were conducted from October 18, 2014. In March 2, 2023, an inspection prior to use certificate was granted by the NRA and the entire inspection prior to use was completed.
- Treatment operations comprising strontium removal by cesium-adsorption apparatus (KURION), the secondary cesium-adsorption apparatus (SARRY) and the third cesium-adsorption apparatus (SARRY II) continued. Up until December 11, 2025, approx. 805,000 m³ had been treated.

➤ Risk reduction of strontium-reduced water

- To mitigate risks associated with strontium-reduced water, treatment using the existing, additional, and high-performance multi-nuclide removal systems is underway. Up until December 11, 2025, approx. 970,000 m³ had been treated.

➤ Storage status of stagnant water and amount of ALPS treated water, etc. stored in tanks

- The volume of ALPS treated water, etc. was approx. 1,257,352 m³ as of December 11, 2025.

- The total volume of ALPS treated water discharged into the sea since the discharge commenced on August 24, 2023, was approx. 133,321 m³ as of the completion of the sixth discharge in FY2025.

As of December 11, 2025

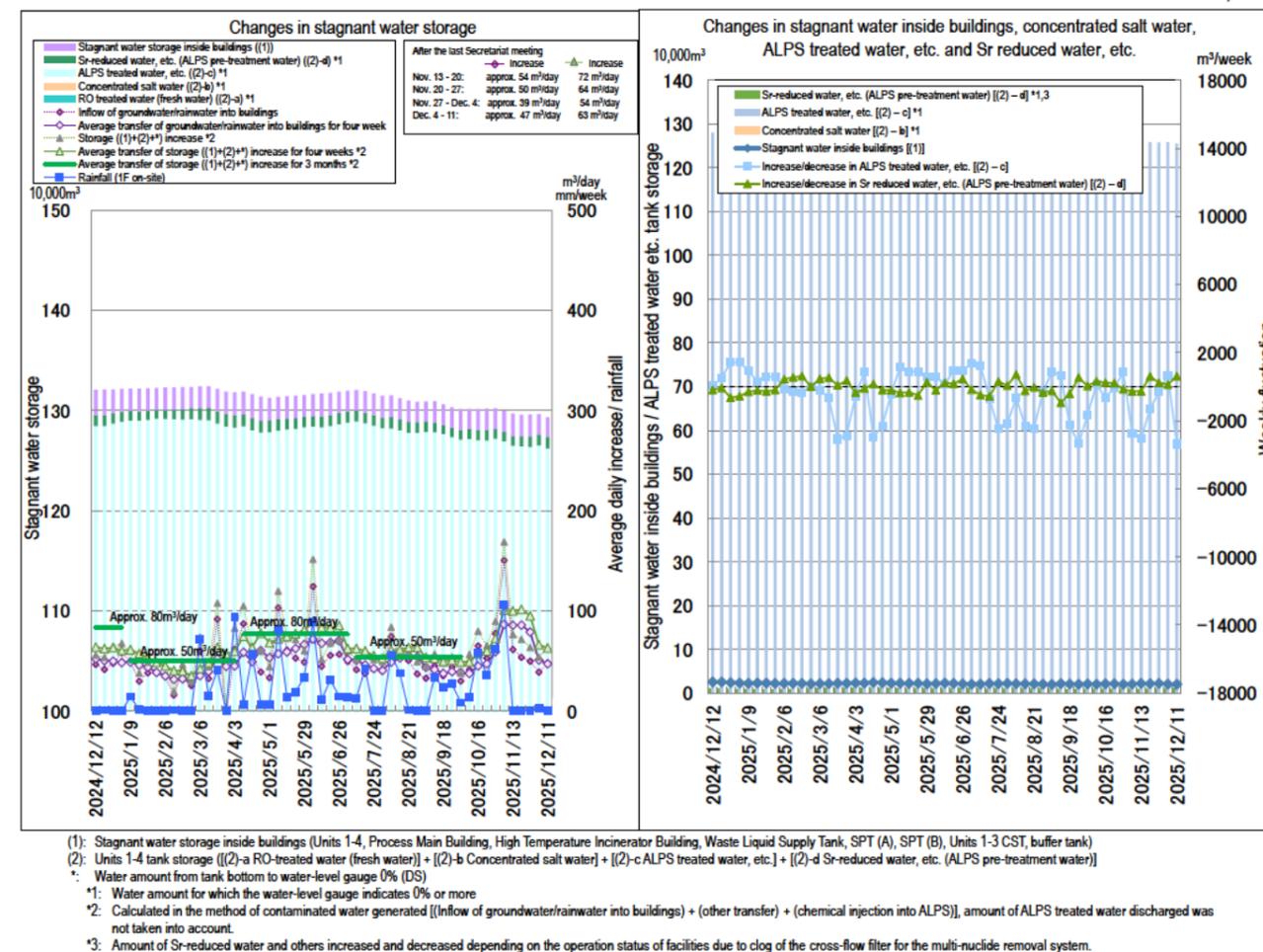


Figure 3: Status of stagnant water storage

➤ Status of discharge of ALPS treated water

As of December 23, 2025

Measurement object	Requirement and operation target	Measurement results	Compliance with requirement
[TEPCO] Tritium concentration in seawater (sea-area monitoring at 10 points within 3 km of the Power Station)	• Discharge suspension level: 700 Bq/L or less • Investigation level: 350 Bq/L or less	(Sampled on December 22) • Below the lower detection limit (less than 7.2 – 8.9 Bq/L)	○ ○
[TEPCO] Tritium concentration in seawater (sea-area monitoring at 1 point within a 10 km square area in front of the Power Station)	• Discharge suspension level: 30 Bq/L or less • Investigation level: 20 Bq/L or less	(Sampled on December 22) • Below the lower detection limit (less than 7.5 Bq/L)	○ ○
[Ministry of the Environment] Tritium concentration in seawater (at 21 points off the coast of Fukushima Prefecture, 1 point off the coast of Miyagi Prefecture, and 1 point off the coast of Ibaraki Prefecture)	• National safety requirement: 60,000 Bq/L • WHO drinking water guidelines: 10,000 Bq/L	(Sampled on December 9-11 and 13) • Below the lower detection limit (less than 9 Bq/L)	○ ○
[Fisheries Agency] Tritium concentration in marine products (flounder and others)	-	(Sampled on December 19) • Below the lower detection limit (less than 8.9 Bq/kg)	○
[Fukushima Prefecture] Tritium concentration in seawater (at 9 points around the Fukushima Daiichi Nuclear Power Station)	• National safety requirement: 60,000 Bq/L • WHO drinking water guidelines: 10,000 Bq/L	(Sampled on November 20) • Below the lower detection limit (less than 4.4 – 5.0 Bq/L)	○ ○

- From December 4 to 22, 2025, the sixth discharge of ALPS treated water into the sea in FY2025 was conducted.
- For sea-area monitoring related to handling ALPS treated water, more tritium measurement points for seawater and fish were established near the power station and off the coast of Fukushima Prefecture and measurements of tritium and Iodine-129 of seaweed near the power station were added from April 20, 2022. As of December 24, 2025, no significant variation had been detected.
- For sea-area monitoring conducted by TEPCO at 10 points within 3 km of the power station, rapid measurements taken of the tritium concentration in the seawater sampled on December 22 showed concentrations under the lower detection limit (less than 7.2 – 8.9 Bq/L) at all points, which were below the TEPCO operation indices of 700 Bq/L (discharge suspension level) and 350 Bq/L (investigation level).
- Regarding sea-area monitoring conducted by TEPCO at 1 point within a 10 km square area in front of the Power Station, rapid measurements taken of the tritium concentration in the seawater sampled on December 22 showed concentrations under the detection limit (less than 7.5 Bq/L), which was below the TEPCO operation indices of 30 Bq/L (discharge suspension level) and 20 Bq/L (investigation level).
- The quick measurement results obtained by each organization were as follows:
Ministry of the Environment: The analytical results (obtained via rapid measurements) for seawater sampled on December 9-11 and 13 at 21 points off the coast of Fukushima Prefecture, 1 point off the coast of Miyagi Prefecture, and 1 point off the coast of Ibaraki Prefecture showed tritium concentrations below the lower detection limit (less than 9 Bq/L) at all sampling points, which would have no adverse impact on human health and the environment.
Fisheries Agency: Rapid analytical results for tritium in flounder sampled on December 19 showed tritium concentrations below the lower detection limit (less than 8.9 Bq/kg) in all samples.
Fukushima Prefecture: On November 20, tritium concentrations in seawater at 9 sampling points around the Fukushima Daiichi Nuclear Power Station below the lower detection limit were recorded (less than 4.4 – 5.0 Bq/L) at all sampling points, which would have no adverse impact on human health and the environment.

➤ Progress status of handling of zeolite sandbags and others

- Regarding stagnant water in the Process Main Building (PMB) and the High Temperature Incinerator Building (HTI), the stagnant water transfer facility will be installed in the floor sump for treatment. After handling zeolite sandbags, installing a facility to receive stagnant water in Units 1-4 buildings, and implementing α -nuclide measures, the water level will be reduced in preparation for exposing the floor.
- As high-dose zeolite sandbags and others (max. 4,400 mSv/h) were detected on the basement floor of PMB/HTI, focusing on underwater collection, which is expected to provide water shielding effect, examination and work towards collection of zeolite sandbags and others in two steps (“accumulation” and “container enclosure”) are underway.
- For accumulation, on-site work commenced in March 2025 in HTI. In the trial, accumulation of about three rows was almost completed. Conversely, for new on-site knowledge such as detecting new hindrances (fallen lighting equipment and others), a response based on mockup tests is underway.
- For container enclosure, the process of design verification, including mockup tests, continues. Design specifications are almost determined, while for on-site preparation (removal of interferences to secure the first floor area), an extended removal period is anticipated.
- Based on the above process reflection, commencement of the container enclosure (HTI) will be late FY2027.

Fuel removal from the spent fuel pools

Activities ahead of spent fuel removal from the pool are progressing steadily while ensuring seismic capacity and safety.

➤ Progress of work toward fuel removal at Unit 1

- Ahead of installing a large cover over the Reactor Building, ground assembly and on-site installation are both underway.
- In the off-site yard, ground assembly of the Temporary work platform, the upper and lower frameworks, the box-ring, the overhead crane for rubble removal, and the moving roof was completed.
- On site, the installation of the moving roof, the exhaust equipment for the large cover, and other facilities is underway.
- For Unit 1, rubble inside the large cover will be cleared before fuel removal begins. To mitigate the consequences if the fuel-handling machine’s auxiliary hoist falls during rubble clearance, additional protective covering was installed over the spent fuel pool (SFP) gate on June 27, 2025.

- Mock-up testing confirmed that the SFP gate would remain unaffected even if the auxiliary hoist were to fall onto the additional cover.
- The installation of the large cover makes it difficult to directly inject water from outside, such as by using a concrete pump truck. Therefore, to diversify water injection methods in addition to the existing SFP cooling system, an alternative injection line was installed.
- To reduce waste, the fuel-handling machine that was installed in Unit 4 in 2013 will be sent back to the manufacturer for modification and will be reused for Unit 1.
- For reuse, parts that cannot be used in their current condition, or those expected to be discontinued or to deteriorate over time will be newly manufactured.
- Disassembly of the fuel-handling machine commenced on November 4, 2025. After removal of the trolley and decontamination, the fuel-handling machine was transported to off-site temporary storage on November 26, 2025.
- Disassembly and transportation will be completed by the end of FY2025.
- Installing a large cover required the process to be extended. Considering the fact that the detailed dose impact can be confirmed from the operating floor, shielding needs to be added as an additional means of reducing radiation exposure, and the work time needs to be reviewed. Work stoppages have become increasingly common due to bad weather, issues with large cranes used on-site, and other factors.
- Large cover installation is expected to be completed by the end of FY2025.
- For starting fuel removal (FY2027-2028), future timelines can be shortened by revising work procedures and other aspects after rubble removal is completed. Accordingly, the start date currently remains unchanged.
- To remove rubble effectively, all rubble conditions need to be fully assessed, considering ongoing uncertainties in the process. The decision on whether to revise the entire timeline will be considered following the mid-stage of rubble retrieval.
- Rubble removal is planned after the large cover is completed. However, considering that the upper framework and the box-ring were completed, and consequently the risk of dust scattering on the operating floor was reduced, investigation contributing to the rubble removal plan will commence as preparation for rubble removal as soon as it is ready.
- Work platform and heavy machinery for rubble handling need to be placed on the north side of the operating floor. Accordingly, floor investigation will be performed.
- As preparation for the floor investigation, rubble within the investigation scope will be transferred to the accumulation area inside the large cover wall.
- Transfer of rubble will be limited inside the large cover wall, not to the outside of the cover.
- Methods to minimize dust scattering will be used and existing dust scattering prevention measures will be followed.
- The large cover wall will increase the height (25m) of the existing windproof fence (4m). Consequently, wind inside the operating floor will be suppressed.
- In the case that an operating floor dust monitor alarm is issued during the investigation, work will be immediately suspended, and water will be sprinkled. After the moving roof of the large cover is installed, the moving roof will be closed in addition to water sprinkling.

➤ Progress of work toward fuel removal at Unit 2

- Work to install runway girders, which support the rails to be used when the fuel-handling system moves between the Reactor Building and the front chamber, was completed.
- To ensure visibility during fuel removal, a purification system was installed in the spent fuel pool.
- The fuel-handling system was transported from the factory on May 21, 2025, carried into the site of the Fukushima Daiichi Nuclear Power Station on May 24, and hoisted within the work platform for fuel removal on May 30.
- At present, unit operation tests for each component of the fuel-handling system and cleaning of the cask pit bottom are underway as part of work to install the fuel-handling system.
- Completion inspection of the crane and the jib crane was undergone on October 30, 2025, and the process transitioned to unit operation tests inside the Reactor Building from November.
- Once cask pit bottom cleaning is completed, sheet pieces will be removed.

- Progress towards work for fuel removal to commence in FY2026 remains steady at present and work will proceed with safety as the priority.

Plans to store, process and dispose of solid waste and decommission of reactor facilities

Promoting efforts to reduce and store waste generated appropriately and R&D to facilitate adequate and safe storage, processing and disposal of radioactive waste

➤ **Management status of rubble and trimmed trees**

- As of the end of November 2025, the total storage volume for concrete and metal rubble was approx. 412,900 m³ (-100 m³ compared to the end of October with an area-occupation rate of 68%). The total storage volume of trimmed trees was approx. 68,500 m³ (-200 m³, with an area-occupation rate of 39%). The total storage volume of used protective clothing was approx. 10,500 m³ (+500 m³, with an area-occupation rate of 41%). The total storage volume of radioactive solid waste (incinerated ash and others) was approx. 38,500 m³ (a slight increase, with an area-occupation rate of 61%). The decrease in rubble was due to move for area preparation, and transfer to eliminate outdoor temporary storage, etc.

➤ **Management status of secondary waste from water treatment**

- As of December 4, 2025, the total storage volume of waste sludge was 516 m³ (area-occupation rate: 74%), while that of concentrated waste fluid was 9,442 m³ (area-occupation rate: 92%). The total number of stored spent vessels, High-Integrity Containers (HICs) for the multi-nuclide removal system and others, was 5,956 (area-occupation rate: 87%).

Reduction in radiation dose and mitigation of contamination

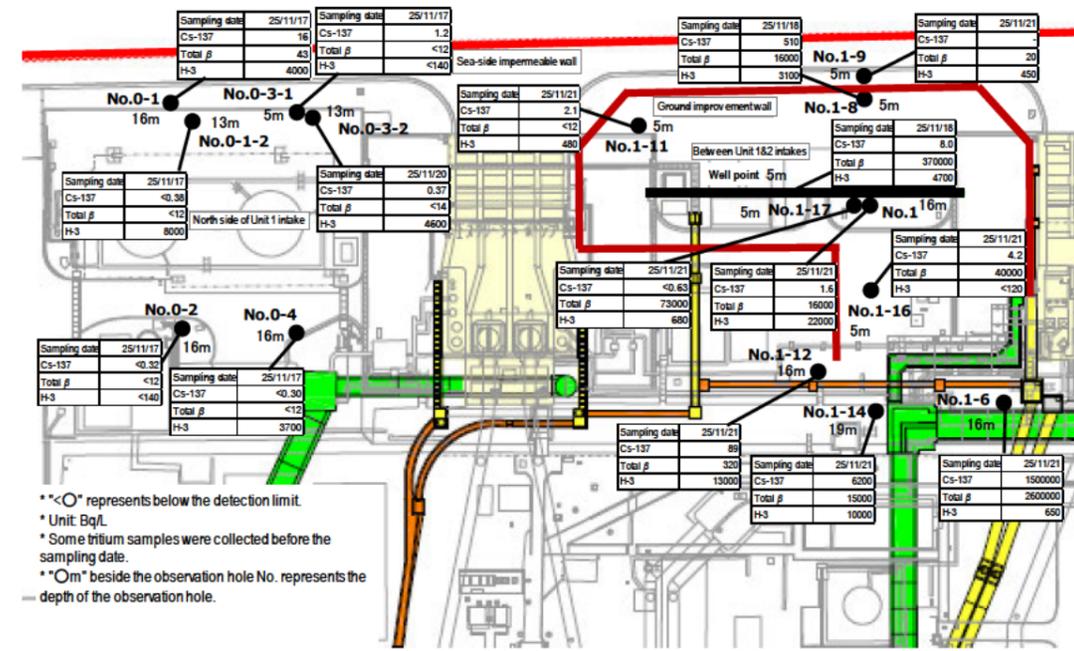
Effective dose-reduction at site boundaries and purification of port water to mitigate the impact of radiation on the external environment

➤ **Status of the groundwater and seawater on the east side of Turbine Building Units 1-4**

- In the Unit 1 intake north side area, the H-3 concentration was below the legal discharge limit of 60,000 Bq/L at all observation holes and remained constant or has been declining overall. The concentration of total β radioactive materials has generally remained constant but temporarily increased from April 2020 and is even currently increasing or declining at a low concentration at observation holes including Nos. 0-1, 0-1-2, 0-2, and 0-3-2. The trend continues to be carefully monitored.
- In the area between the Units 1 and 2 intakes, the H-3 concentration has remained below the legal discharge limit of 60,000 Bq/L at all observation holes. It has been increasing or declining at Nos. 1-14 and 1-17 but has otherwise remained constant or been declining overall. The concentration of total β radioactive materials has remained constant overall but has been increasing at No. 1-6 and increasing or declining at low concentration at Nos. 1-8, 1-9, 1-11, 1-12 and 1-14. The trend continues to be carefully monitored.
- In the area between the Units 2 and 3 intakes, the H-3 concentration has been below the legal discharge limit of 60,000 Bq/L at all observation holes. It has remained constant or been declining at many observation holes overall. The concentration of total β radioactive materials has remained constant overall but has been increasing and larger fluctuation was seen at No. 2-5. The trend continues to be carefully monitored.
- In the area between the Units 3 and 4 intakes, the H-3 concentration has been below the legal discharge limit of 60,000 Bq/L at all observation holes and remained constant or been declining overall. The concentration of total β radioactive materials has remained constant overall but has been increasing or declining at Nos. 3-4 and 3-5. The trend continues to be carefully monitored.
- In the groundwater on the east side of the Turbine Buildings, as with the total β radioactive materials, the concentration of cesium has also remained constant across the area overall, but has been increasing or declining at observation holes with low concentrations, and exceeded the previous highest record at some observation holes. Investigations will continue, including to ascertain the impact of rainfall.
- The concentration of radioactive materials in drainage channels has remained constant overall, despite increasing during rainfall. In Drainage Channel D, drainage of the low-dose area on the west side of the site started to pass from

August 30, 2022. It has remained low, despite concentrations of cesium and total β radioactive materials increasing during rainfall. From November 29, 2022, continuous monitors were installed and drainage around the Units 1 and 2 switch yard started to pass.

- In the open channel area of the seawater intake for Units 1 to 4, the concentration of radioactive materials in seawater has remained below the legal discharge limit and been declining long term, despite the temporary increases in Cs-137 and Sr-90 observed during rainfall. They have also been declining following the completed installation and the connection of steel pipe sheet piles for the sea-side impermeable walls. The concentration of Cs-137 remained slightly higher in front of the south-side impermeable walls and slightly lower on the north side of the east breakwater since March 20, 2019, when the silt fence was transferred to the center of the open channel due to mega float-related construction.
- In the port area, the concentration of radioactive materials in seawater has remained below the legal discharge limit and been declining long term, despite temporary increases in Cs-137 and Sr-90 observed during rainfall. They have remained below the level of those in the Units 1-4 intake open channel area and been declining following the completed installation and connection of steel pipe sheet piles for the sea-side impermeable walls.
- In the area outside the port, regarding the concentration of radioactive materials in seawater, those of Cs-137 and Sr-90 declined and remained low after steel pipe sheet piles for the sea-side impermeable walls were installed and connected. For Cs-137 concentrations, a temporary increase was sometimes observed on the north side of the Units 5 and 6 outlets and near the south outlet due to the influence of weather, marine meteorology and other factors. For Sr-90 concentrations, variation was observed in FY2021 in the area outside the port (north and south outlets). Monitoring of the tendency continues, including the potential influence of weather, marine meteorology and others. During the period for which ALPS treated water was discharged, the tritium concentration increased at the sampling point near the discharge side outlet, but this was considered within the assumed range based on the oceanic dispersion simulation results.



<Unit 1 intake north side, between Unit 1 and 2 intakes>

Outlook of the number of staff required and efforts to improve the labor environment and conditions

Adequate number of staff will be secured in the long-term, while firmly implementing radiation control of workers. The work environment and labor conditions will be continuously improved by responding to the needs on the site.

Staff management

- The monthly average total of personnel registered for at least one day per month to work on site during the past quarter from August – October 2025 was approx. 9,000 (cooperating company workers and TEPCO HD employees), exceeding the monthly average workforce requirement (approx. 7,900). Accordingly, sufficient personnel were registered to
- It was confirmed with the prime contractors that the estimated manpower necessary for the work in January 2026 (approx. 5,100 workers per day: cooperating company workers and TEPCO HD employees) would be secured at present. The average numbers of workers per day per month (actual values) for the most recent two years were maintained, at approx. 3,600 to 5,000.
- The number of workers from within Fukushima Prefecture decreased, while those from outside the prefecture remained constant. As of November 2025, the local employment ratio (cooperating company workers and TEPCO HD employees) remained constant at around 70%.
- The average exposure doses of workers were approx. 2.16, 2.18 and 2.08 mSv/person-year during FY2022, 2023 and 2024, respectively (The legal exposure dose limits are 100 and 50 mSv/person-year respectively over five years, the TEPCO HD management target is 20 mSv/person-year).
- For most workers, the exposure dose remained sufficiently within the limit and allowed them to continue engaging in radiation work.

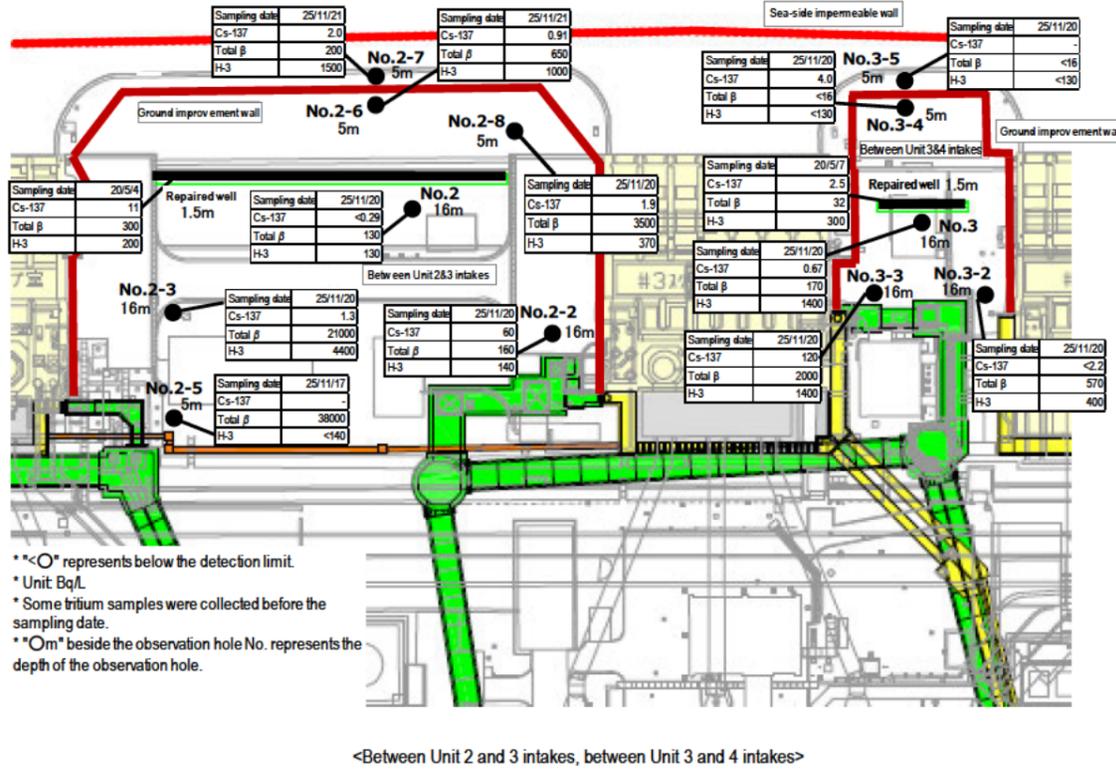


Figure 4: Groundwater concentration on the Turbine Building east side

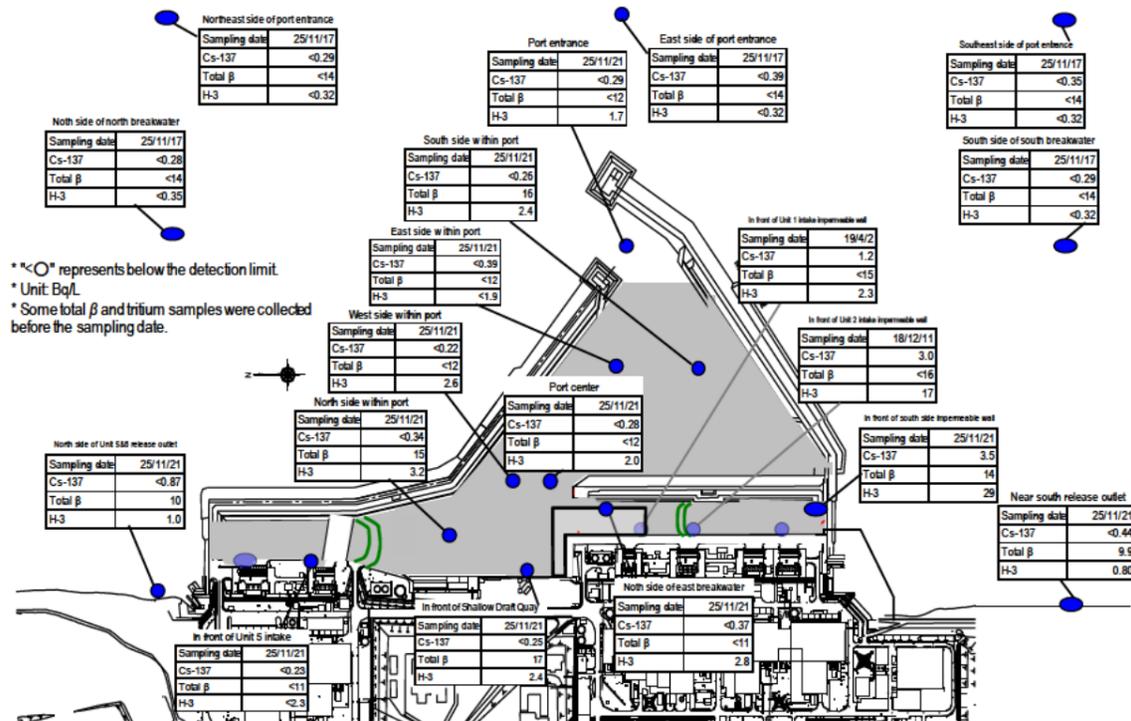


Figure 5: Seawater concentration around the port

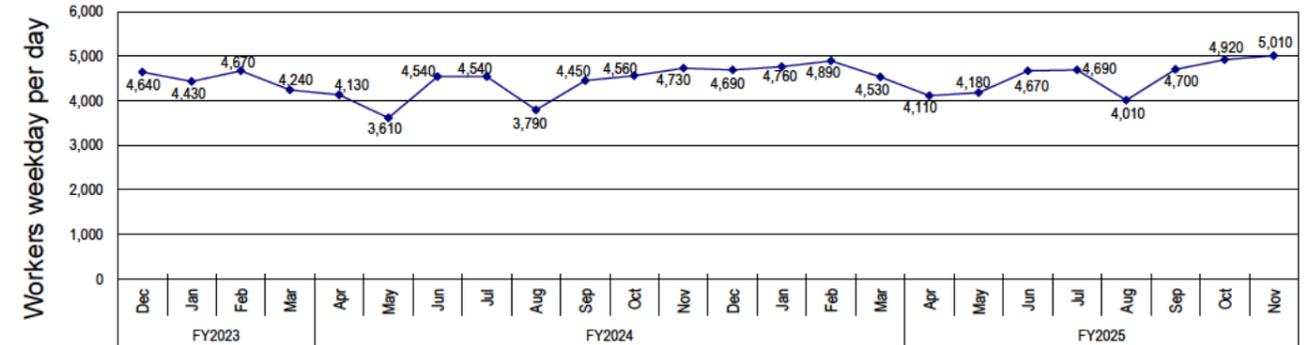


Figure 6: Changes in the average number of workers weekday per day for each month of the most recent 2 years (actual values)

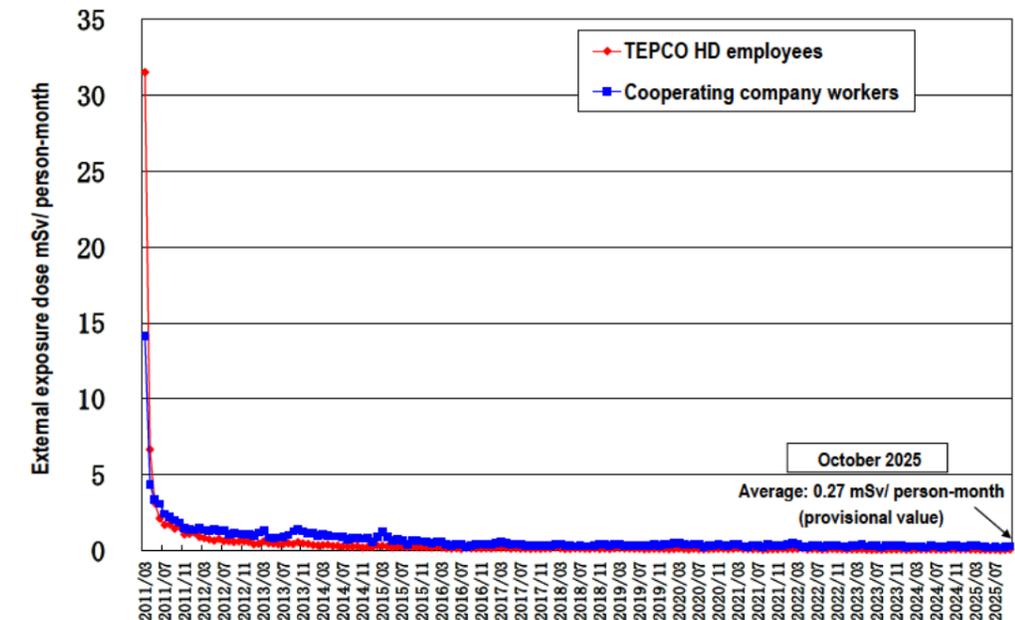


Figure 7: Changes in monthly average exposure dose of individual worker (monthly exposure dose since March 2011)

➤ Results of the 16th survey to improve the work environment

- From August to September 2025, the 16th survey to improve the work environment was conducted, to which approx. 5,600 workers responded.
- Survey results showed that, the ratio of positive evaluation increased in main questions, with approx. 77% (approx. 17% increase from the previous survey) of workers responding that they feel “no or almost no concern about radiation”.
- On the other hand, there were requests for eliminating concentration and crowd of parking time, installing rest houses nearer to work sites, and others, which revealed the need for improvement TEPCO HD will respond them sequentially to improve the work environment.
- We will continue to sincerely hear and respond to opinions and requests of workers, make efforts to improve the work environment, and work on securing “a safe and comfortable workplace”.

➤ Countermeasures for infectious diseases

- Countermeasures for various infectious diseases (influenza, norovirus, COVID-19, etc.) depend on personal decisions and basic countermeasures (visiting medical institutions when feeling unwell, ventilation, avoidance of the “Three Cs”, frequent handwashing, etc.) being implemented appropriately by each worker. TEPCO proceeds with decommissioning while prioritizing safety.
- As in previous years, to prevent the spread of influenza infections and serious infections, a vaccination program of influenza has been implemented since October 2025 for TEPCO HD employees and cooperating company workers in the Fukushima Daiichi Nuclear Power Station who wish to be vaccinated.

Status of Units 5 and 6

➤ Review of operation after removing spent fuel from Unit 6

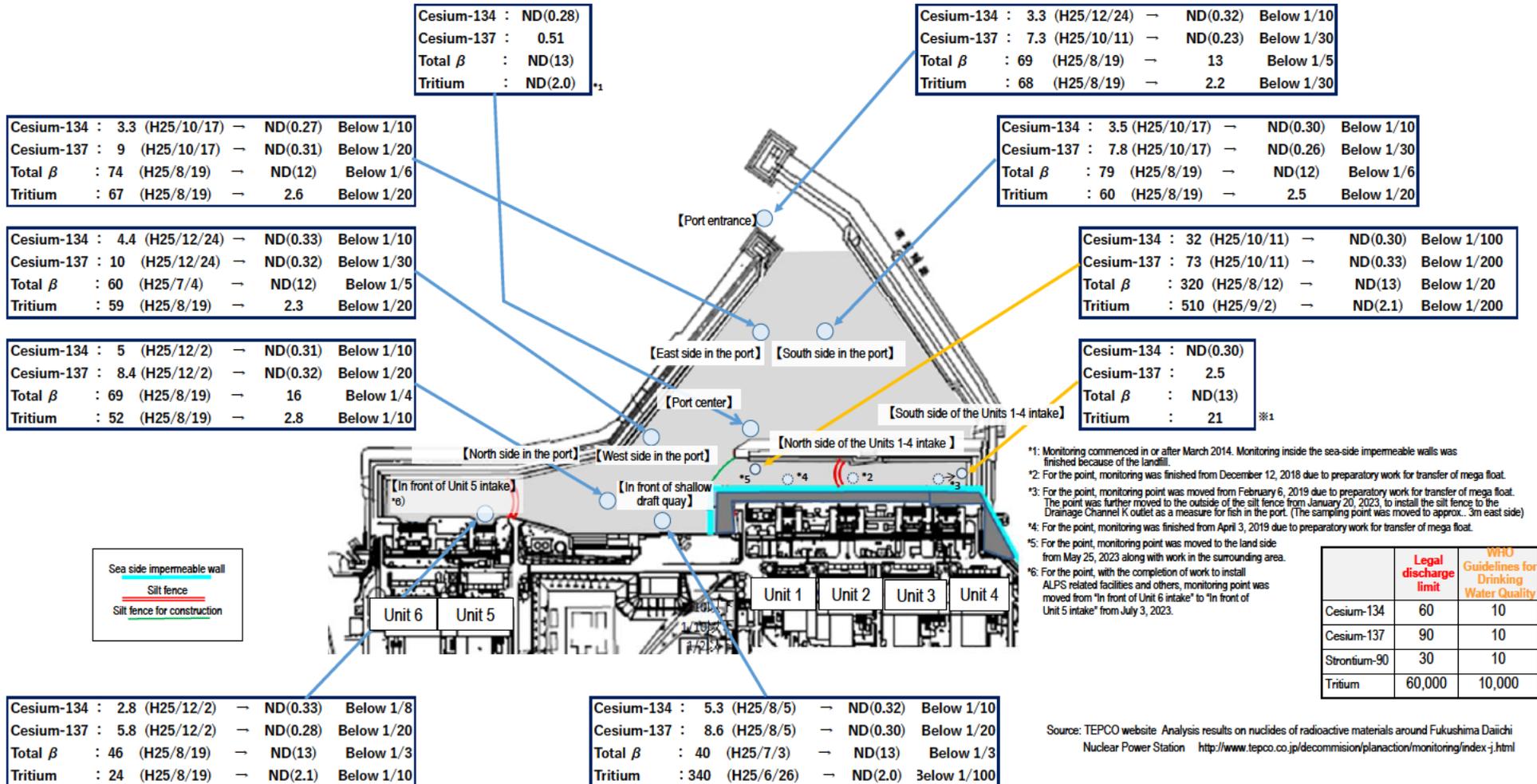
- Regarding Unit 6, removal of spent fuel was completed in April 2025. Consequently, the cooling function was no longer required for the fuel pool cooling system.
- The operation termination of the Auxiliary Seawater System (the cooling source, SW), and other systems (RCW, TCW and RHRS) was evaluated. Based on the results, it was concluded that there was no problem with the operation termination.
- Operation of related facilities using the four systems of Unit 6 (SW, RCW, TCW and RHRS) will be terminated. Regarding IA and SA systems, the connecting valves between Units 5 and 6 will be opened and cooling water will be supplied from Unit 5. Operation will be reviewed by about the first quarter of FY2026.

Status of seawater monitoring within the port (comparison between the highest values in 2013 and the latest values)

“The highest value” → “the latest value (sampled during December 8 - 22)”; unit (Bq/L); ND represents a value below the detection limit

Note: The Total β measurement value is the total radioactivity concentration of radioactive materials that emit β-ray (Potassium-40, Cesium-137, Strontium-90, progeny nuclide Yttrium-90, etc.). In general, approx. 12 Bq/L of natural nuclide Potassium-40 is included in seawater.

Summary of TEPCO data as of December 23, 2025



*1: Monitoring commenced in or after March 2014. Monitoring inside the sea-side impermeable walls was finished because of the landfill.
 *2: For the point, monitoring was finished from December 12, 2018 due to preparatory work for transfer of mega float.
 *3: For the point, monitoring point was moved from February 6, 2019 due to preparatory work for transfer of mega float. The point was further moved to the outside of the silt fence from January 20, 2023, to install the silt fence to the Drainage Channel K outlet as a measure for fish in the port. (The sampling point was moved to approx. 3m east side)
 *4: For the point, monitoring was finished from April 3, 2019 due to preparatory work for transfer of mega float.
 *5: For the point, monitoring point was moved to the land side from May 25, 2023 along with work in the surrounding area.
 *6: For the point, with the completion of work to install ALPS related facilities and others, monitoring point was moved from "in front of Unit 6 intake" to "in front of Unit 5 intake" from July 3, 2023.

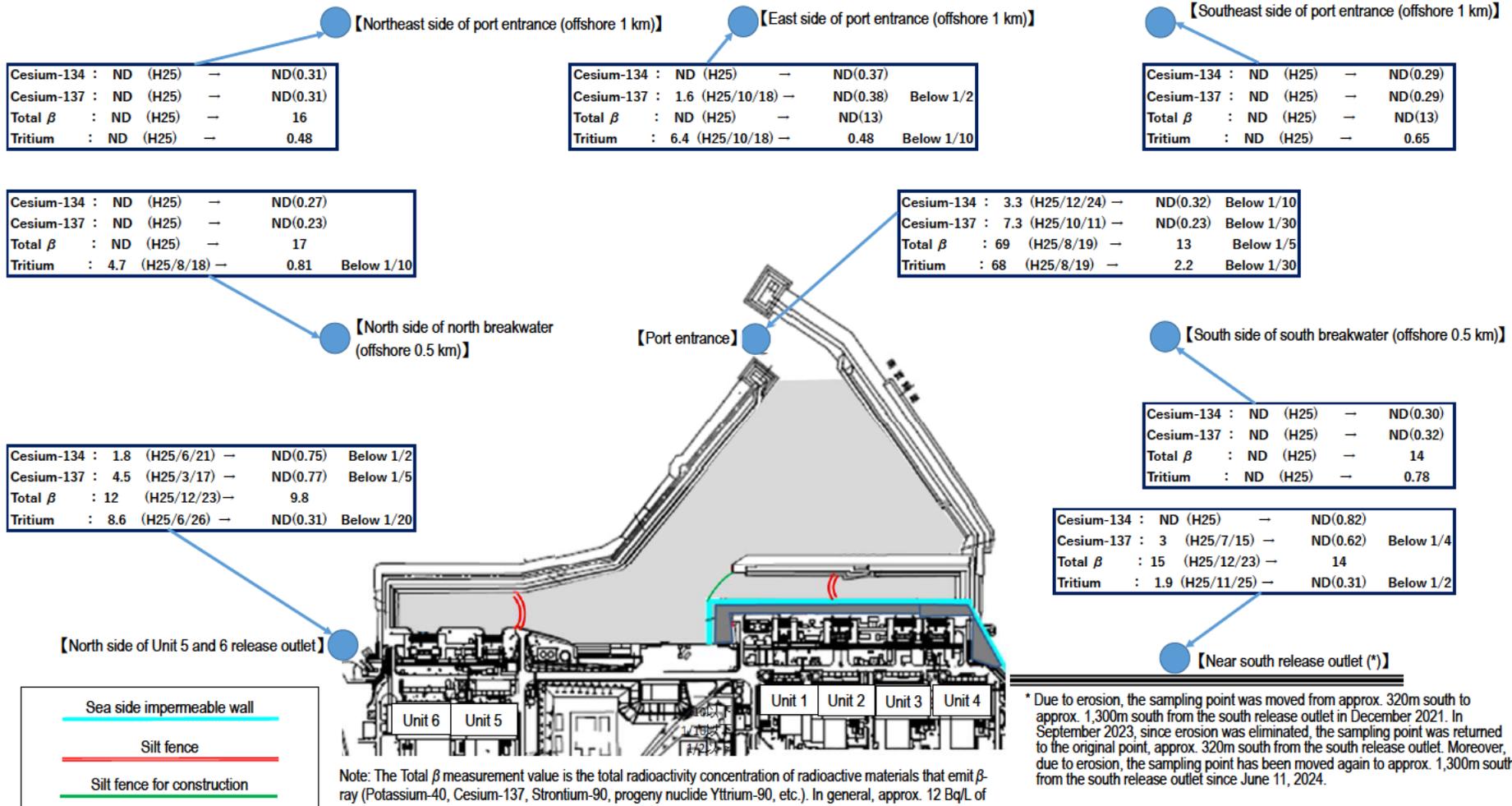
Status of seawater monitoring around outside of the port (comparison between the highest values in 2013 and the latest values)

Unit (Bq/L); ND represents a value below the detection limit; values in () represent the detection limit; ND (2013) represents ND throughout 2013

(The latest values sampled during November 17 - December 22)

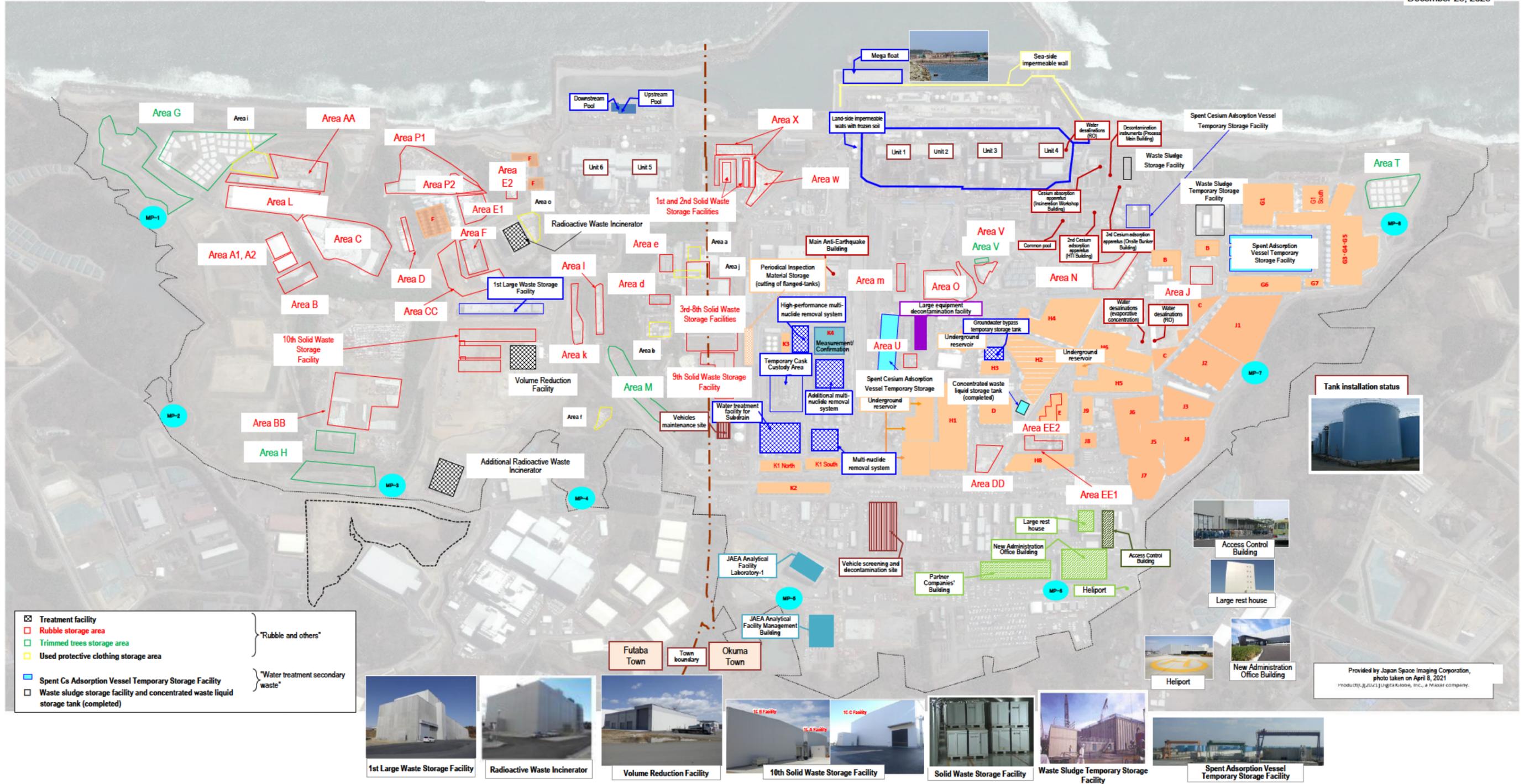
Summary of TEPCO data as of December 23, 2025

	Legal discharge limit	WHO Guidelines for Drinking Water Quality
Cesium-134	60	10
Cesium-137	90	10
Strontium-90	30	10
Tritium	60,000	10,000



* Due to erosion, the sampling point was moved from approx. 320m south to approx. 1,300m south from the south release outlet in December 2021. In September 2023, since erosion was eliminated, the sampling point was returned to the original point, approx. 320m south from the south release outlet. Moreover, due to erosion, the sampling point has been moved again to approx. 1,300m south from the south release outlet since June 11, 2024.

TEPCO Holdings Fukushima Daiichi Nuclear Power Station Site Layout



Storage status of rubble and water treatment secondary waste is quoted from "Fukushima Daiichi Nuclear Power Station Solid Waste Storage Management Plan -FY2024 Revision-" published in December 2024

Provided by Japan Space Imaging Corporation, photo taken on April 8, 2021
Product (LJ)021101010000, Inc., a Maxar company.

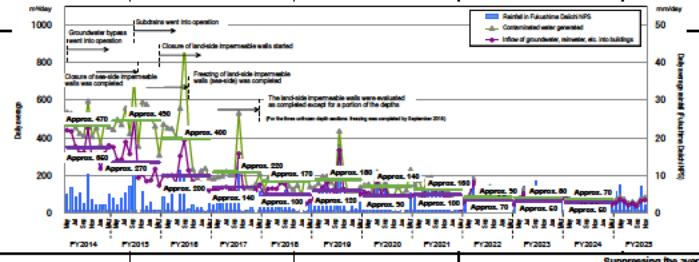
● Efforts to promote contaminated water management based on three basic policies:

- ① "Removing" the contamination source
- ② "Redirecting" groundwater from the contamination source
- ③ "Preventing leakage" of contaminated water

Milestones of the Mid- and Long-Term Roadmap (major target processes)

- [Completed] Suppressing the amount of contaminated water generated to 150 m³/day or less (within 2020)
- [Completed] Suppressing the amount of contaminated water generated to 100 m³/day or less (within 2025)
- [Completed] Treatment of stagnant water in buildings was completed* (within 2020) *Except for Units 1-3 Reactor Buildings, Process Main Building and High Temperature Incinerator Building.
- [Completed] Stagnant water in Reactor Buildings was reduced to about a half of the level at the end of 2020 (FY2022-FY2024)

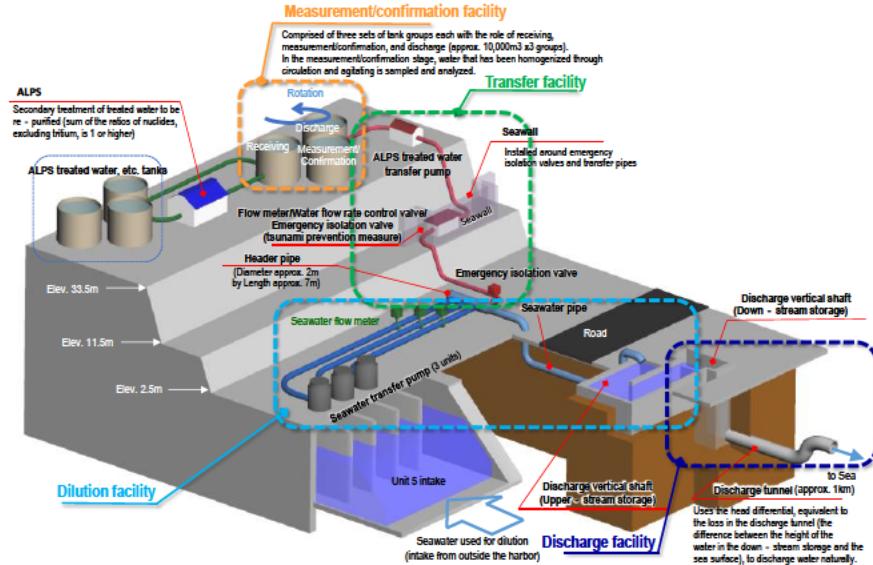
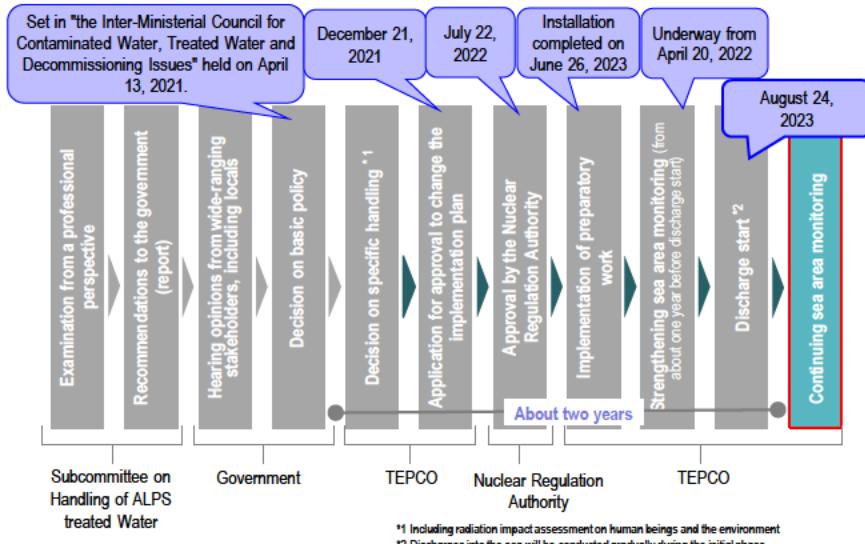
		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Contaminated water management [Remove]	Contaminated water treatment facility	<ul style="list-style-type: none"> Reception start of contaminated water to Central Waste Treatment Building Decontamination equipment (AREVA) Evaporative concentration equipment Cesium Adsorption Apparatus (KURION) 2nd Cesium Adsorption Apparatus (SARRY) 		<ul style="list-style-type: none"> Cesium Adsorption Apparatus (KURION) 												
	Removal of contaminated water from seawater pipe trench	<ul style="list-style-type: none"> Landing of the second Cesium Adsorption Apparatus (SARRY) 		<ul style="list-style-type: none"> Multi-nuclide removal system (ALPS) 												
Contaminated water management [Redirect]	Groundwater bypass		<ul style="list-style-type: none"> Installation start of groundwater bypass 		<ul style="list-style-type: none"> Operation start of groundwater bypass (drainage started from 2014.5.21) 											
	Subdrain		<ul style="list-style-type: none"> Recovery of existing subdrain pit and start of new installation Installation start of Water-Treatment Facility special for Subdrain & Groundwater drains 			<ul style="list-style-type: none"> Operation start of subdrain (drainage started from 2015.9.14) 			<ul style="list-style-type: none"> Enhancement of treatment capacity (2000m³/day) 							
	Land-side impermeable wall			<ul style="list-style-type: none"> Installation start of land-side impermeable walls 		<ul style="list-style-type: none"> Freezing start (Start of maintenance operation in east side) 			<ul style="list-style-type: none"> Freezing completion (except for some parts) 		<ul style="list-style-type: none"> Start of maintenance operation in all sections 		<ul style="list-style-type: none"> In some temperature measurement tubes near the K drainage channel cross, temperature exceeded 0°C locally 			
	Facing			<ul style="list-style-type: none"> Completion of waterproof pavement (facing) (except for areas of 2.5 and 6.5m above sea level and around Units 1-4) 						<ul style="list-style-type: none"> Placement of seaside impermeable walls complete 		<ul style="list-style-type: none"> Completion of waterproof pavement (facing) (except for around Units 1-4) 				
Contaminated water management [Retain]	Bank groundwater measure		<ul style="list-style-type: none"> High concentration of radioactive materials detected from observation well of bank Area 2.5m above sea level - Start of ground improvement by water glass Start of pumping of water from contaminated areas (well point) Installation start of seaside impermeable walls 			<ul style="list-style-type: none"> Installation of seaside impermeable walls complete Operation start of groundwater drain (pumping-up started on 2015.11.5) 										
	Storage facility	<ul style="list-style-type: none"> Storage in steel square tanks Storage in flanged cylindrical tanks Water leakage (10L) from flanged tank 		<ul style="list-style-type: none"> Water leakage (300L) from flanged tank Water leakage (1000) from flanged tank Completion of fence to prevent leakage expanding Work to raise fence height complete Leakage of contaminated water from underground reservoir -> Start of transfer to tanks Transfer of contaminated water to tanks complete Storage in cylindrical steel welded-joint tanks Sprinkling start of rainwater within tank fences by rainwater treatment facility (from 2014.5.21) 		<ul style="list-style-type: none"> Completion of purification treatment of RO concentrated salt water Completion of replacement of steel square tanks Construction of welded-joint tanks 			<ul style="list-style-type: none"> Purification of strontium-reduced water in flanged tanks complete Transfer and storage of all treated water in welded-joint tanks 				<ul style="list-style-type: none"> Purification of strontium-reduced water complete Flanged and welded-joint tanks Commencement of dismantling of J9 area tanks 			
Treatment of stagnant water		<ul style="list-style-type: none"> Installation of stagnant water transfer equipment/transfer start 		<ul style="list-style-type: none"> Completion of work to improve reliability of transfer line (replacement with PE pipes) 		<ul style="list-style-type: none"> Start to maintain water-level difference with subdrain water level Transfer start from each building to Central RW Building 		<ul style="list-style-type: none"> Floor exposure of Unit 1 TB 	<ul style="list-style-type: none"> Separation of stagnant water between Units 1 and 2 Floor exposure of Unit 1 RWB 			<ul style="list-style-type: none"> Treatment of stagnant water in buildings complete 		<ul style="list-style-type: none"> Reduction of stagnant water in the Reactor Buildings to approx. half of the level at the end of 2020 achieved 		
Countermeasures to tsunami risks	Closure of openings		<ul style="list-style-type: none"> Examination start of measures to close building openings Work for common pool complete 		<ul style="list-style-type: none"> Work for Units 1 and 2 TB complete Work for HT building complete 				<ul style="list-style-type: none"> Work for Process Main Building complete Work for Unit 3 TB complete 		<ul style="list-style-type: none"> Work for Units 1-3 RB complete 		<ul style="list-style-type: none"> Measures to close openings were completed Work for Units 1-4 RWB was completed 			
	Seawall		<ul style="list-style-type: none"> Installation of outer-rise tsunami seawall complete 							<ul style="list-style-type: none"> Construction start of Chishima Trench Tsunami Seawall Completion of installation On-site start 	<ul style="list-style-type: none"> Japan Trench tsunami seawall 	<ul style="list-style-type: none"> Japan Trench Tsunami Seawall 	<ul style="list-style-type: none"> Completion of main wall construction 			
	Mega float								<ul style="list-style-type: none"> Start of marine construction Temporary grounding of mega float 		<ul style="list-style-type: none"> Internal filling complete (reduction of tsunami risks) 					



<Unit 4 south side>

In "the Inter-Ministerial Council for Contaminated Water, Treated Water and Decommissioning Issues" held on April 13, 2021, the basic policy on how to handle ALPS treated water was set. Based on this, the response of TEPCO was announced on April 16.

Regarding the discharge of ALPS treated water into the sea, TEPCO must comply with regulatory and other safety-related standards to ensure the safety of the public, surrounding environment and agricultural, forestry and fishery products. To minimize adverse impacts on reputation, monitoring will be further enhanced, objectivity and transparency ensured by engaging with third-party experts and safety checked by the IAEA. Moreover, accurate information will be disseminated continuously and in a highly transparent manner.



● Rearing test of marine organisms

All planned marine organisms rearing tests have been completed. The results confirmed by the rearing tests were as follows:

- Marine organisms rearing tests were conducted both in "normal seawater" and in "ALPS treated water diluted with seawater". The marine organisms in these two environments were compared via rearing data to confirm the absence of any significant differences between the two populations.
- TEPCO confirmed that "tritium is not concentrated in the living bodies and that the concentration of tritium in living bodies does not exceed that of the rearing environment" as demonstrated in previous knowledge.
- Flounders and abalones that were being raised in normal seawater were put in "water discharged into the environment" and TEPCO confirmed that there was no remarkable change in the growth of the flounders or abalones around this time. Flounder and abalone were reared in water discharged into the environment for approximately six months and we confirmed that there is no change in the growth of them.

Information provision and communication to foster understanding

Occasions to deepen the understanding are organized by communications related to decommission via various media and visit to the power station.

- On the dedicated website "Treated Water Portal Site" (Japanese, English, Chinese and Korean) within the TEPCO website, monitoring results of radioactive materials are published timely.
- Visit and dialogue meeting of Fukushima Daiichi Nuclear Power Station have been held since FY2019 for 13 cities, towns and villages in the Hamadori region. From FY2021 onward, these activities have been expanded to include the entire Fukushima Prefecture.
- Through various opportunities such as visit and on-site explanations, communications continue where opinions of related parties are heard, their thoughts are taken seriously, and TEPCO conveys its efforts, thoughts, and countermeasures for reputational damage.



● Status of discharge of ALPS treated water into the sea

Discharge of ALPS treated water into the sea commenced from August 24, 2023, and the 1st discharge was completed on September 11.

During the discharge period, no abnormality was detected by the sea area monitoring conducted by the national government, Fukushima Prefecture and TEPCO.

<Discharges in FY2025>

Tank group discharged	Tank Group A	Tank Group C	Tank Group A	Tank Group B
Tritium concentration	370,000 Bq/L	250,000 Bq/L	380,000 Bq/L	210,000 Bq/L
Discharge commencement	April 10, 2025	July 14, 2025	August 7, 2025	September 11, 2025
Discharge termination	April 28, 2025	August 3, 2025	August 25, 2025	September 29, 2025
Discharge amount	7,853 m ³	7,873 m ³	7,908 m ³	7,872 m ³
Total tritium amount	Approx. 2.9 trillion Bq	Approx. 2.0 trillion Bq	Approx. 3.0 trillion Bq	Approx. 1.7 trillion Bq

Tank group discharged	Tank Group C	Tank Group A
Tritium concentration	250,000 Bq/L	310,000 Bq/L
Discharge commencement	October 30, 2025	December 4, 2025
Discharge termination	November 17, 2025	December 22, 2025
Discharge amount	7,838 m ³	7,833 m ³
Total tritium amount	Approx. 2.0 trillion Bq	Approx. 2.4 trillion Bq

● Publication of the Comprehensive Report of the IAEA safety review

The Comprehensive Report on the safety review concerning handling of ALPS treated water was published by the IAEA on July 4, 2023.

In the Executive Summary of the IAEA Comprehensive Report, the IAEA concluded the following: (1) the activities by Japan associated with the discharge of ALPS treated water into the sea are consistent with relevant international safety standards, (2) the discharge of the ALPS treated water will have a negligible radiological impact on people and the environment.

We will continue to share necessary information with the IAEA, while striving to foster further understanding of the international community about the discharge of ALPS treated water into the sea.

<https://www.iaea.org/topics/response/fukushima-daiichi-alps-treated-water-discharge-comprehensive-reports>



Examination concerning handling of ALPS treated water

Tritiated Water Taskforce (2013.12 – 2016.5, 15 meetings)



2016.6 Report of Tritiated Water Taskforce

Subcommittee on Handling of ALPS treated water (2016.11 – 2020.1, 17 meetings)

2018.8 Explanatory and hearing meeting, receiving opinions

2020.2 Report of Subcommittee on Handling of ALPS treated water

Opportunity for receiving opinions from parties concerned concerning handling of ALPS treated water (2020.4 – 2020.10, 7 meetings)

Review meeting concerning the implementation plan on handling of ALPS treated water (2021.7 - 2022.4, 15 meetings)

2023.8.24 Commencement of discharge

2022.4.28, 5.13, 7.15

Application to partially revise the Application Documents for Approval to Amend the Implementation Plan was submitted

2022.7.22 Application for the Application Documents for Approval to Amend the Implementation Plan was approved

2022.8.4 Work has commenced

2023.2.14, 20 Application for the Application Documents for Approval to Amend the Implementation Plan was submitted (amendment of organizational structure, and nuclides to be measured and assessed, and others)

Tank area viewed from the Large Rest House (2015.10.29)

2021.4.13 The basic policy on the handling of ALPS treated water was set
2021.4.16 The response of TEPCO was announced

2022.7.22 Application for the Application Documents for Approval to Amend the Implementation Plan was approved

2022/8/30 The "Approach to Strengthening and Expansion of Measures in the Handling of ALPS Treated Water" was summarized

2022.11.14 Application for the Application Documents for Approval to Amend the Implementation Plan was submitted (amendment of organizational structure, and nuclides to be measured and assessed, and others)

2023.6.26 Completion of installation
2023.7.7 Receipt of Certificate of Completion for Inspection Prior to Use

2014

2015

2016

2017

2018

2019

2020

2021

2022

2023

2023

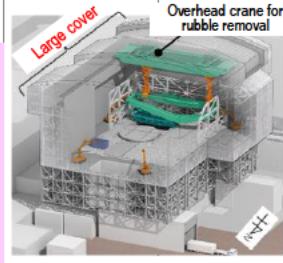
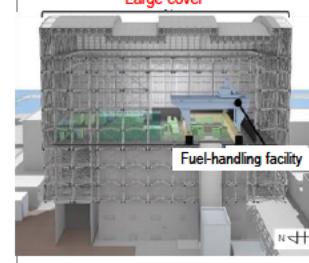
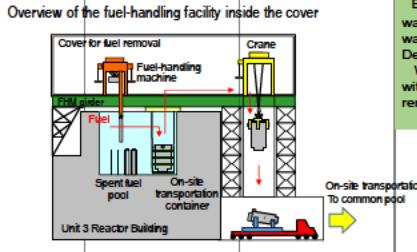
2023

3 Removal of fuel from spent pool

Milestones of the Mid- and Long-Term Roadmap (major target processes)

- Completion of Units 1-6 fuel removal (within 2031)
- Completion of installation of Unit 1 large cover (around FY2023), start of Unit 1 fuel removal (FY2027-2028)
- Start of Unit 2 fuel removal (FY2024-2026)

Legend: Rubble removal, etc. (orange arrow) | Installing a fuel removal machine (yellow arrow) | Fuel removal (green arrow) | Storage and handling of fuel (blue arrow)

Legend	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025~				
Unit 1	<p>For Unit 1, a large cover will be installed over the whole building, within which rubble will be removed.</p> <p><Reference> Progress to date Rubble removal on the north side of the operating floor started from January 2018 and has been implemented sequentially. In July and August 2019, the well plug, which was misaligned, was investigated, followed in August and September by the conditions of the overhead crane. Based on the results of these investigations, as the removal requires more careful work taking dust scattering into consideration, two methods were examined: Installing a cover after rubble removal, initially installing a large cover over the Reactor Building, then removing rubble inside the cover.</p>			 <p>Rubble removal (image)</p>	 <p>Fuel removal (image)</p>			<p>▼2017.12 Completion of building cover dismantling and windbreak fence installation</p> <p>▼2018.1-2020.12 Rubble removal on the north side of Reactor Building</p> <p>▼2018.9-12 Removal of X-braces</p>			 <p>Upper structure Lower structure 2024.12</p>			<p>In order to install a large cover at the Unit 1 Reactor Building, high-dose locations were detected on the south side exterior wall, and as a measure to reduce radiation exposure, shielding was installed over the high-dose locations. The target to complete the installation of the Unit 1 large cover had been around the summer of FY2025, based on the impact of hot spots detected on the south side (announced in December 2023). The process needs to be extended, because as the lower structure was installed and the detailed dose impact can be confirmed from the operating floor, radiation exposure reduction measures need to be implemented to ensure safer work. In addition, days when work was forced to be suspended due to bad weather increased, and trouble occurred with the crane used for the work. Based on the possibility of future process extension for similar reasons, and the necessity to assume shortened work time due to intense heat and others, expected completion of installation of a large cover will be changed from around the summer in FY2025 to within FY2026. Among the milestones of the Mid-and-Long-term Roadmap, the start of fuel removal from the Unit 1 spent fuel pool, which is set from FY2027 to FY2028, is not reviewed at present, because future process can be shortened by reviewing the work procedures and others in work after rubble removal.</p>					
Unit 2	<p>For Unit 2, with the removal of spent fuel in mind, a "gantry for fuel removal" (gantry and front room) will be constructed on the south side of the building.</p> <p><Reference> Progress to date Previously, scope to recover the existing overhead crane and the fuel-handling machine was examined. However, the high radiation dose inside the operating floor meant the decision was taken to dismantle the upper part of the building in November 2015. Findings from internal investigations of the operating floor from November 2018 to February 2019 underlined the potential to conduct limited work there and the means of accessing from the south side was examined.</p>							<p>▼2015.3-2016.11 Yard construction</p> <p>▼2016.9-2017.4 West-side gantry installation work</p> <p>▼2017.5 Opening a hole in the west-side external wall</p>	 <p>Runway girder <Installation of the runway girder> (2025.3.19)</p>							<p>▼2018.8-2020.12 Moving and containment of remaining objects</p> <p>▼2020.6 Investigation inside the spent fuel pool</p> <p>▼2021.6-2022.1 Decontamination of R/B operating floor (1)</p> <p>▼2021.9-2022.5 Shielding installation in R/B operating floor (1)</p> <p>▼2022.5-2022.6 Transfer of FHM</p> <p>▼2022.7-2023.1 Removal and clean-up of FHM operation room</p> <p>▼2022.12-2023.3 Removal of existing facilities in operating floor</p> <p>▼2023.4-2023.11 Decontamination of R/B operating floor (2)</p> <p>▼2023.11- Shielding of R/B operating floor (2)</p> <p>▼2024.4 Start of preparation for installing an opening</p> <p>▼2024.6- Completion of installation of gantry for fuel removal</p> <p>▼2024.9 Start of trial operation of ventilation equipment</p> <p>▼2024.10 Start of installation of runway girder</p> <p>▼2025.3 Completion of installation of runway girder</p> <p>▼2025.5 Completion of hanging of fuel-handling machine</p>			
Unit 3	<p>All fuel assemblies from Unit 3 had been removed by February 2021.</p>															<p>▼2013.10 Completion of removal of large rubble on the Reactor Building top floor</p> <p>▼2015.8 Completion of removal of the fuel-handling machine B within the spent fuel pool</p> <p>▼2016.12 Completion of shielding on the Reactor Building top floor</p> <p>▼2017.1 Installation start of a cover for fuel removal</p> <p>▼2019.4.15 Start of fuel removal</p> <p>▼2021.2.28 Fuel removal completed (566 assemblies)</p>	 <p>Overview of the fuel-handling facility inside the cover</p>	<p>Before installing a cover for fuel removal, the process of removing large rubble from the spent fuel pool was completed in November 2015. To ensure safe and steady fuel removal, training via remote control was conducted at the factory using the actual fuel-handling machine to be installed on site (February – December 2015). Installation of the fuel removal cover was completed on February 23, 2018. With fuel removal in mind, rubble retrieval training inside the pool, which was scheduled in conjunction with fuel removal training, started from March 15, 2019 and fuel removal started from April 15, 2019. Fuel removal was completed on February 28, 2021.</p>	 <p><Unit 3 Cover for fuel removal (dome roof) 2019.2.21></p>
Unit 4	<p>All fuel assemblies from Unit 4 had been removed by December 2014.</p>															<p>▼2011.11- 2012.7 Removal of rubble on the Reactor Building top floor</p> <p>▼2012.4-2013.3 Ground improvement and foundation work</p> <p>▼2013.4-2013.7 Installation of external walls and roof panels</p> <p>▼2013.6-2013.10 Installation of overhead crane and fuel-handling machine</p> <p>▼2013.8-2013.10 Removal of rubble inside the reactor well and pool</p> <p>▼2013.11.18 Start of fuel removal</p> <p>▼2014.12.22 Fuel removal was completed (1533 assemblies)</p>	 <p><Unit 4 Cover for fuel removal></p>	 <p>Fuel removal</p>	<p>In the Mid- and Long-Term Roadmap, the Phase 1 target involved starting to remove fuel from inside the spent fuel pool (SFP) of the 1st Unit within two years of completing Step 2 (by December 2013). On November 18, 2013, fuel removal from Unit 4, namely the first Unit, got underway and Phase 2 of the roadmap started. On November 5, 2014, within a year of commencing fuel removal work, all 1,331 spent fuel assemblies in the pool had been transferred. The transfer of the remaining non-irradiated fuel assemblies to the Unit 6 SFP was completed on December 22, 2014. (two of the non-irradiated fuel assemblies were removed in advance in July 2012 for fuel checks) This marks the completion of fuel removal from the Unit 4 Reactor Building.</p>

* Part of the photo is corrected because it includes machine information related to nuclear material protection.

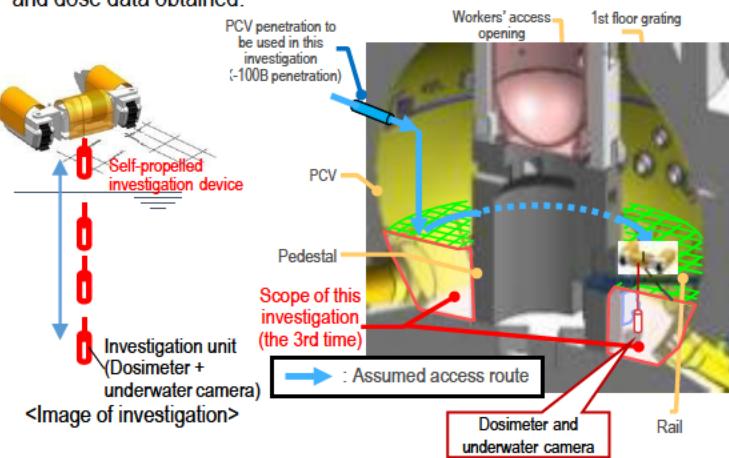
Milestones of the Mid- and Long-Term Roadmap (major target processes)

Commencement of fuel debris retrieval from the first unit (Unit 2). Expanding the scale in stages (From September 10, 2024, trial fuel debris retrieval commenced)

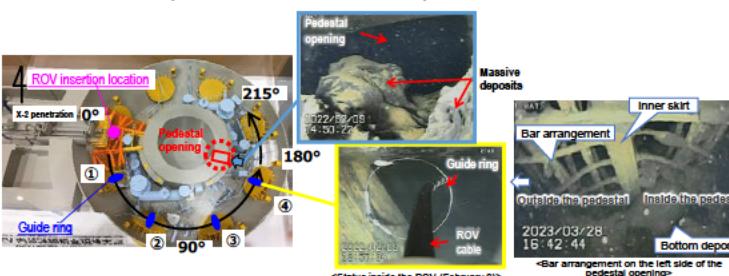
Before removing fuel debris, investigations inside the Primary Containment Vessel (PCV) are conducted to inspect the conditions there, including locations of fuel debris.

Unit 1 Investigation overview

- In April 2015, a device having entered the inside of the PCV via a narrow opening (bore:φ100 mm) collected information such as images and airborne dose inside the PCV 1st floor.
- In March 2017, an investigation using a self-propelled investigation device was conducted to inspect the spreading of debris to the basement floor outside the pedestal, with images taken of the PCV bottom status for the first time. The conditions inside the PCV will continue to be examined, based on the imagery and dose data obtained.



- In February 2022, "the guide ring" was installed to facilitate the investigation. From March 28, 2023, the investigation inside the pedestal by ROV-A2 started and confirmed that a portion of the bar arrangement was exposed. Regarding the soundness of the pedestal, based on the past earthquake resistant evaluation by the International Research Institute for Nuclear Decommissioning (IRID), it was evaluated that even though a portion of the pedestal was lost, there would be no serious risk. However, as the present information is very limited, the investigation will continue to acquire as much information as possible for continued evaluation.



Unit 1 PCV internal investigation

Investigations inside the PCV	1st (2012.10)	- Acquiring images - Measuring the air temperature and dose rate - Measuring the water level and temperature - Sampling stagnant water - Installing permanent monitoring instrumentation
	2nd (2015.4)	- Confirming the status of the PCV 1st floor - Acquiring images - Measuring the air temperature and dose rate - Replacing permanent monitoring instrumentation
	3rd (2017.3)	- Confirming the status of the PCV 1st basement floor - Acquiring images - Measuring the dose rate - Sampling deposit - Replacing permanent monitoring instrumentation
	4th (From 2022.2)	- Acquiring information inside PCV (inside/outside of the pedestal) - Acquiring images - Measuring deposit thickness and sampling deposit - Detecting deposit debris, 3D mapping
Leakage points from PCV	- PCV vent pipe vacuum break line bellows (identified in 2014.5) - Sand cushion drain line (identified in 2013.11)	

Evaluation of the location of fuel debris inside the reactor by measurement using muons
Confirmed that there was no large fuel in the reactor core. (2015.2-5)

Unit 2 Investigation overview

- In January 2017, a camera was inserted from the PCV penetration to inspect the conditions of the rail on which the robot traveled. The results of a series of investigations confirmed some gratings had fallen and deformed as well as a quantity of deposit inside the pedestal.
- In January 2018, the conditions below the platform inside the pedestal were investigated. Based on the analytical results of images obtained in the investigation, deposits, probably including fuel debris, were found at the bottom of the pedestal. Moreover, multiple parts exceeding the surrounding deposits were also detected. We presumed that there were multiple instances of fuel debris falling.
- In February 2019, an investigation touching the deposits at the bottom of the pedestal and on the platform was conducted and confirmed that the pebble-shaped deposits, etc. could be moved and that hard rock-like deposits that could not be gripped may exist.



- In October 2020, a deposits contact investigation at the PCV penetration (X-6 penetration) was conducted. This confirmed that deposits inside the penetration had not deformed and come unstuck.



- From September 10, 2024, the end tool of the telescopic equipment passed through the isolation valve, and the trial fuel debris retrieval commenced. On October 30, fuel debris was gripped with the end tool, on November 2, the guide pipe was pulled off, and the telescopic equipment was stored in the enclosure. On November 7, fuel debris was carried out from the hatch on a side of the enclosure, and the trial retrieval was completed.



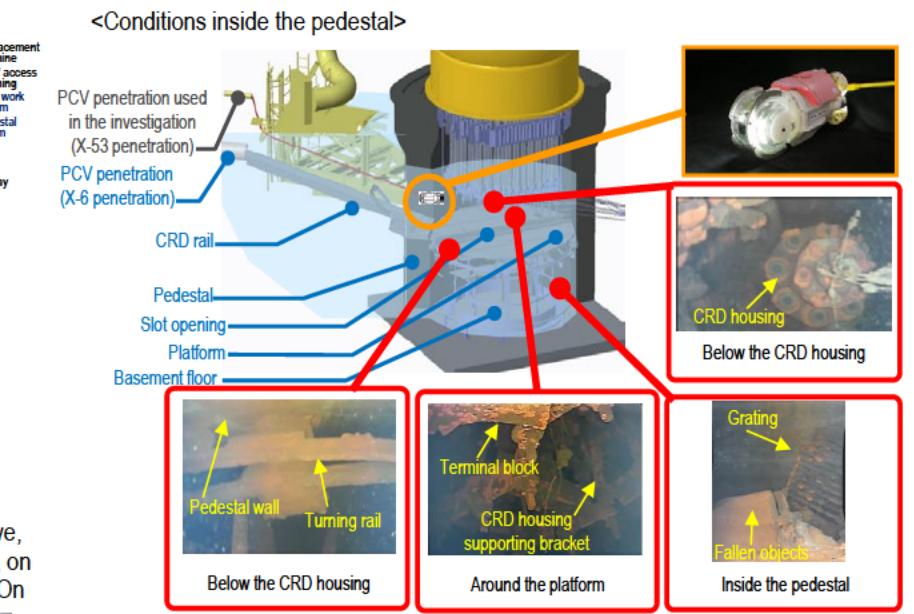
Unit 2 PCV internal investigation

Investigations inside the PCV	1st (2012.1)	- Acquiring images - Measuring the air temperature
	2nd (2012.3)	- Confirming water surface - Measuring the water temperature - Measuring the dose rate
	3rd (2013.2 - 2014.6)	- Acquiring images - Sampling stagnant water - Measuring water level - Installing permanent monitoring instrumentation
	4th (2017.1-2)	- Acquiring images - Measuring the dose rate - Measuring the air temperature
	5th (2018.1)	- Acquiring images - Measuring the dose rate - Measuring the air temperature
	6th (2019.2)	- Acquiring images - Measuring the dose rate - Measuring the air temperature - Determining characteristics of a portion of deposit
Leakage points from PCV	- No leakage from the torus chamber rooftop - No leakage from any internal/external surfaces of S/C	

Evaluation of the location of fuel debris inside the reactor by measurement using muons
The existence of high-density materials, which were considered to constitute fuel debris, was confirmed at the bottom of RPV and in the lower part and outer periphery of the reactor core. It was assumed that a significant portion of fuel debris existed at the bottom of RPV. (2016.3-7)

Unit 3 Investigation overview

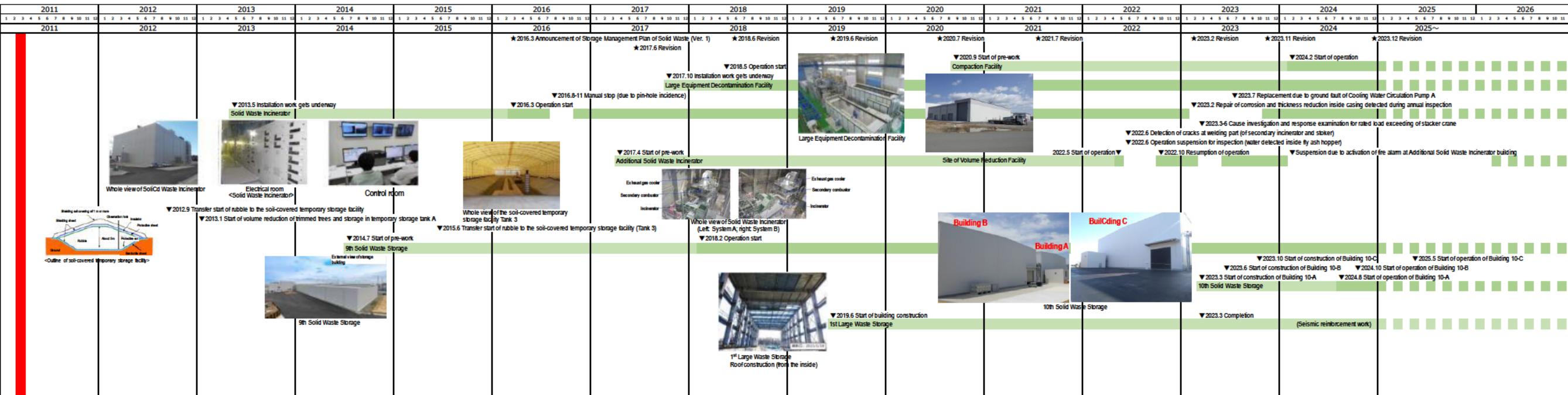
- In October 2014, the conditions of X-53 penetration, which may be under water and which is scheduled for use to investigate the inside of the PCV, were investigated via remote-controlled ultrasonic test equipment. The results showed that the penetration was not under water.
- In October 2015, to confirm the conditions inside the PCV, an investigative device was inserted into the PCV from X-53 penetration to obtain images, data on dosage and temperature and sample stagnant water. No damage to the structure and walls inside the PCV was identified and the water level was almost identical to estimated values. In addition, the dose inside the PCV was confirmed to be lower than in other Units.
- In July 2017, the inside of the PCV was investigated using the underwater ROV (remotely operated underwater vehicle) to inspect the inside of the pedestal. Analysis of the imagery obtained in the investigation identified damage to multiple structures and the supposed core internals.
- Videos obtained in the investigation were reproduced in 3D. Based on the reproduced images, the relative positions of the structures, such as the rotating platform slipping off the rail with a portion buried in deposits, were visually understood.



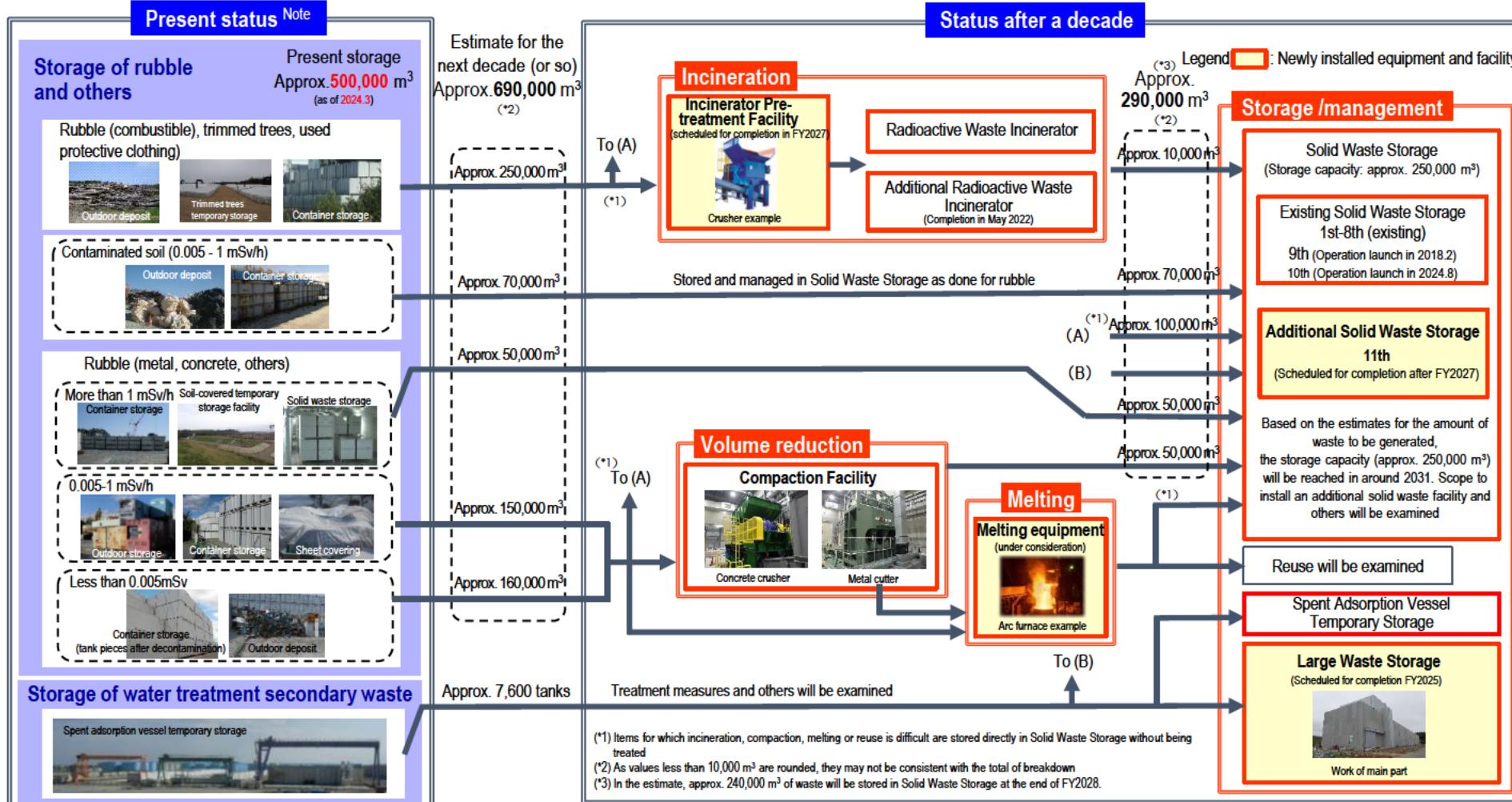
Unit 3 PCV internal investigation

Investigations inside the PCV	1st (2015.10-12)	- Acquiring images - Measuring the air temperature and dose rate - Measuring the water level and temperature - Sampling stagnant water - Installing permanent monitoring instrumentation (2015.12)
	2nd (2017.7)	- Acquiring images - Installing permanent monitoring instrumentation (2017.8)
Leakage points from PCV	- Main steam pipe bellows (identified in 2014.5)	
Evaluation of the location of fuel debris inside the reactor by measurement using muons The evaluation confirmed that no large lump existed in the core area where fuel had been placed and that a portion of the fuel debris potentially existed at the bottom of the RPV. (2017.5-9)		

Milestones of the Mid- and Long-Term Roadmap (major target processes)
Eliminating temporary outdoor storage of rubble and others * Except for secondary waste of water treatment and materials for reuse or recycling (within FY2028)



● Solid Waste Storage Management Plan for the Fukushima Daiichi Nuclear Power Station (Revision in December 2024)



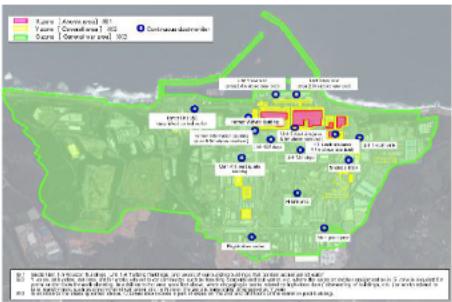
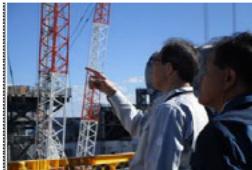
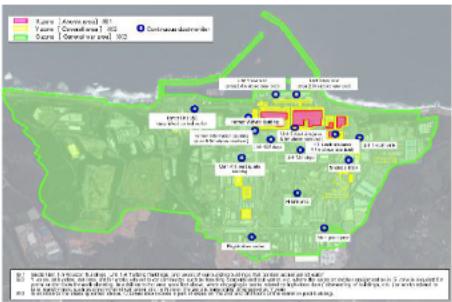
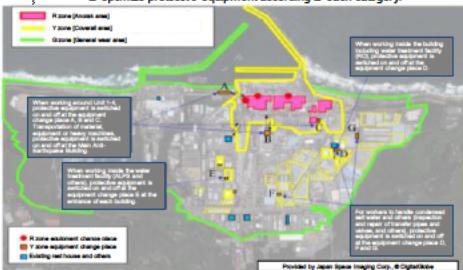
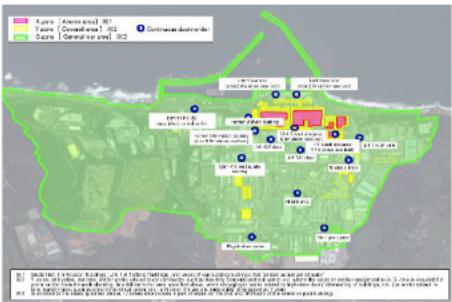
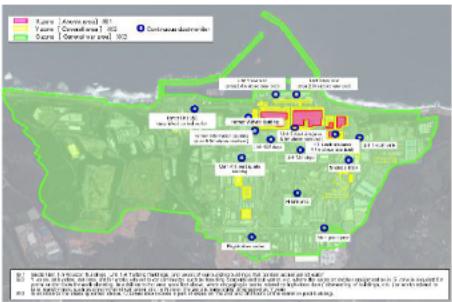
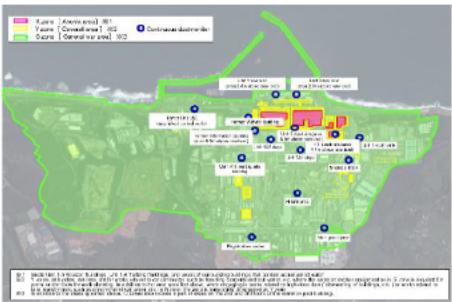
Note: Used protective clothing before incineration and BG-level concrete waste for which treatment and reuse is decided at present are not included.

- The exposure dose at the site boundaries will be reduced by aggregation to indoor storage and eliminating outdoor storage.
- The exposure dosage in exhaust gas from incinerators and at site boundaries is measured and announced on the website and others.

6 Improvement of work environment

While ensuring reliable exposure dose management for workers, sufficient personnel are secured. Moreover, while getting a handle on on-site needs, the work environment and labor conditions are continuously improved.

Regarding the site-wide reduction in the radiation dose and prevention of contamination spreading, the radiation dose on site was reduced by removal of rubble, topsoil and facing. Moreover, the operation was improved to use environmentally-improved areas as a Green Zone, within which workers are allowed to wear general work clothes and disposable dust-protective masks which are less of a physical burden.

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024~
<p>▼ From March 12, 2011, in response to the increased airborne concentration of radioactive materials, instructions were issued to wear full-face masks throughout the Fukushima Daiichi NPS site, excluding the Main Anti-Earthquake Building and the rest house.</p>  <p>External view of Access Control Facility</p>	<p>▼ From May 2013, full-face mask unnecessary area was expanded sequentially.</p> <p>▼ In June 2013, operation of the Access Control Facility started near the main gate of the Fukushima Daiichi NPS, to which duties conducted at J-village were shifted, including contamination examination, decontamination, switching protective equipment on and off and distribution/collection of dosimeters.</p>  <p>Access Control Facility (2014.11.7)</p>	<p>▼ From May 2013, full-face mask unnecessary area was expanded sequentially.</p> <p>▼ In June 2013, operation of the Access Control Facility started near the main gate of the Fukushima Daiichi NPS, to which duties conducted at J-village were shifted, including contamination examination, decontamination, switching protective equipment on and off and distribution/collection of dosimeters.</p>  <p>Large rest house under construction (2014.9.30)</p>	<p>▼ To help workers in the Fukushima Daiichi NPS precisely understand the conditions of their workplaces, a total of 86 dose-rate monitors were installed by January 2015. These monitors allow workers to confirm on-site dose rates at their workplaces in real time.</p> <p>▼ In March 2015, the Fukushima revitalization meal service center opened.</p> <p>▼ A large rest house for workers was established and its operation commenced in May 2015. Spaces in the large rest house are also installed for office work and collective worker safety checks as well as taking rest. In March 2016, a convenience store opened in the large rest house. In April, the shower room went into operation.</p>  <p>Move in general working clothes (2016.1.7)</p>	<p>▼ In March 2015, the Fukushima revitalization meal service center opened.</p> <p>▼ A large rest house for workers was established and its operation commenced in May 2015. Spaces in the large rest house are also installed for office work and collective worker safety checks as well as taking rest. In March 2016, a convenience store opened in the large rest house. In April, the shower room went into operation.</p>  <p>Facing (2017.4.13)</p>	<p>▼ In February 2017, operation started at the Partner Companies' Building next to the New Administration Office Building.</p> <p>▼ In May 2017, a heliport for emergency transport was installed inside the Fukushima Daiichi NPS and went into operation. Compared to the previous operation (at Koriyama Coast, Futaba Town or Fukushima Daini NPS, relying to a doctor helicopter), a faster response is available for seriously ill patients requiring treatment at external medical institutions.</p> 	<p>▼ In May 2018, within about 96% of the site, workers are allowed to wear light equipment such as general workwear and disposable dust-protective masks.</p> 	<p>▼ From November 2018, from the west-side high-ground area, where Units 1-4 can be viewed, visitors can see the site in their normal clothes without having to change.</p>  <p>Visit by Governor of Fukushima Prefecture to the Fukushima Daiichi NPS (2018.11.1)</p>  <p>Visit by Prime Minister Kishida to the Fukushima Daiichi NPS (2021.10.17)</p>	<p>▼ In August 2021, operation started while eliminating the need for the DS2 mask during light work in G-zone outside the protection area around Unit 1-4 (except for inside Units 5 and 6).</p> 	<p>▼ In May 2013, areas excluding those around Unit 1-4, tank areas and rubble storage areas were set to full-face mask unnecessary areas.</p> 	<p>▼ In May 2015, full-face mask unnecessary area was expanded to cover about 90% of the site.</p> <p>▼ In March 2017, the G-zone area was expanded (to cover 95% of the whole site).</p> <p>▼ In March 2016, based on the progress of measures to reduce the environmental dosage on site, the site was categorized into two zones: Highly contaminated area around Units 1-4 buildings, etc. and other areas where limited operation started to optimize protective equipment according to each category.</p> 	<p>▼ In May 2018, within about 96% of the site, workers are allowed to wear light equipment such as general workwear and disposable dust-protective masks.</p> 	<p>▼ In August 2021, operation started while eliminating the need for the DS2 mask during light work in G-zone outside the protection area around Unit 1-4 (except for inside Units 5 and 6).</p> 	<p>▼ In August 2021, operation started while eliminating the need for the DS2 mask during light work in G-zone outside the protection area around Unit 1-4 (except for inside Units 5 and 6).</p> 
<p>Travel survey results of major roads within the site</p> <p>Compared with the last fiscal year, the dose rate was reduced on roads on the east side of Units 1-4 (area of black dot in the figure). In the area, the dose rate reduction is considered attributable to the construction of sea walls and others.</p> <div style="display: flex; justify-content: space-around;"> <div> <p><FY2023 4th Quarter> (Measured in February 2024)</p>  <p>Provided by Japan Space Imaging Corp., ©DigitalGlobe</p> </div> <div> <p><FY2024 4th Quarter> (Measured in March 2025)</p>  <p>Provided by Japan Space Imaging Corp., ©DigitalGlobe</p> </div> </div>											<p>Visit by Prime Minister Ishiba to the Fukushima Daiichi NPS (2024.12.14)</p> <p>(Left) Observation of the decommissioning state at high ground from which whole view of Units 1-4 can be seen</p> <p>(Right) Encouragement from Prime Minister Ishiba</p> 		
													