Summary of Decommissioning and Contaminated Water Management

February 25, 2016

Secretariat of the Team for Countermeasures for Decommissioning and Contaminated Water Treatment

Main works and steps for decommissioning

Fuel removal from Unit 4 SFP had been completed and preparatory works to remove fuel from Unit 1-3 SFP and fuel debris (Note 1) removal are ongoing.

(Note 1) Fuel assemblies melted through in the accident.

Fuel Removal from SFP: Rubble removal & dose reduction (Units 1&2, Unit 3) → Installing a Fuel-Handling Machine → Fuel removal → Storage and handling (Unit 4)

Unit 1: Fuel removal to start in FY2020
Unit 2: Fuel removal to start in FY2020
Unit 3: Fuel removal to start in FY2017
Unit 4: Fuel removal completed in 2014

Fuel Debris Removal: Capturing the status inside PCV/ examination of fuel debris removal method, etc. (Note 2) (Unit 1-3) → Fuel debris removal → Storage and handling

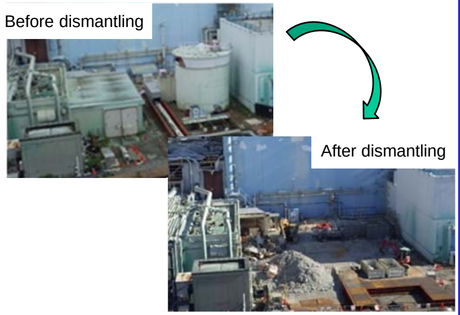
(Note 2) The fuel debris removal method for each unit will be decided two years after revising the Mid-and-Long-term road map (June 2015). The method for the first unit will be confirmed in the first half of FY2018.

Dismantling Facilities: Scenario development & technology consideration → Design and manufacturing of devices/ equipment → Dismantling

Toward fuel removal from pool

Toward fuel removal from Unit 2 SFP, preparation around the building is underway.

Dismantling of hindrance buildings around the Reactor Building has been underway since September 2015 to clear a work area to install large heavy-duty machines, etc.



(Preparation around Unit 2 Reactor Building)

Three principles behind contaminated water countermeasures

Countermeasures for contaminated water are implemented in accordance with the following three principles:

1. Eliminate contamination sources

① Multi-nuclide removal equipment, etc.
② Remove contaminated water in the trench (Note 3)

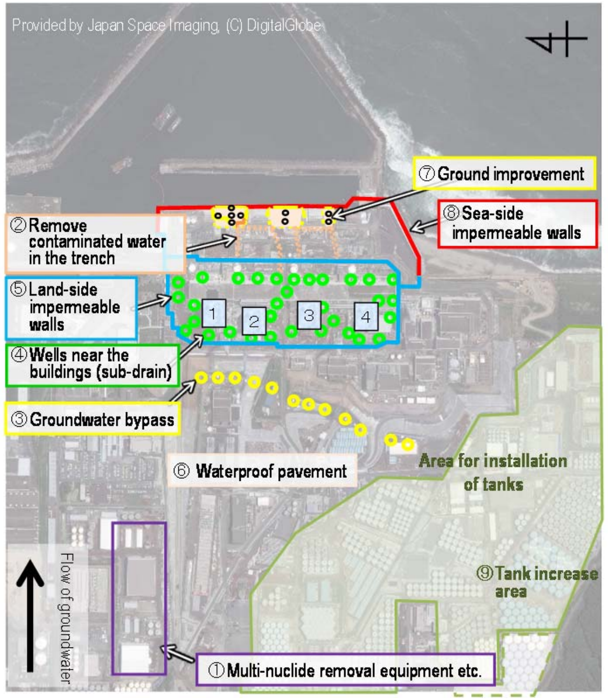
(Note 3) Underground tunnel containing pipes.

2. Isolate water from contamination

③ Pump up groundwater for bypassing
④ Pump up groundwater near buildings
⑤ Land-side impermeable walls
⑥ Waterproof pavement

3. Prevent leakage of contaminated water

⑦ Soil improvement by sodium silicate
⑧ Sea-side impermeable walls
⑨ Increase tanks (welded-joint tanks)



Multi-nuclide removal equipment (ALPS), etc.

- This equipment removes radionuclides from the contaminated water in tanks and reduces risks.
- Treatment of contaminated water (RO concentrated salt water) was completed in May 2015 via multi-nuclide removal equipment, additional multi-nuclide removal equipment installed by TEPCO (operation commenced in September 2014) and a subsidy project of the Japanese Government (operation commenced in October 2014).
- Strontium-treated water from equipment other than ALPS is being re-treated in ALPS.

(High-performance multi-nuclide removal equipment)

Land-side impermeable walls

- Land-side impermeable walls surround the buildings and reduce groundwater inflow into the same.
- Onsite tests have been conducted since August 2013. Construction work commenced in June 2014.
- Freezing functioning test commenced at the end of April 2015.
- Construction on the mountain side was completed in September 2015.
- Construction on the sea side will be completed in February 2016.

(Installation of pipes on the sea side for land-side impermeable walls)

Sea-side impermeable walls

- Impermeable walls are being installed on the sea side of Units 1-4, to prevent the flow of contaminated groundwater into the sea.
- The installation of steel pipe sheet piles was completed in September 2015 and they were connected in October 2015. These works completed the closure of sea-side impermeable walls.

(Installation status)

Progress Status and Future Challenges of the Mid- and Long-Term Roadmap toward Decommissioning of TEPCO's Fukushima Daiichi Nuclear Power Station Units 1-4 (Outline)

Progress status

◆ The temperatures of the Reactor Pressure Vessel (RPV) and the Primary Containment Vessel (PCV) of Units 1-3 have been maintained within the range of approx. 15-30°C*1 for the past month. There was no significant change in the density of radioactive materials newly released from Reactor Buildings in the air*2. It was evaluated that the comprehensive cold shutdown condition had been maintained.

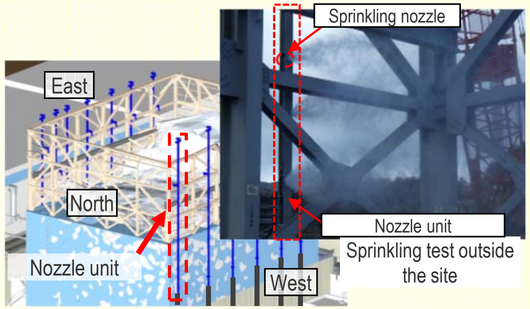
* 1 The values vary somewhat depending on the unit and location of the thermometer.
* 2 In January 2016, the radiation exposure dose due to the release of radioactive materials from the Unit 1-4 Reactor Buildings was evaluated as less than 0.0014 mSv/year at the site boundary. The annual radiation dose by natural radiation is approx. 2.1 mSv/year (average in Japan).

Installation of sprinkler system started inside Unit 1 Reactor Building cover

To facilitate rubble removal on the roof of Unit 1 Reactor Building, a sprinkler system will be installed as a measure to prevent the scattering of rubble.

As the removal of steel frames, which would hinder the installation of the sprinkler system was finished by February 3, the installation started on February 4.

The work is being conducted with anti-scattering measures steadily implemented and safety prioritized above all.



<Image of sprinkler system installation>

Separation of Unit 1 Turbine Building from the circulation water injection line*

Toward the completion of accumulated water treatment in buildings, the water levels inside Unit 1 building, which are relatively lower than those of other buildings, have declined further since the subdrains went into operation.

Following the reduction, Unit 1 Turbine Building will be separated from the circulation water injection line in March and there will be no water flow between other buildings.

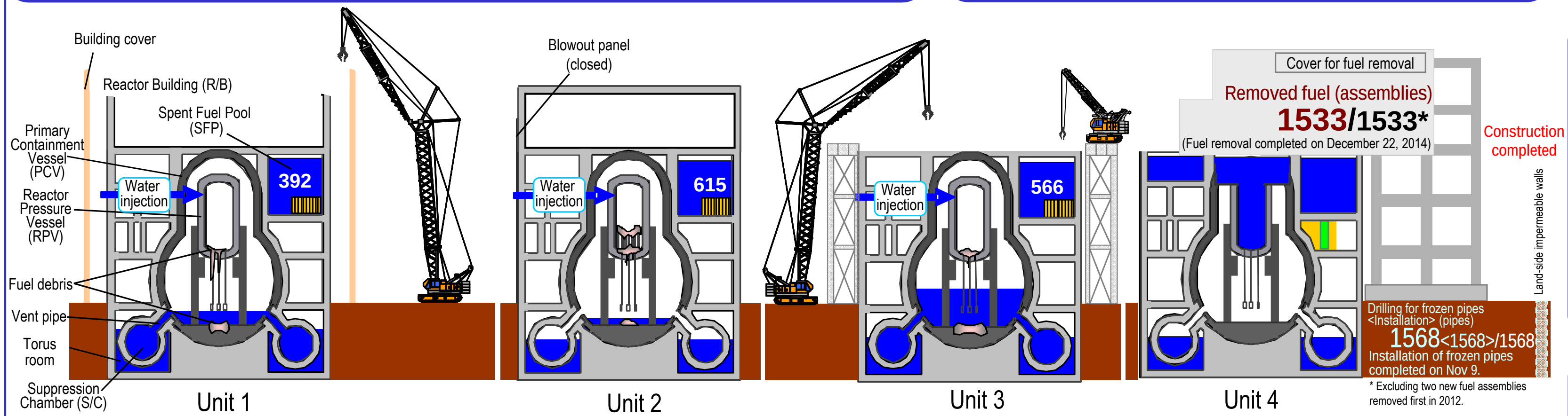
Accumulated water in Unit 1 Turbine Building will be reduced in future.

*: Milestone of the Mid- and Long-Term Roadmap (major target process)

Policy for freezing of land-side impermeable walls

For the land-side impermeable walls to control the increase of contaminated water, preparation for freezing was completed as the construction was concluded on February 9.

To ensure steady freezing with no leakage of contaminated water from buildings, freezing will progress on whole sea sides, together with on mountain sides in a phased manner.



Opening of a convenience store at the large rest house

On March 1, a Lawson convenience store will open on the second floor of the large rest house (next to the dining room).

Efforts will continue to improve the convenience of workers.

Dosage at the site boundary (evaluated value) reduced to less than 1mSv/year

To alleviate the influence around the site, a target of reducing the dosage at the site boundary(note) to less than 1 mSv/year* within FY2015 was set. Efforts have been made to meet this target, including reducing the dosage by purifying contaminated water and controlling dosage from waste by optimizing the shields.

Through these measures, the target of less than 1 mSv/year will be met.

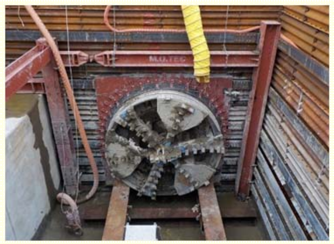
*: Milestone of the Mid- and Long-Term Roadmap (major target process)

Note: Dosage at the site boundary
Additional dosage at the site boundary attributable to rubble, contaminated water, etc. generated after the accident (evaluated value)

Switch of K drainage channel outlet to the inside of the port

For the outlet of K drainage channel, which leads from around Unit 1-4 buildings to the outside the port, construction to switch it to the inside of the port will be completed in March as scheduled.

Waste water from K drainage channel has been pumped up and transferred through C drainage channel to the inside of the port since April 2015.



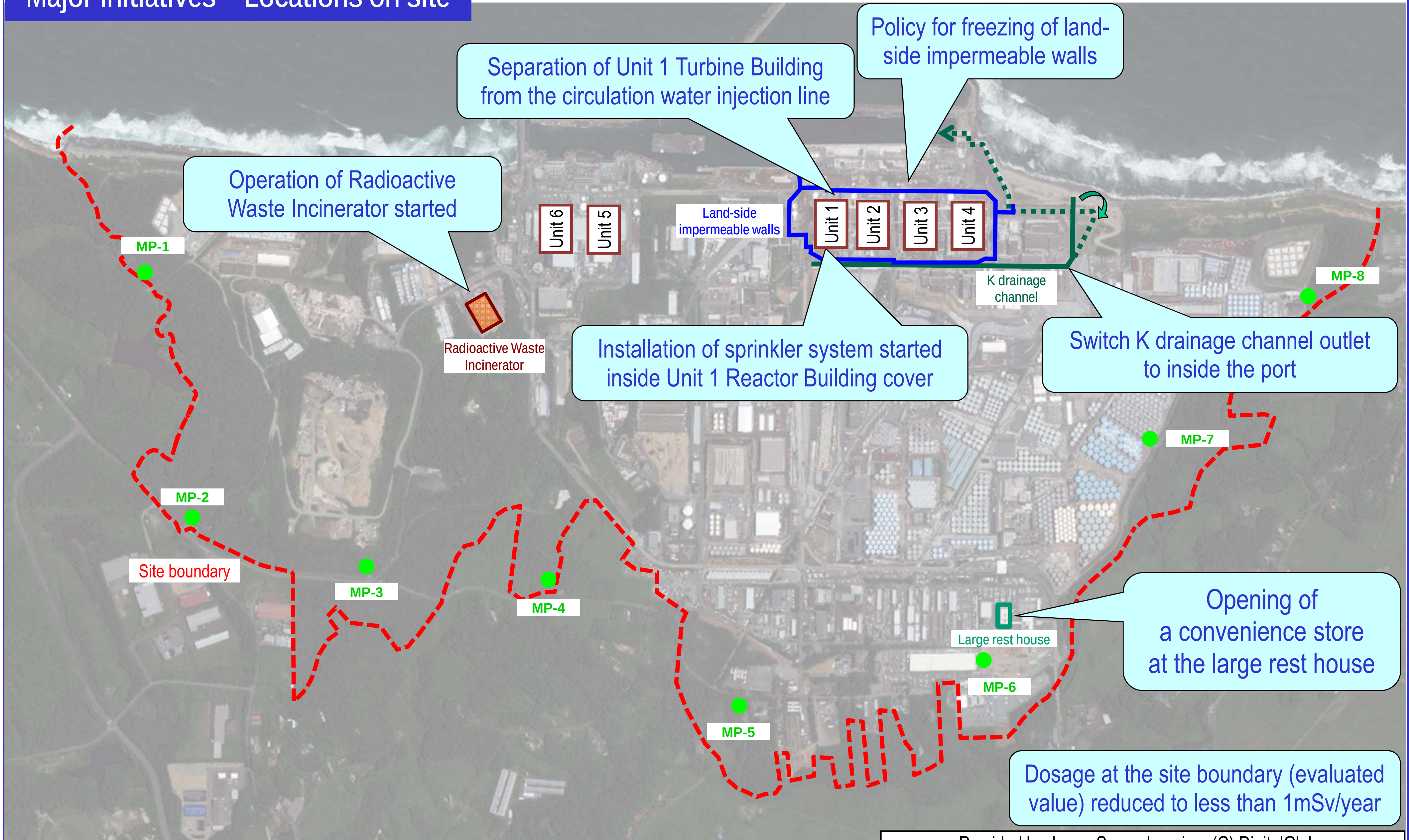
< Construction of tunnel part to switch K drainage channel >

Operation of Radioactive Waste Incinerator started

For the Radioactive Waste Incinerator, which will incinerate used protective clothing and other radioactive waste temporarily stored on site, test operation is underway toward an operation start within March.

After resolving the issues identified during the test operation, actual contaminated waste was started incinerating on February 25 as a part of test operation.

Major initiatives – Locations on site



Provided by Japan Space Imaging, (C) DigitalGlobe

* Data of Monitoring Posts (MP1-MP8.)

Data (10-minute value) of Monitoring Posts (MPs) measuring airborne radiation rate around site boundaries show 0.584 – 2.684 μSv/h (January 27 – February 23, 2016).

Monitoring posts 1 to 8 are being replaced from December 4, 2015 because they reached the time for replacement. During this work, some data may not be obtained and mobile monitoring posts or other equivalent facilities will be installed as alternatives.

We improved the measurement conditions of monitoring posts 2 to 8 for precise measurement of air dose rate. Construction works such as tree-clearing, surface soil removal and shield wall setting were implemented from Feb .10 to Apr. 18, 2012.

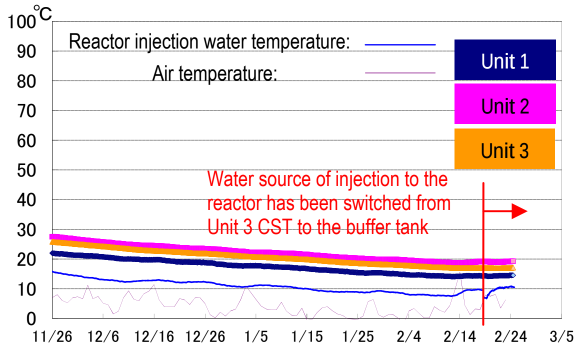
Therefore monitoring results at these points are lower than elsewhere in the power plant site.

The radiation shielding panel around monitoring post No. 6, which is one of the instruments used to measure the radiation dose of the power station site boundary, were taken off from July 10-11, 2013, since the surrounding radiation dose has largely fallen down due to further cutting down of the forests, etc.

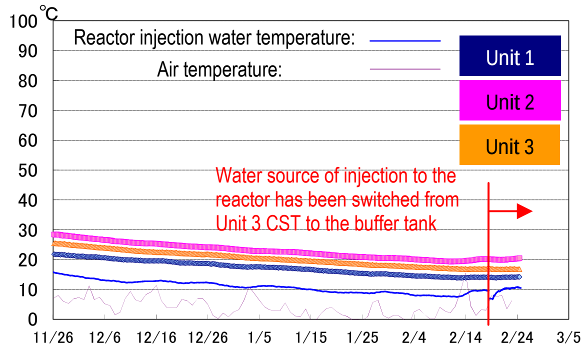
I. Confirmation of the reactor conditions

1. 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 have been maintained within the range of approx. 15 to 30°C for the past month, though they vary depending on the unit and location of the thermometer.



RPV bottom temperatures (recent quarter)



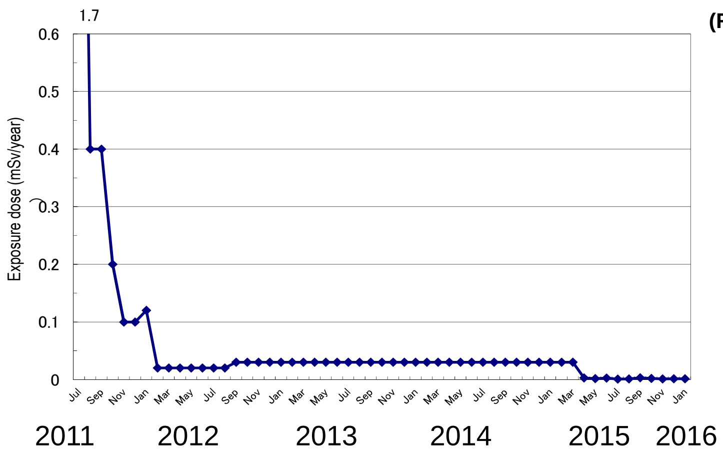
PCV gas phase temperatures (recent quarter)

* The trend graphs show part of the temperature data measured at multiple points.

2. Release of radioactive materials from the Reactor Buildings

As of January 2016, the density of radioactive materials newly released from Reactor Building Units 1-4 in the air and measured at the site boundary was evaluated at approx. 3.1×10^{-11} Bq/cm³ for Cs-134 and 1.2×10^{-10} Bq/cm³ for Cs-137 respectively. The radiation exposure dose due to the release of radioactive materials was less than 0.0014 mSv/year at the site boundary.

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



(Reference)

- * The density limit of radioactive materials in the air outside the surrounding monitoring area:
  [Cs-134]: 2 x 10^{-5} Bq/cm³
  [Cs-137]: 3 x 10^{-5} Bq/cm³
- * Dust density around the site boundaries of Fukushima Daiichi Nuclear Power Station (actual measured values):
  [Cs-134]: ND (Detection limit: approx. 1 x 10^{-7} Bq/cm³)
  [Cs-137]: ND (Detection limit: approx. 2 x 10^{-7} Bq/cm³)
- * Data of Monitoring Posts (MP1-MP8).
  Data of Monitoring Posts (MPs) measuring the airborne radiation rate around the site boundary showed 0.584 – 2.684 μSv/h (January 27 – February 23, 2016).
  To measure the variation in the airborne radiation rate of MP2-MP8 more accurately, environmental improvement (tree trimming, removal of surface soil and shielding around the MPs) was completed.

Note: 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.

3. 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 abnormality in the cold shutdown condition or criticality sign detected.

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

II. Progress status by each plan

1. Contaminated water countermeasures

To tackle the increase in accumulated water due to groundwater inflow, fundamental measures to prevent such inflow into the Reactor Buildings will be implemented, while improving the decontamination capability of water treatment and preparing facilities to control the contaminated water

➢ Operation of groundwater bypass

- From April 9, 2014, the operation of 12 groundwater bypass pumping wells commenced sequentially to pump up groundwater. The release started from May 21, 2014 in the presence of officials from the Intergovernmental Liaison Office for the Decommissioning and Contaminated Water Issue of the Cabinet Office. As of February 23, 2016, 170,509 m³ of groundwater had been released. The pumped-up groundwater was temporarily stored in tanks and released after TEPCO and a third-party organization had confirmed that its quality met operational targets.
- For pumping well Nos. 6, 10 and 11, pumping of groundwater was suspended for cleaning (No. 6: from January 29, 2016; No. 10: December 10, 2015 – January 25, 2016; No. 11: January 6-29, 2016).

➢ Status of water treatment facilities, including subdrains

- To reduce the groundwater flowing into the buildings, work began to pump up groundwater from wells (subdrains) around the buildings on September 3, 2015. The pumped-up groundwater was then purified at dedicated facilities and released from September 14, 2015. As of February 23, 2016, a total of 66,342 m³ had been drained after TEPCO and a third-party organization had confirmed that the quality of this purified groundwater met operational targets.
- Due to the level of the groundwater drain pond rising since the closure of the sea-side impermeable walls, pumping started on November 5, 2015. As of February 23, 2016, a total of 31,000 m³ had been pumped up. Approx. 160 m³/day is being transferred from the groundwater drain to the Turbine Buildings (average for the period of January 21 - February 17, 2016).
- The effect of ground water inflow control by subdrains is evaluated by correlating both the "subdrain water levels" and the "difference between water levels in subdrains and buildings" for the time being.
- However, given insufficient data on the effect of rainfall after the subdrains went into operation, the effect of the inflow into buildings will be reviewed as necessary by accumulating data.
- Inflow into buildings declined to approx. 150 m³/day during times when the subdrain water level decreased to approx. TP 3.5-4.5 m or when the difference with the water levels in buildings decreased to approx. 2-2.5 m after the subdrains went into operation.

As of February 11, 2016

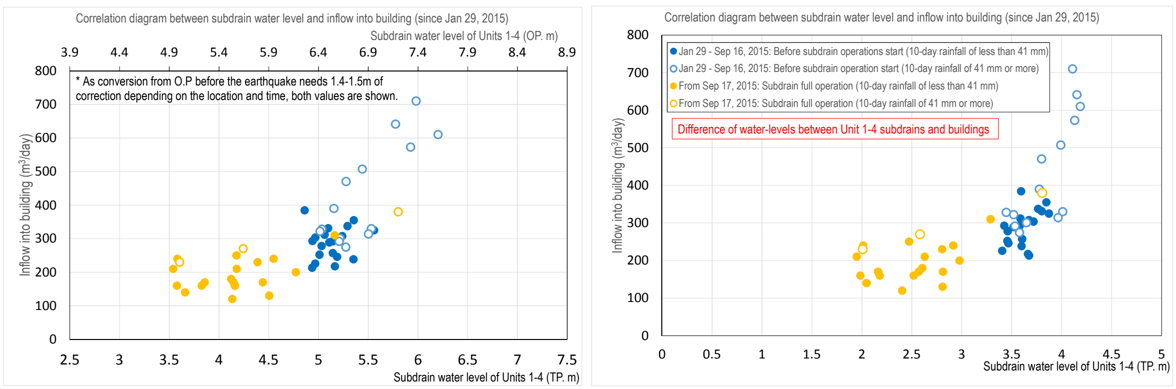


Figure 1: Evaluation of inflow into buildings after the subdrains went into operation

➢ Construction status of the land-side impermeable walls

- To facilitate the installation of land-side impermeable walls surrounding Units 1-4 (a subsidy project of the Ministry of Economy, Trade and Industry), drilling to place frozen pipes commenced from June 2, 2014. Regarding the mountain side, following the installation of frozen pipes on July 28, 2015, filling of brine was also completed on September 15, 2015. Regarding the sea side, following the installation of frozen pipes on November 9, 2015, filling of brine was also completed on February 9, 2016. Through these works, preparation for freezing was completed for all the land-side impermeable walls.
- To ensure steady freezing with no leakage of contaminated water from buildings, freezing will progress on whole sea sides, together with on mountain sides in a phased manner.

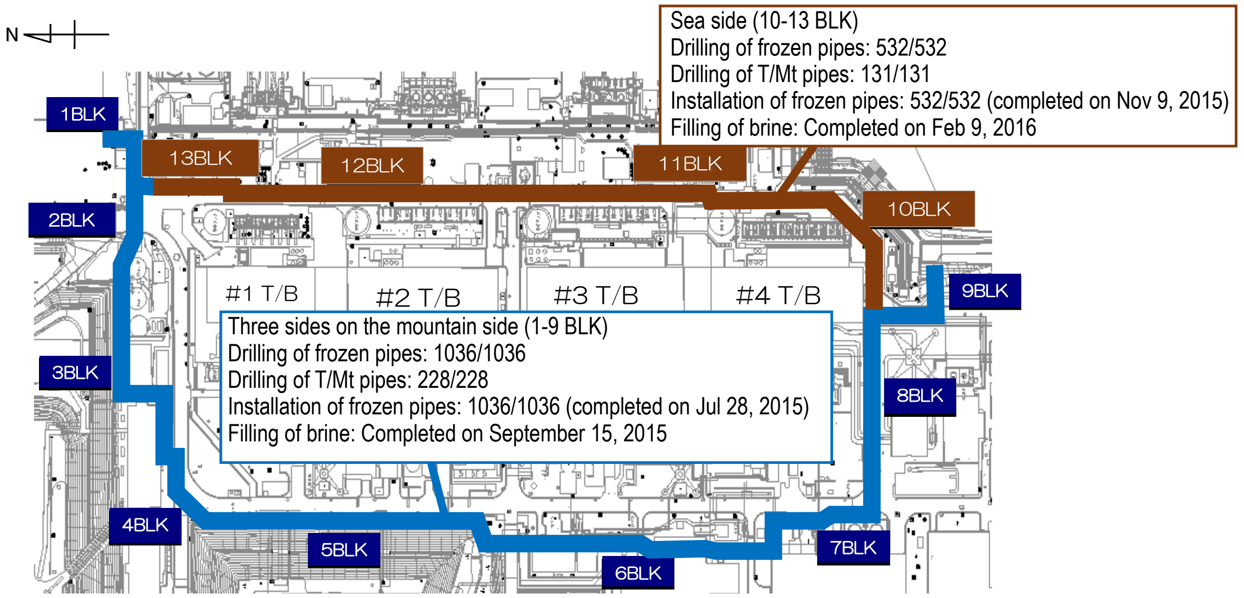
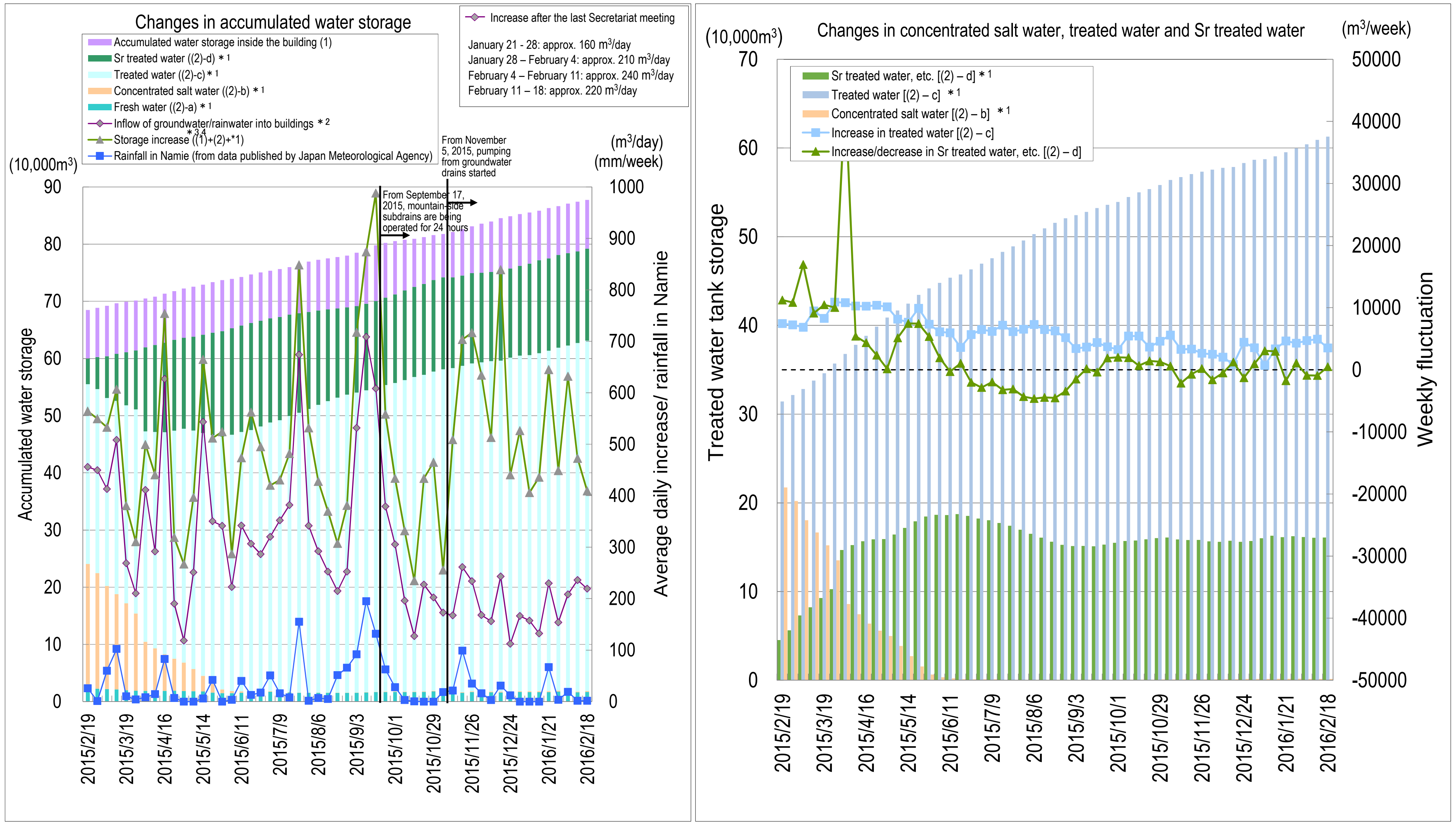


Figure 2: Drilling status for frozen-soil impermeable walls and installation of frozen pipes

➢ Operation of multi-nuclide removal equipment

- Regarding multi-nuclide removal equipment (existing, additional and high-performance), hot tests using radioactive water are underway (for existing equipment, System A: from March 30, 2013, System B: from June 13, 2013, System C: from September 27, 2013; for additional equipment, System A: from September 17, 2014, System B: from September 27, 2014, System C: from October 9, 2014; for high-performance equipment, from October 18, 2014).
- As of February 18, 2016, the volumes treated by existing, additional and high-performance multi-nuclide removal equipment were approx. 271,000, 245,000 and 103,000 m³ respectively (including approx. 9,500 m³ stored in the J1(D) tank, which contained water with a high density of radioactive materials at the System B outlet of existing multi-nuclide removal equipment).
- For System B of the existing multi-nuclide removal equipment, facility inspections and the installation of additional absorption vessels to improve its performance have been underway since December 4, 2015.
- For the additional multi-nuclide removal equipment, facility inspections have been underway (Systems A and B: since December 1, 2015, System C: since February 8, 2016).
- To reduce the risks of strontium-treated water, treatment by additional and high-performance multi-nuclide removal equipment is underway (existing: from December 4, 2015, additional: from May 27, 2015, high-performance: from April 15, 2015). As of February 18, 2016, approx. 175,000 m³ had been treated.



As of February 18, 2016

*1: Water amount with which water-level gauge indicates 0% or more

*2: Since September 10, 2015, the data collection method has been changed (Evaluation based on increased in storage: in buildings and tanks → Evaluation based on increase/decrease in storage in buildings)
"Inflow of groundwater/rainwater into buildings" =
"Increase/decrease of water held in buildings"
+ "Transfer from buildings to tanks"
- "Transfer into buildings (water injection into reactors and transfer from well points, etc.)"

3: Since April 23, 2015, the data collection method has been changed (Increase in storage (1)+(2) → (1)+(2)+)

*4: On February 4, 2016, corrected by reviewing the water amount of remaining concentrated salt water

Figure 3: Status of accumulated water storage

➢ Toward reducing the risk of contaminated water stored in tanks

- Treatment measures comprising the removal of strontium by cesium absorption apparatus (KURION) (from January 6, 2015) and secondary cesium absorption apparatus (SARRY) (from December 26, 2014) are underway. As of February 18, 2016, approx. 191,000 m³ had been treated.

➢ Measures in Tank Areas

- Rainwater, under the release standard and having accumulated inside the fences in the contaminated water tank area, was sprinkled on site after eliminating radioactive materials using rainwater-treatment equipment since May 21, 2014 (as of February 22, 2016, a total of 46,630 m³).

➢ Separation of Unit 1 Turbine Building from the circulation water injection line*

- Toward the completion of accumulated water treatment in buildings, the water levels inside Unit 1 building, which are relatively lower than those of other buildings, have declined further since the subdrains went into operation.
- In March, the water level of Unit 1 Reactor Building will be reduced under the connection with Unit 1 Turbine Building, the building will be separated from the circulation water injection line, and there will be no water flow between other buildings.
- Accumulated water in Unit 1 Turbine Building will be reduced in future.

*: Milestone of the Mid- and Long-Term Roadmap (major target process)

2. Fuel removal from the spent fuel pools

Work to help remove spent fuel from the pool is progressing steadily while ensuring seismic capacity and safety. The removal of spent fuel from the Unit 4 pool commenced on November 18, 2013 and was completed on December 22, 2014

➢ Main work to help remove spent fuel at Unit 1

- On July 28, 2015, work started to remove the roof panels of the building cover. By October 5, 2015, all six roof panels had been removed. Following the removal of steel frames, which would hinder the installation of a sprinkler system (January 8 - February 3, 2016), the installation has been underway (from February 4). The building cover is being dismantled with anti-scattering measures steadily implemented and safety prioritized above all.
- During the annual inspection of the 750t crawler crane used to dismantle the Unit 1 Reactor Building cover, which has been underway since December 2015, distortion and corrosion were detected in the jib, which will be replaced.

➢ Main work to help remove spent fuel at Unit 2

- To help remove the spent fuel from the pool of the Unit 2 Reactor Building, dismantling of hindrance buildings around the Reactor Building has been underway since September 7, 2015 to clear a work area in which to install large heavy-duty machines, etc.

➢ Main work to help remove spent fuel at Unit 3

- Decontamination on the operating floor and removal of rubble of the Unit 3 Reactor Building have been underway.

3. Fuel debris removal

In addition to decontamination and shield installation to improve PCV accessibility, technology was developed and data gathered as required to prepare to remove fuel debris (such as investigating and repairing PCV leak locations)

➢ Progress of decontamination around Unit 2 X-6 penetration

- To facilitate the investigation into the status of the platform inside the Unit 2 PCV pedestal (A2 investigation), decontamination is underway around X-6 penetration from which the investigation device will be inserted. During the surface grind on January 7, 2016, the work was suspended due to an increase in dust density detected near the workplace. Following additional chemical decontamination, the dose on the floor surface measured on January 19 was confirmed to be equivalent to that before the surface grind. As well as improving the surface grind method and investigating techniques such as chipping, measures to control dust scattering have been examined. Investigations inside the PCV will be conducted according to the decontamination status.

➢ Decontamination of the Unit 3 Reactor Building 1st floor

- To facilitate decontamination of the elevated portion of the Unit 3 Reactor Building 1st floor, the decontamination capability of high-place decontamination equipment (dry-ice blast decontamination equipment) is being assessed from December 23, 2015 (until February 19, 2016).

➢ 3-D laser scanning in the Unit 3 Reactor Building torus room

- To utilize the collected data to evaluate obstacles as needed for the planned investigation into the existence of leakage from Unit 3 PCV and repair in future, 3D data scanning was conducted inside the torus room (December 22, 2015 – January 22, 2016).

4. 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 January 2016, the total storage volume of concrete and metal rubble was approx. 177,700 m³ (+4,800 m³ compared to at the end of December 2015, with an area-occupation rate of 65%). The total storage volume of trimmed trees was approx. 86,200 m³ (+1,100 m³ compared to at the end of December 2015, with an area-occupation rate of 81%). The increase in rubble was mainly attributable to construction related to facing and the installation of tanks. The increase in trimmed trees was mainly attributable to facing-related construction.

➢ Management status of secondary waste from water treatment

- As of February 18, 2016, the total storage volume of waste sludge was 597 m³ (area-occupation rate: 85%) and that of concentrated waste fluid was 9,168 m³ (area-occupation rate: 83%). The total number of stored spent vessels, High-Integrity Containers (HICs) for multi-nuclide removal equipment, etc. was 3,027 (area-occupation rate: 50%).

➢ Test operation of the Radioactive Waste Incinerator

- Toward an operational start within March, test operation is underway. After resolving the issues identified during the test operation (replacing gaskets of the access panel from which leakage was detected, etc.), actual contaminated waste was started incinerating on February 25 as a part of test operation.

5. Reactor cooling

The cold shutdown condition will be maintained by cooling the reactor by water injection and measures to complement the status monitoring will continue

➢ Progress of construction to minimize the circulation loop

- Aiming to reduce the risk of leakage from the outdoor transfer pipe by shortening the loop, a reverse osmosis (RO) device will be installed in Unit 4 Turbine Building within the circulation loop, comprising the transfer of contaminated water, water treatment and injection into Reactor Buildings. This will shorten the circulation loop (outdoor transfer pipe) from approx. 3 to 0.8 km (approx. 2.1 km including the accumulated transfer line).
- For the RO circulation facility installed in the building by this measure, construction that required no modification of the existing facilities was completed. As the implementation plan was authorized on January 28, 2016, installation of pipes and valves requiring modification of the existing facilities is underway. To facilitate this construction, the water source for injection into the reactor is being switched from Unit 3 condensate storage tank to the elevated buffer tank (February 18 – late March).

6. 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 groundwater and seawater on the east side of Turbine Building Units 1 to 4

- Regarding the radioactive materials in the groundwater near the bank on the north side of the Unit 1 intake, the tritium density at groundwater Observation Hole No. 0-1 has been increasing since December 2015 and currently stands at around 5,000 Bq/L.
- Regarding the groundwater near the bank between the Unit 1 and 2 intakes, though the tritium density at groundwater Observation Hole No. 1-9 has been increasing to approx. 800 Bq/L since December 2015, it currently stands at around 200 Bq/L. The density of gross β radioactive materials at groundwater Observation Hole No. 1-14 has been increasing since November 2015 and currently stands at around 60,000 Bq/L. Since August 15, 2013, pumping of groundwater continued (at the well point between the Unit 1 and 2 intakes: August 15, 2013 – October 13, 2015 and from October 24; at the repaired well point: October 14 - 23, 2015).
- Regarding radioactive materials in the groundwater near the bank between the Unit 2 and 3 intakes, though the density of gross β radioactive materials at groundwater Observation Hole No. 2-5 has remained constant at around 10,000 Bq/L, it has been increasing since November 2015 and currently stands at around 400,000 Bq/L. Since December 18, 2013, pumping of groundwater continued (at the well point between the Unit 2 and 3 intakes: December 18, 2013 - October 13, 2015; at the repaired well point: from October 14, 2015).
- Regarding radioactive materials in the groundwater near the bank between the Unit 3 and 4 intakes, the density of gross β radioactive materials at groundwater Observation Hole No. 3-2 has been increasing since December 2015 and currently stands at around 1,200 Bq/L, it currently stands up around 600 Bq/L. Since April 1, 2015, pumping of groundwater continued (at the well point between the Unit 3 and 4 intakes: April 1 – September 16, 2015; at the repaired well point: from September 17, 2015).
- Regarding the radioactive materials in seawater outside the sea-side impermeable walls and within the open channels of Units 1 - 4, as well as those inside the port, the density was declining due to the effect of the completed installation and the connection of steel pipe sheet piles for the sea-side impermeable walls.
- Regarding the radioactive materials in seawater outside the port, the densities of cesium 137 and tritium have remained within the same range previously recorded.
- In response to the landfill inside the sea-side impermeable walls, the seawater sampling points "between Unit 3-4 intakes" and "Unit 4 screen" were abolished on January 31.

➢ Switch of K drainage channel outlet to the inside of the port

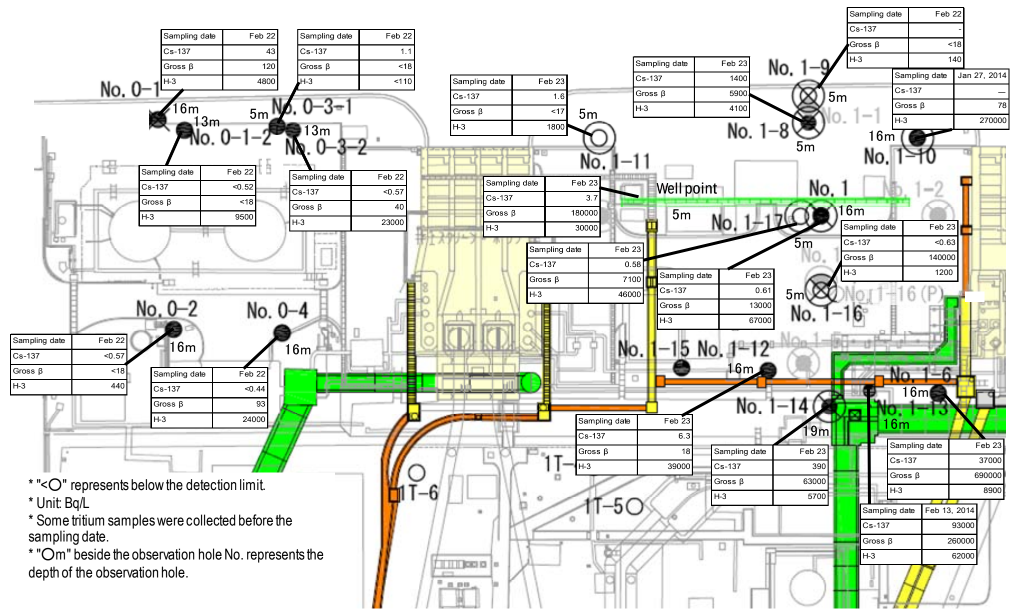
- For the outlet of K drainage channel, which leads from around Unit 1-4 buildings to the outside of the port, construction started in May 2015 to switch it to the inside of the port and will be completed in March 2016 as scheduled. Regarding the construction of the tunnel part, the driving machine reached the target vertical shaft on February 12, 2016. Waste water from K drainage channel has been pumped up and transferred through C drainage channel to the inside of the port since April 2015.

➢ Dosage (evaluated value) at the site boundary reduced to less than 1mSv/year

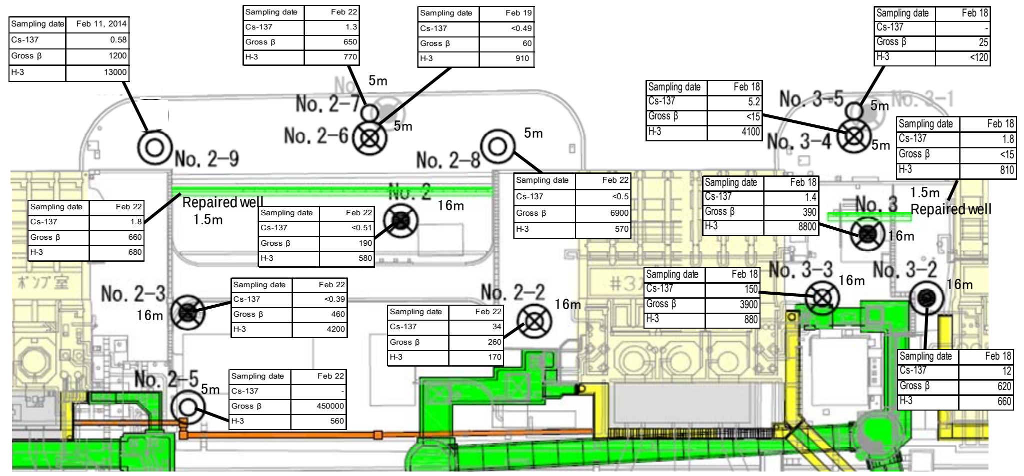
- To alleviate the influence around the site, the target of reducing the dosage at the site boundary(note) to less than 1 mSv/year* within FY2015 was set. Efforts have been made to meet this target, including reducing the dosage by continuously purifying contaminated water at multi-nuclide removal equipment and other facilities and controlling dosage increase in new facilities by optimizing the shields.
- Through these measures, the dosage at the site boundary at the end of March 2016 will be evaluated as approx. 0.96 mSv/year, which will meet the target limit of less than 1 mSv/year.

*: Milestone of the Mid- and Long-Term Roadmap (major target process)

Note: Additional dosage at the site boundary attributable to rubble, contaminated water, etc. generated after the accident (evaluated value)



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



<Between Unit 2 and 3 intakes, between Unit 3 and 4 intakes>

Figure 4: Groundwater density on the Turbine Building east side

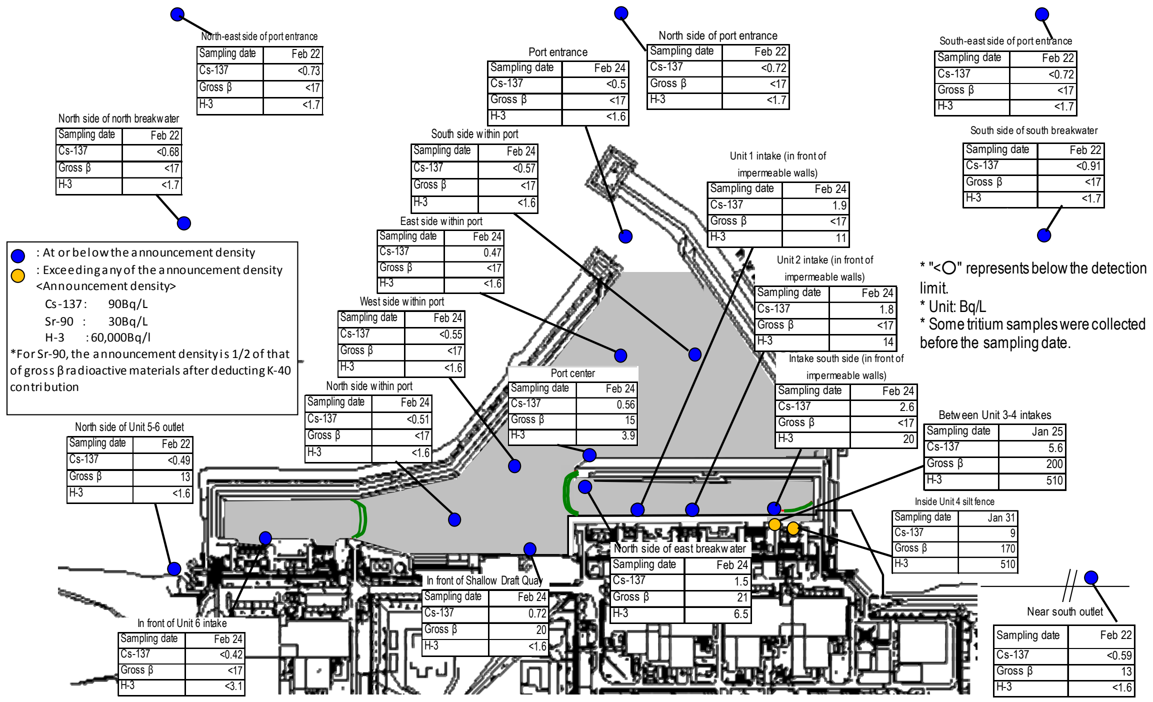


Figure 5: Seawater density around the port

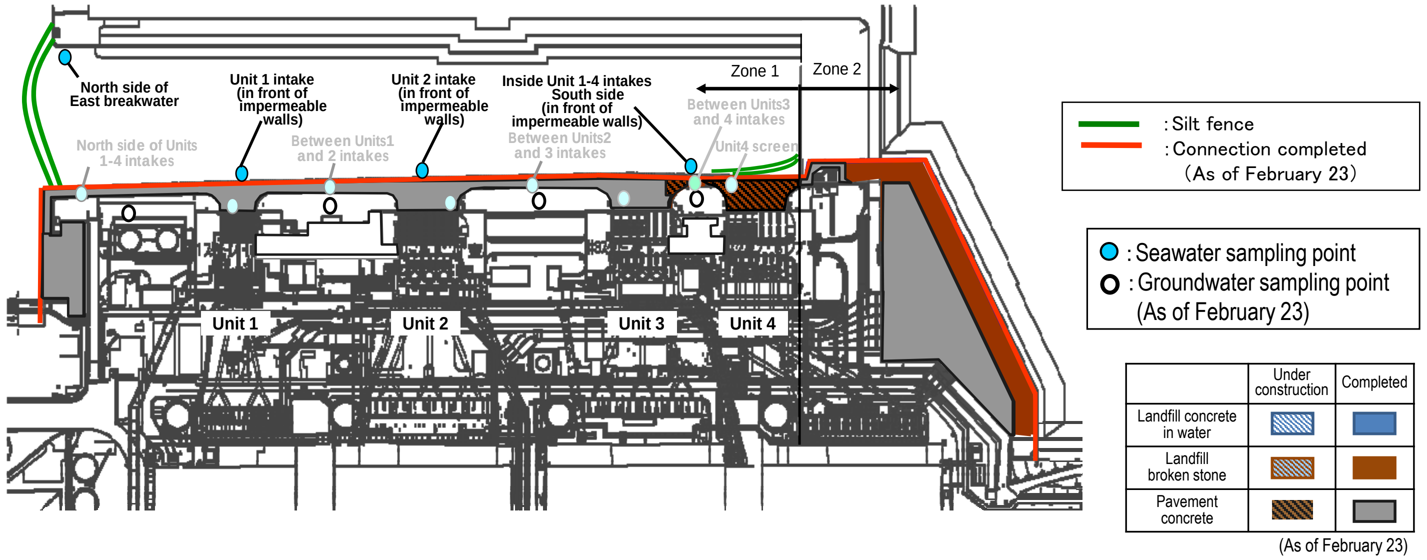


Figure 6: Progress status of impermeable walls on the sea side

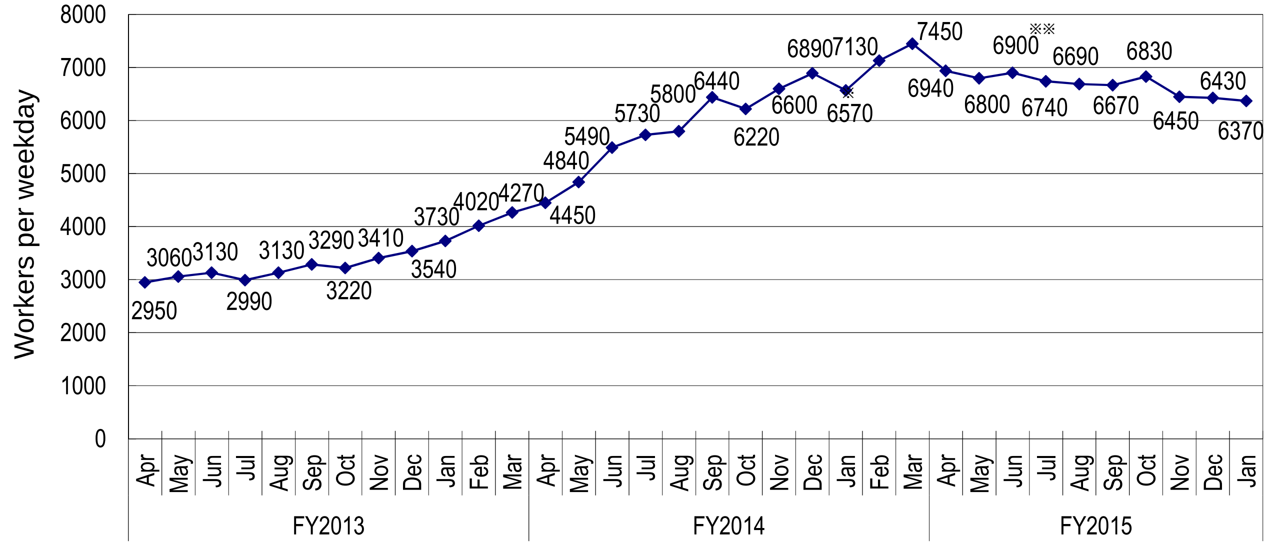
7. Review of the number of staff required and efforts to improve the labor environment and conditions

Securing appropriate staff long-term while thoroughly implementing workers' exposure dose control. Improving the work environment and labor conditions continuously based on an understanding of workers' on-site needs

➢ Staff management

- The monthly average total of people registered for at least one day per month to work on site during the past quarter from October to December 2015 was approx. 13,800 (TEPCO and partner company workers), which exceeded the monthly average number of actual workers (approx. 10,600). Accordingly, sufficient people are registered to work on site.
- It was confirmed with the prime contractors that the estimated manpower necessary for the work in March 2016 (approx. 6,670 per day: TEPCO and partner company workers)* would be secured at present. The average numbers of workers per day for each month (actual values) were maintained, with approx. 3,000 to 7,500 since FY2013 (see Figure 7).

  Some works for which contractual procedures have yet to be completed are excluded from the estimate for March 2016.
- The number of workers from Fukushima Prefecture has remained the same but the number from outside the prefecture has increased slightly. Accordingly, the local employment ratio (TEPCO and partner company workers) as of January 2016 remained at around 50%.
- The average exposure dose of workers remained at approx. 1 mSv/month during FY2013, FY2014 and FY2015. (Reference: Annual average exposure dose 20 mSv/year ≒ 1.7 mSv/month)
- For most workers, the exposure dose was sufficiently within the limit and allowed them to continue engaging in radiation work.



※ Calculated based on the number of workers as of January 20 (due to safety inspection from January 21)

※※ Calculated based on the number of workers from August 3-7, 24-28 and 31 (due to overhaul of heavy machines)

Figure 7: Changes in the average number of workers per weekday for each month since FY2013

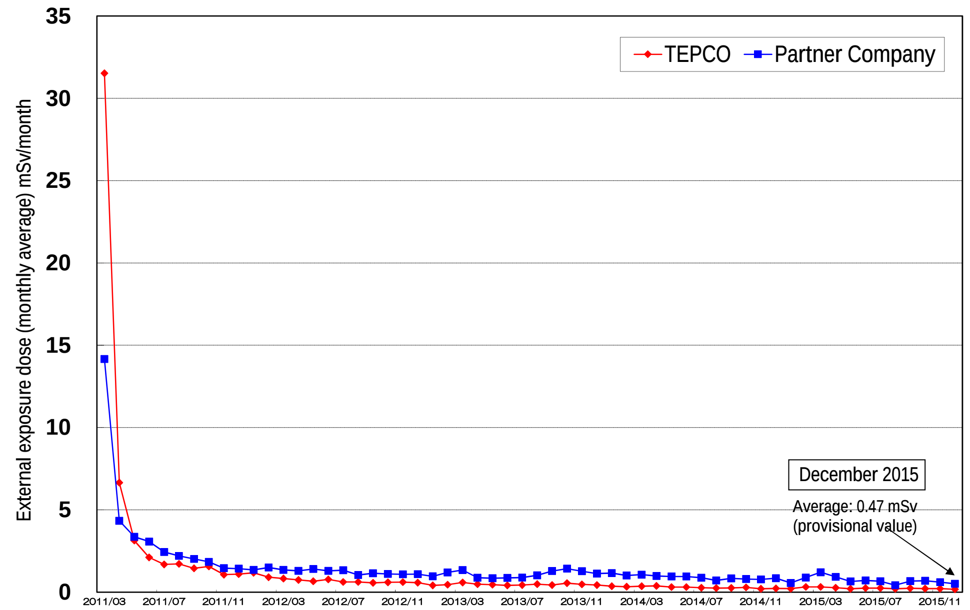


Figure 8: Changes in monthly individual worker exposure dose (monthly average exposure dose since March 2011)

➢ Measures to prevent infection and expansion of influenza and norovirus

- Since October, measures for influenza and norovirus have been implemented, including free influenza vaccinations (subsidized by TEPCO) in the Fukushima Daiichi Nuclear Power Station (October 28 - December 4, 2015) and medical clinics around the site (November 2, 2015 - January 29, 2016) for partner company workers. A total of 8,586 workers were vaccinated. In addition, a comprehensive range of other measures is also being implemented, including daily actions to prevent infection and expansion (measuring body temperature, health checks and monitoring infection status) and response after detecting possible infections (control of swift entry/exit and mandatory wearing of masks in working spaces).

➢ Status of influenza and norovirus cases

- Until the 8th week of 2016 (February 15-21, 2016), there were 146 influenza infections and ten norovirus infections. The totals for the same period for the previous season showed 340 influenza infections and nine norovirus infections. The totals for the entire previous season (November 2014 - March 2015) showed 353 influenza infections and ten norovirus infections.

- Optimization of controlled areas classification and radiation protective equipment

・ Controlled areas of the Fukushima Daiichi Nuclear Power Station will be divided into areas with high contamination around Units 1-4 and other areas. Equipment exchange facilities will be installed and operated from early March, where workers wear protective equipment that meets the requirements of each contamination area (e.g. for works in low-contamination areas, the equipment requirement will be changed from non-woven overalls to general workwear or dedicated wear for on-site works).

- Opening of a convenience store at the large rest house

・ On March 1, a Lawson convenience store will open on the 2nd floor of the large rest house (next to the dining room). Efforts will continue to improve the convenience of workers.

8. Other

- Transfer of purification filter onto the spent fuel inside the Unit 5 spent fuel pool

・ On February 22, it was identified that the purification filter (to transfer the remaining water in the equipment storage pit) installed at the bottom of the spent fuel pool had been transferred onto the spent fuel. Following the removal of the purification filter on February 23, a visual inspection confirmed no abnormality.

- Implementers of the decommissioning and contaminated water treatment project (METI FY2014 supplementary budget) were decided

・ Additional public offerings were made regarding the “Project of Development of Fundamental Technologies for Retrieval of Fuel Debris and Internal Structures” (offering period: December 7-28, 2015).

・ Following screening by the review board, comprising external experts, project implementers were decided on January 29.

- FY2015 results and FY2016 plan of research and development

・ Progress and results in FY2015 and proposed plan for FY2016 at this time were collected for each of the research and development projects, based on which the FY2016 projects will commence sequentially.

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 January 19-26)"; unit (Bq/L); ND represents a value below the detection limit

Source: TEPCO website Analysis results on nuclides of radioactive materials around Fukushima Daiichi Nuclear Power Station http://www.tepco.co.jp/nu/fukushima-np/f1/smp/index-j.html

Sea side impermeable wall
Silt fence

Cesium-134: 3.3 (2013/10/17) → ND(0.46) Below 1/7
Cesium-137: 9.0 (2013/10/17) → ND(0.45) Below 1/20
Gross β: 74 (2013/ 8/19) → ND(17) Below 1/4
Tritium: 67 (2013/ 8/19) → ND(1.6) Below 1/40

Cesium-134: 4.4 (2013/12/24) → ND(0.57) Below 1/7
Cesium-137: 10 (2013/12/24) → ND(0.55) Below 1/10
Gross β: 60 (2013/ 7/ 4) → ND(17) Below 1/3
Tritium: 59 (2013/ 8/19) → ND(1.6) Below 1/30

Cesium-134: 5.0 (2013/12/2) → ND(0.53) Below 1/9
Cesium-137: 8.4 (2013/12/2) → ND(0.42) Below 1/20
Gross β: 69 (2013/8/19) → ND(17) Below 1/4
Tritium: 52 (2013/8/19) → ND(1.6) Below 1/30

Cesium-134: 2.8 (2013/12/2) → ND(0.48) Below 1/5
Cesium-137: 5.8 (2013/12/2) → ND(0.49) Below 1/10
Gross β: 46 (2013/8/19) → ND(16) Below 1/2
Tritium: 24 (2013/8/19) → ND(3.1) Below 1/7

Cesium-134: ND(0.59)
Cesium-137: 2.9
Gross β: ND(17)
Tritium: 3.9 *

Cesium-134: 3.3 (2013/12/24) → ND(0.51) Below 1/6
Cesium-137: 7.3 (2013/10/11) → ND(0.49) Below 1/10
Gross β: 69 (2013/ 8/19) → ND(17) Below 1/4
Tritium: 68 (2013/ 8/19) → ND(1.6) Below 1/40

Cesium-134: 3.5 (2013/10/17) → ND(0.50) Below 1/7
Cesium-137: 7.8 (2013/10/17) → ND(0.52) Below 1/10
Gross β: 79 (2013/ 8/19) → ND(17) Below 1/4
Tritium: 60 (2013/ 8/19) → ND(1.6) Below 1/30

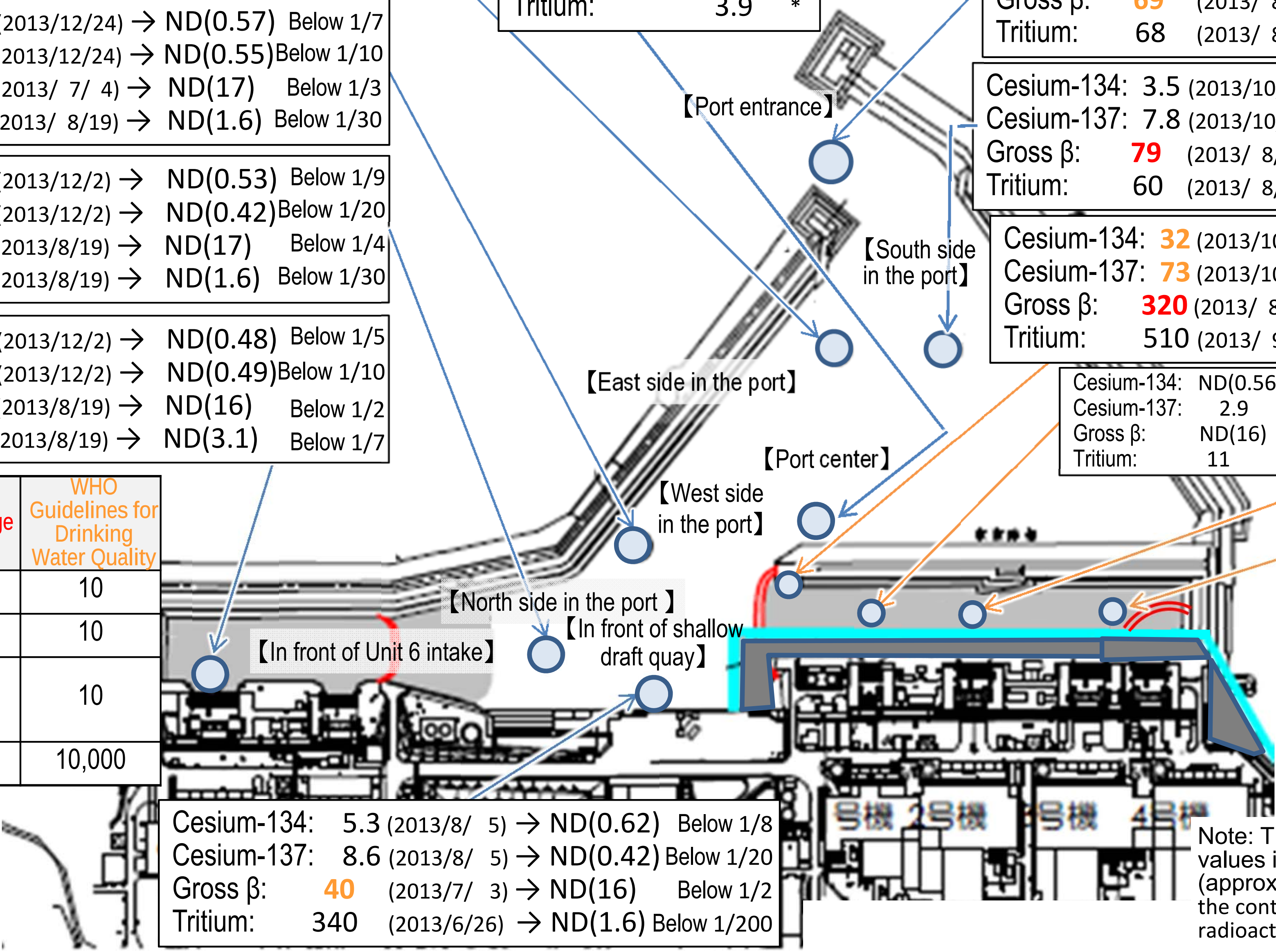
Cesium-134: 32 (2013/10/11) → 0.52 Below 1/60
Cesium-137: 73 (2013/10/11) → 3.5 Below 1/20
Gross β: 320 (2013/ 8/12) → ND(16) Below 1/4
Tritium: 510 (2013/ 9/ 2) → 6.5 Below 1/70

Cesium-134: ND(0.56)
Cesium-137: 2.9
Gross β: ND(16)
Tritium: 11 *

Cesium-134: ND(0.56)
Cesium-137: 3.1
Gross β: 20
Tritium: 14 *

Cesium-134: 0.62
Cesium-137: 4.1
Gross β: ND(16)
Tritium: 20 *

	Legal discharge limit	WHO Guidelines for Drinking Water Quality
Cesium-134	60	10
Cesium-137	90	10
Strontium-90 (strongly correlate with Gross β)	30	10
Tritium	60,000	10,000



Cesium-134: 5.3 (2013/8/ 5) → ND(0.62) Below 1/8
Cesium-137: 8.6 (2013/8/ 5) → ND(0.42) Below 1/20
Gross β: 40 (2013/7/ 3) → ND(16) Below 1/2
Tritium: 340 (2013/6/26) → ND(1.6) Below 1/200

* Monitoring commenced in or after March 2014.
Monitoring inside the sea-side impermeable walls was finished because of the landfill.

Note: The gross β measurement values include natural potassium 40 (approx. 12 Bq/L). They also include the contribution of yttrium 90, which radioactively balance strontium 90.

Summary of TEPCO data as of February 24

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

(The latest values sampled during February 15-23)

	Legal discharge limit	WHO Guidelines for Drinking Water Quality
Cesium-134	60	10
Cesium-137	90	10
Strontium-90 (strongly correlate with Gross β)	30	10
Tritium	60,000	10,000

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

【Northeast side of port entrance(offshore 1km)】

Cesium-134: ND (2013) → ND (0.67)
Cesium-137: ND (2013) → ND (0.73)
Gross β: ND (2013) → ND (17)
Tritium: ND (2013) → ND (1.7)

【East side of port entrance (offshore 1km)】

Cesium-134: ND (2013) → ND (0.70)
Cesium-137: 1.6 (2013/10/18) → ND (0.72) Below 1/3
Gross β: ND (2013) → ND (17)
Tritium: 6.4 (2013/10/18) → ND (1.7) Below 1/3

【Southeast side of port entrance(offshore 1km)】

Cesium-134: ND (2013) → ND (0.71)
Cesium-137: ND (2013) → ND (0.72)
Gross β: ND (2013) → ND (17)
Tritium: ND (2013) → ND (1.7)

【North side of north breakwater(offshore 0.5km)】

Cesium-134: ND (2013) → ND (0.71)
Cesium-137: ND (2013) → ND (0.68)
Gross β: ND (2013) → ND (17)
Tritium: 4.7 (2013/ 8/18) → ND (1.7) Below 1/2

【Port entrance】

Cesium-134: 3.3 (2013/12/24) → ND (0.51) Below 1/6
Cesium-137: 7.3 (2013/10/11) → ND (0.49) Below 1/10
Gross β: 69 (2013/ 8/19) → ND (17) Below 1/4
Tritium: 68 (2013/ 8/19) → ND (1.6) Below 1/40

【South side of south breakwater(offshore 0.5km)】

Cesium-134: ND (2013) → ND (0.66)
Cesium-137: ND (2013) → ND (0.91)
Gross β: ND (2013) → ND (17)
Tritium: ND (2013) → ND (1.7)

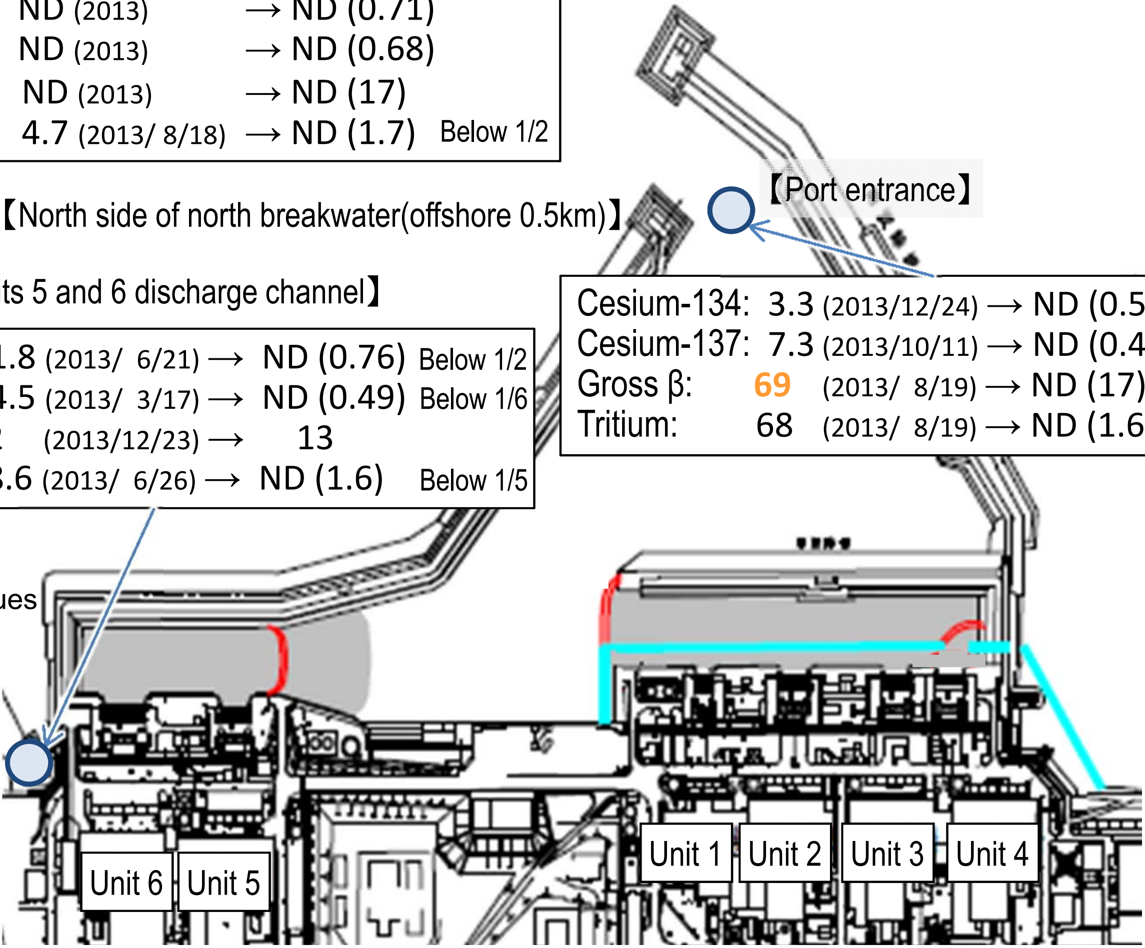
【North side of Units 5 and 6 discharge channel】

Cesium-134: 1.8 (2013/ 6/21) → ND (0.76) Below 1/2
Cesium-137: 4.5 (2013/ 3/17) → ND (0.49) Below 1/6
Gross β: 12 (2013/12/23) → 13
Tritium: 8.6 (2013/ 6/26) → ND (1.6) Below 1/5

【Around south discharge channel】

Cesium-134: ND (2013) → ND (0.58)
Cesium-137: 3.0 (2013/ 7/15) → ND (0.59) Below 1/5
Gross β: 15 (2013/12/23) → 13
Tritium: 1.9 (2013/11/25) → ND (1.6)

Note: The gross β measurement values include natural potassium 40 (approx. 12 Bq/L). They also include the contribution of yttrium 90, which radioactively balance strontium 90.



Sea side impermeable wall

Silt fence

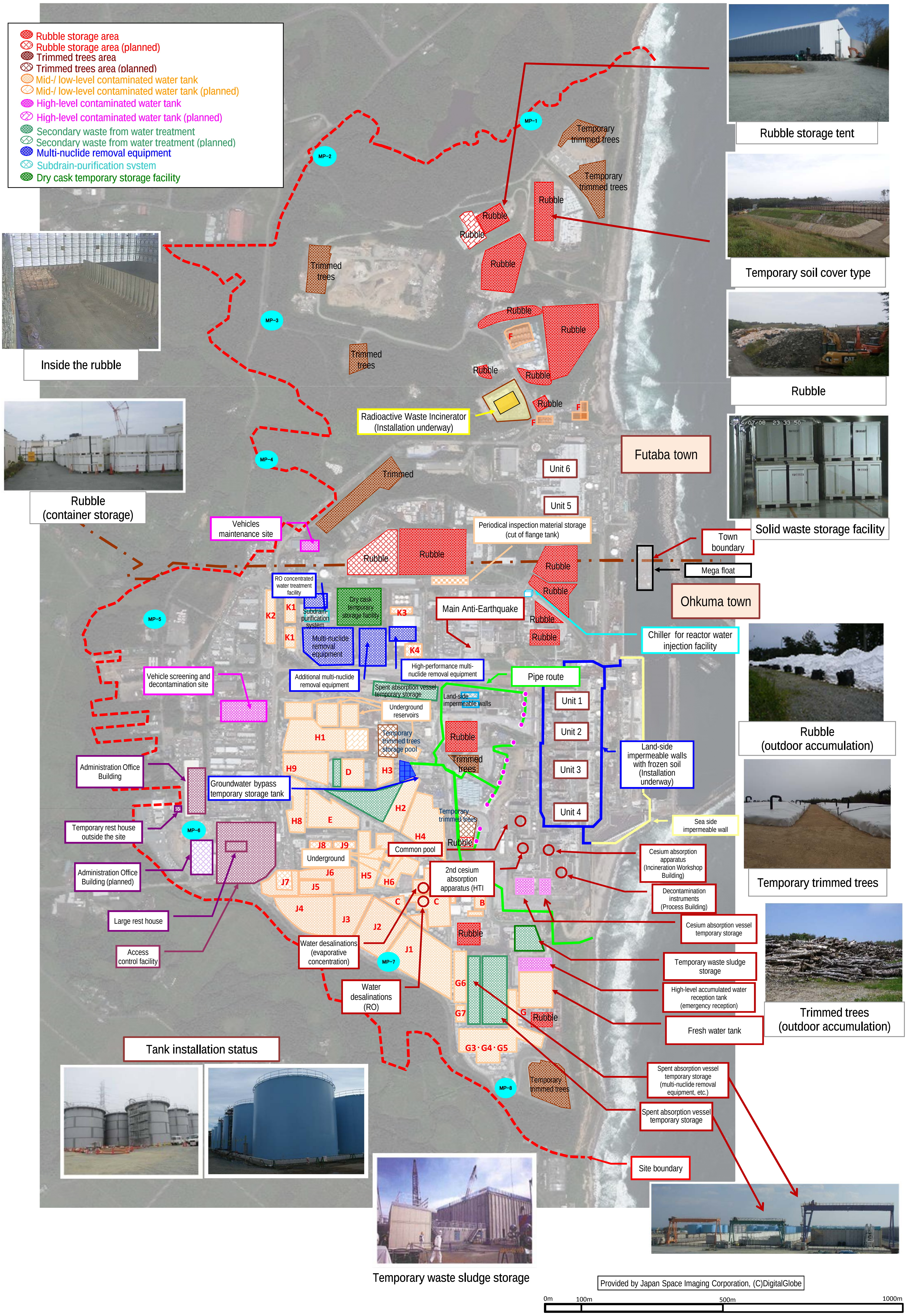
Summary of TEPCO data as of February 24

Source: TEPCO website, Analysis results on nuclides of radioactive materials around Fukushima Daiichi Nuclear Power Station, http://www.tepco.co.jp/nu/fukushima-np/f1/smp/index-j.html

Appendix 2

February 25, 2016

TEPCO Fukushima Daiichi Nuclear Power Station Site Layout



Progress toward decommissioning: Fuel removal from the spent fuel pool (SFP)

Immediate target	Commence fuel removal from the Unit 1-3 Spent Fuel Pools

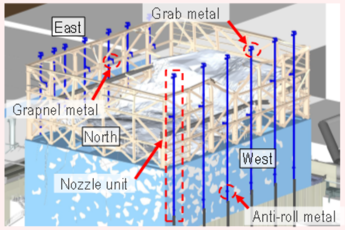
Unit 1

Regarding fuel removal from Unit 1 spent fuel pool, there is a plan to install a dedicated cover for fuel removal over the operating floor(*1).

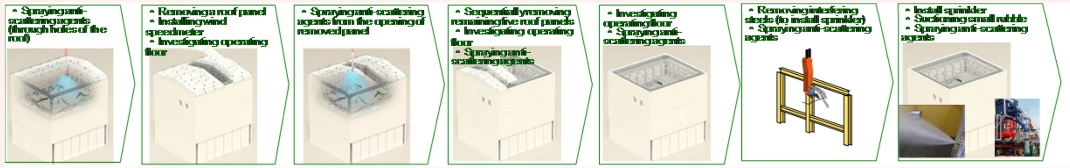
Before starting this plan, the building cover will be dismantled to remove rubble from the top of the operating floor, with anti-scattering measures steadily implemented.

All panels were removed by October 5, 2015. Installation of sprinklers as measures to prevent dust scattering has been underway since February 4, 2016.

Dismantling of the building cover will proceed with radioactive materials thoroughly monitored.



<Image of sprinkler system>



Flow of building cover dismantling

Unit 2

To facilitate removal of fuel assemblies and debris in the Unit 2 spent fuel pool, the scope of dismantling and modification of the existing Reactor Building rooftop was examined. From the perspective of ensuring safety during the work, controlling impacts on the outside of the power station, and removing fuel rapidly to reduce risks, we decided to dismantle the whole rooftop above the highest floor of the Reactor Building.

Examination of the following two plans continues: Plan 1 to share a container for removing fuel assemblies and debris from the pool; and Plan 2 to install a dedicated cover for fuel removal from the pool.

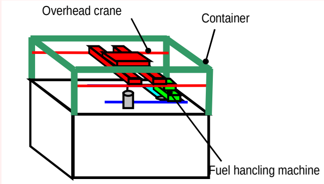


Image of Plan 1

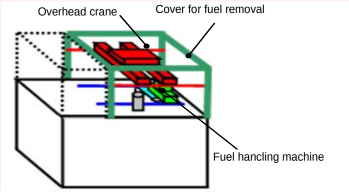


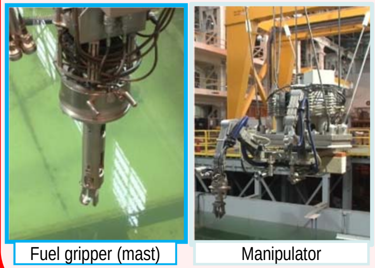
Image of Plan 2

Unit 3

To facilitate the installation of a cover for fuel removal, removal of large rubble from the spent fuel pool was completed in November 2015. Measures to reduce dose (decontamination and shielding) are underway. (from October 15, 2013)

To ensure safe and steady fuel removal, training of remote control was conducted at the factory using the actual fuel-handling machine which will be installed on site (February – December 2015).

After implementing the dose-reduction measures, the cover for fuel removal and the fuel-handling machine will be installed.



Fuel-handling facility (in the factory)

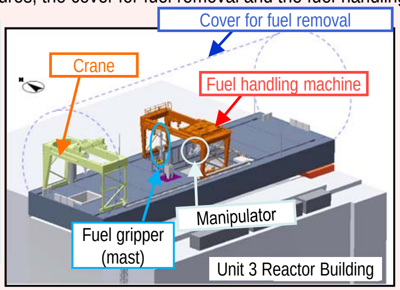


Image of entire fuel handling facility inside the cover

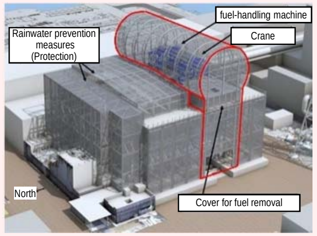


Image of the cover for fuel removal

Unit 4

In the Mid- and Long-Term Roadmap, the target of Phase 1 involved commencing fuel removal from inside the spent fuel pool (SFP) of the 1st Unit within two years of completion of Step 2 (by December 2013). On November 18, 2013, fuel removal from Unit 4, or the 1st Unit, commenced and Phase 2 of the roadmap started.

On November 5, 2014, within a year of commencing work to remove the fuel, 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. (2 of the non-irradiated fuel assemblies were removed in advance in July 2012 for fuel checks)

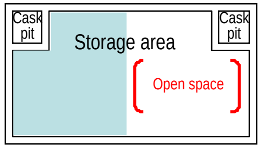
This marks the completion of fuel removal from the Unit 4 Reactor Building.

Based on this experience, fuel assemblies will be removed from Unit 1-3 pools.

Fuel removal status

* A part of the photo is corrected because it includes sensitive information related to physical protection.

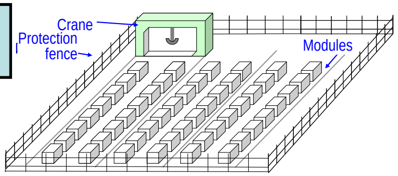
Common pool



An open space will be maintained in the common pool (Transfer to the temporary dry cask storage facility)

Progress to date
- The common pool has been restored to a condition allowing it to re-accommodate fuel to be handled (November 2012)
- Loading of spent fuel stored in the common pool to dry casks commenced (June 2013)
- Fuel removed from the Unit 4 spent fuel pool began to be received (November 2013)

Temporary dry cask (*3) storage facility



Spent fuel is accepted from the common pool

Operation commenced on April 12, 2013; from the cask-storage building, transfer of 9 existing dry casks completed (May 21, 2013); fuel stored in the common pool sequentially transferred.

<Glossary>
(*1) Operating floor: During regular inspection, the roof over the reactor is opened while on the operating floor, fuel inside the core is replaced and the core internals are inspected.
(*2) Cask: Transportation container for samples and equipment, including radioactive materials.

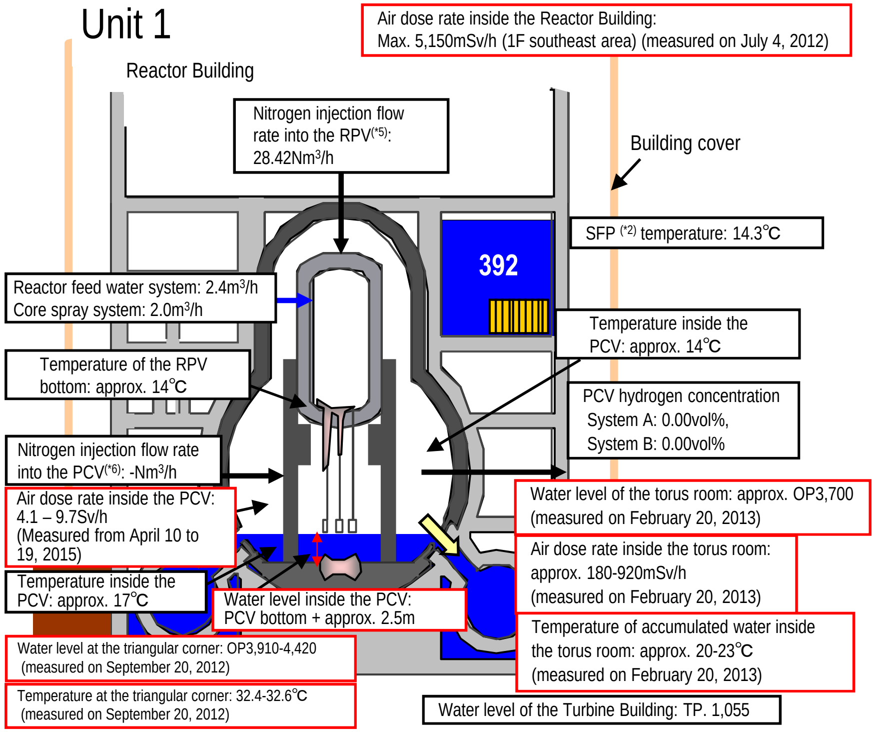
Progress toward decommissioning: Works to identify the plant status and toward fuel debris removal

February 25, 2016
Secretariat of the Team for Countermeasures for
Decommissioning and Contaminated Water Treatment

Immediate target	Identify the plant status and commence R&D and decontamination toward fuel debris removal

Investigation into TIP Room of the Unit 1 Reactor Building

- To improve the environment for future investigations inside the PCV, etc., an investigation was conducted from September 24 to October 2, 2015 at the TIP Room(*1). (Due to high dose around the entrance in to the TIP Room, the investigation of dose rate and contamination distribution was conducted through a hole drilled from the walkway of the Turbine Building, where the dose was low)
- The investigative results identified high dose at X-31 to 33 penetrations(*2) (instrumentation penetration) and low dose at other parts.
- As it was confirmed that work inside the TIP room would be available, the next step will include identification of obstacles which will interfere the work inside the TIP Room and formulation of a plan for dose reduction.



* Indices related to the plant are values as of 11:00, February 24, 2016

Investigations inside PCV	1st (Oct 2012)	- Acquiring images - Measuring air temperature and dose rate - Measuring water level and temperature - Sampling accumulated water - Installing permanent monitoring instrumentation
	2nd (Apr 2015)	Confirming the status of PCV 1st floor - Acquiring images - Measuring air temperature and dose rate - Replacing permanent monitoring instrumentation
Leakage points from PCV	- PCV vent pipe vacuum break line bellows (identified in May 2014) - Sand cushion drain line (identified in November 2013)	

Investigation in the leak point detected in the upper part of the Unit 1 Suppression Chamber (S/C(*3))

Investigation in the leak point detected in the upper part of Unit 1 S/C from May 27, 2014 from one expansion joint cover among the lines installed there. As no leakage was identified from other parts, specific methods will be examined to halt the flow of water and repair the PCV.

Leak point

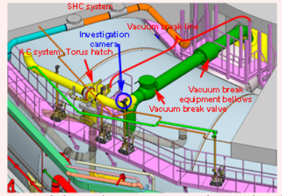


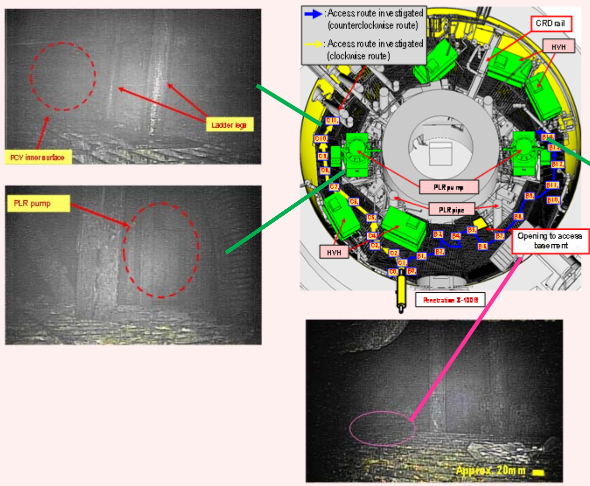
Image of the S/C upper part investigation

Status of equipment development toward investigating inside the PCV

Prior to removing fuel debris, to check the conditions inside the Primary Containment Vessel (PCV), including the location of the fuel debris, investigation inside the PCV is scheduled.

[Investigative outline]
- Inserting equipment from Unit 1 X-100B penetration(*5) to investigate in clockwise and counter-clockwise directions.

[Status of investigation equipment development]
- Using the crawler-type equipment with a shape-changing structure which allows it to enter the PCV from the narrow access entrance (bore: ϕ 100mm) and stably move on the grating, a field demonstration was implemented from April 10 to 20, 2015. Through this investigation, information including images and airborne radiation inside the PCV 1st floor was obtained.
- Based on the investigative results in April 2015 and additional information obtained later, an investigation on the PCV basement floor will be conducted in a method of traveling on the 1st floor grating and dropping cameras, dosimeters, etc. from above the investigative target to increase feasibility.



Investigation inside PCV

Investigative equipment

<Glossary>
(*1) TIP (Traversing In-core Probe)
(*2) Penetration: Through-hole of the PCV
(*3) S/C (Suppression Chamber): Suppression pool, used as the water source for the emergent core cooling system.
(*4) SFP (Spent Fuel Pool):
(*5) RPV (Reactor Pressure Vessel)
(*6) PCV (Primary Containment Vessel)

Progress toward decommissioning: Works to identify the plant status and toward fuel debris removal

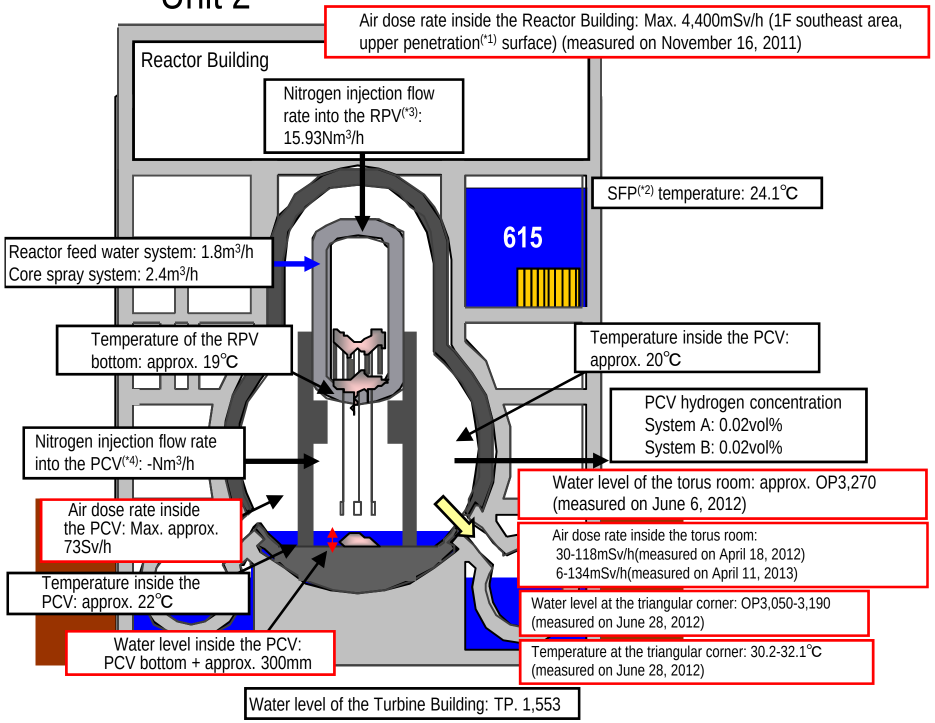
Immediate target	Identify the plant status and commence R&D and decontamination toward fuel debris removal

Installation of an RPV thermometer and permanent PCV supervisory instrumentation

(1) Replacement of the RPV thermometer
- As the thermometer installed at the Unit 2 RPV bottom after the earthquake had broken in February 2014, it was excluded from the monitoring thermometers.
- On April 2014, removal of the broken thermometer failed and was suspended. Rust-stripping chemicals were injected and the broken thermometer was removed on January 2015. A new thermometer was reinstalled on March. The thermometer has been used as a part of permanent supervisory instrumentation since April.

(2) Reinstallation of the PCV thermometer and water-level gauge
- Some of the permanent supervisory instrumentation for PCV could not be installed in the planned locations due to interference with existing grating (August 2013). The instrumentation was removed on May 2014 and new instruments were reinstalled on June 2014. The trend of added instrumentation will be monitored for approx. one month to evaluate its validity.
- The measurement during the installation confirmed that the water level inside the PCV was approx. 300mm from the bottom.

Unit 2

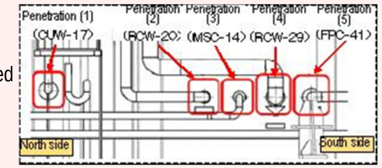


* Indices related to plant are values as of 11:00, February 24, 2016

Investigations inside PCV	1st (Jan 2012)	- Acquiring images - Measuring air temperature
	2nd (Mar 2012)	- Confirming water surface - Measuring water temperature - Measuring dose rate
	3rd (Feb 2013 – Jun 2014)	- Acquiring images - Sampling accumulated water - Measuring water level - Installing permanent monitoring instrumentation
Leakage points from PC	- No leakage from torus room rooftop - No leakage from all inside/outside surfaces of S/C	

Investigative results on torus room walls

- The torus room walls were investigated (on the north side of the east-side walls) using equipment specially developed for that purpose (a swimming robot and a floor traveling robot).
- At the east-side wall pipe penetrations (five points), "the status" and "existence of flow" were checked.
- A demonstration using the above two types of underwater wall investigative equipment showed how the equipment could check the status of penetration.
- Regarding Penetrations 1 - 5, the results of checking the sprayed tracer (*5) by camera showed no flow around the penetrations. (investigation by the swimming robot)
- Regarding Penetration 3, a sonar check showed no flow around the penetrations. (investigation by the floor traveling robot)



Penetrations investigated

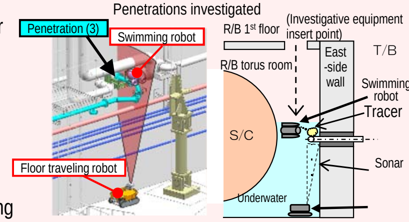


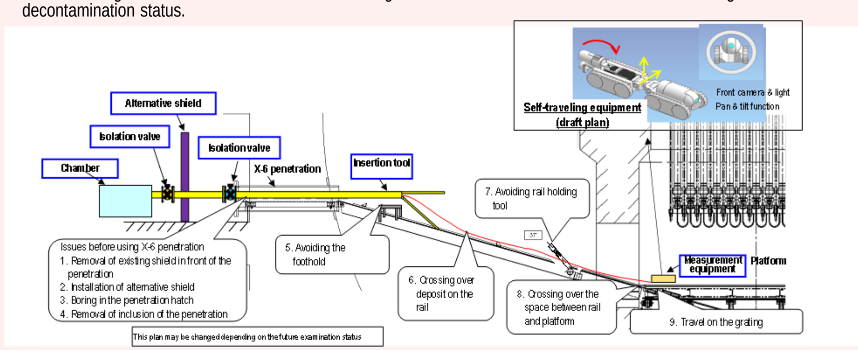
Image of the torus room east-side cross-sectional investigation

Status of equipment development toward investigating inside the PCV

Prior to removing fuel debris, to check the conditions inside the Primary Containment Vessel (PCV), including the location of the fuel debris, investigations inside the PCV are scheduled.

[Investigative outline]
- Inserting the equipment from Unit 2 X-6 penetration(*1) and accessing inside the pedestal using the CRD rail to conduct investigation.

[Status of investigative equipment development]
- Based on issues confirmed by the CRD rail status investigation conducted in August 2013, the investigation method and equipment design are currently being examined.
- As a portion of shielding blocks installed in front of X-6 penetration could not be moved, a removal method using small heavy machines was planned. The work for removing these blocks resumed on September 28, 2015 and removal of interfering blocks for future investigations was also completed on October 1, 2015.
- To start the investigation into the inside of PCV, dose on the floor surface in front of X-6 penetration needs to be reduced to approx. 100 mSv/h. As the dose was not decreased to the target level through decontamination (removal of eluted materials, decontamination by steam, chemical decontamination, surface grind), dose reduction methods including anti-dust scattering measures will be re-examined. Investigations inside the PCV will be conducted according to the decontamination status.



Investigative issues inside the PCV and equipment configuration (draft plan)

<Glossary>
(*1) Penetration: Through-hole of the PCV (*2) SFP (Spent Fuel Pool)
(*3) RPV (Reactor Pressure Vessel) (*4) PCV (Primary Containment Vessel)
(*5) Tracer: Material used to trace the fluid flow. Clay particles

Progress toward decommissioning: Works to identify the plant status and toward fuel debris removal

February 25, 2016
Secretariat of the Team for Countermeasures for Decommissioning and Contaminated Water Treatment

Immediate target	Identify the plant status and commence R&D and decontamination toward fuel debris removal

Water flow was detected from the Main Steam Isolation Valve* room

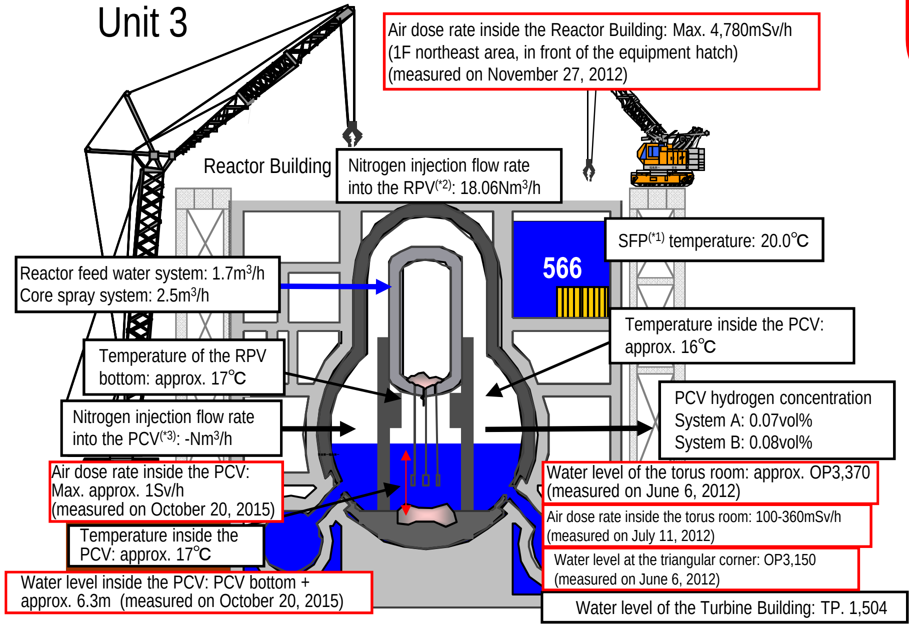
On January 18, 2014, a flow of water from around the door of the Steam Isolation Valve room in the Reactor Building Unit 3 1st floor northeast area to the nearby floor drain funnel (drain outlet) was detected. As the drain outlet connects with the underground part of the Reactor Building, there is no possibility of outflow from the building.

From April 23, 2014, image data has been acquired by camera and the radiation dose measured via pipes for measurement instrumentation, which connect the air-conditioning room on the Reactor Building 2nd floor with the Main Steam Isolation Valve Room on the 1st floor. On May 15, 2014, water flow from the expansion joint of one Main Steam Line was detected.

This is the first leak from PCV detected in the Unit 3. Based on the images collected in this investigation, the leak volume will be estimated and the need for additional investigations will be examined. The investigative results will also be utilized to examine water stoppage and PCV repair methods.

* Main Steam Isolation Valve: A valve to shut off the steam generated from the Reactor in an emergency

Unit 3

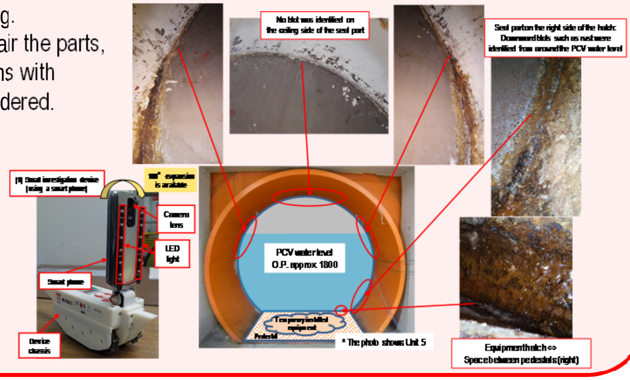


* Indices related to plant are values as of 11:00, February 24, 2016

Investigations inside PCV	1st (Oct – Dec 2015)	- Acquiring images - Measuring air temperature and dose rate - Measuring water level and temperature - Sampling accumulated water - Installing permanent monitoring instrumentation (scheduled for December 2015)
Leakage points from PC	- Main steam pipe bellows (identified in May 2014)	

Investigative results into the Unit 3 PCV equipment hatch using a small investigation device

- As part of the investigation into the PCV to facilitate fuel debris removal, the status around the Unit 3 PCV equipment hatch was investigated using a small self-traveling investigation device on November 26, 2015.
- Given blots such as rust identified below the water level inside the PCV, there may be a leakage from the seal to the extent of bleeding.
  Methods to investigate and repair the parts, including other PCV penetrations with a similar structure, will be considered.

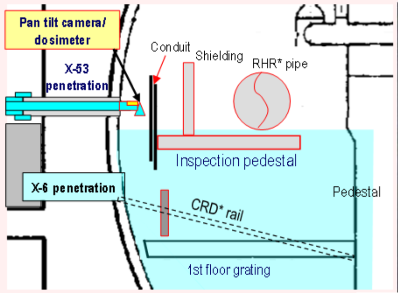


Investigation inside the PCV

Prior to removing fuel debris, to check the conditions inside the Primary Containment Vessel (PCV) including the location of the fuel debris, investigation inside the PCV was conducted.

[Steps for investigation and equipment development]
Investigation from X-53 penetration(*4)

- From October 22-24, the status of X-53 penetration, which may be under the water and which is scheduled for use to investigate the inside of the PCV, was investigated using remote-controlled ultrasonic test equipment. Results showed that the penetration is not under the water.
- For the purpose of confirming the status inside the PCV, an investigation device was inserted into the PCV from X-53 penetration on October 20 and 22, 2015 to obtain images, data of dose and temperature and sample accumulated water. No damage was identified on the structure and walls inside the PCV and the water level was almost identical with the estimated value. In addition, the dose inside the PCV was confirmed to be lower than in other Units.
- In the next step, the obtained information will be analyzed to be utilized in the consideration about the policy for future fuel debris removal.



Inspection pedestal and water surface

<Glossary>
(*1) SFP (Spent Fuel Pool)
(*2) RPV (Reactor Pressure Vessel)
(*3) PCV (Primary Containment Vessel)
(*4) Penetration: Through-hole of the PCV

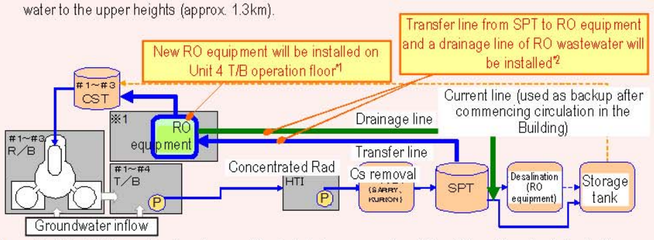
Progress toward decommissioning: Work related to circulation cooling and accumulated water treatment line

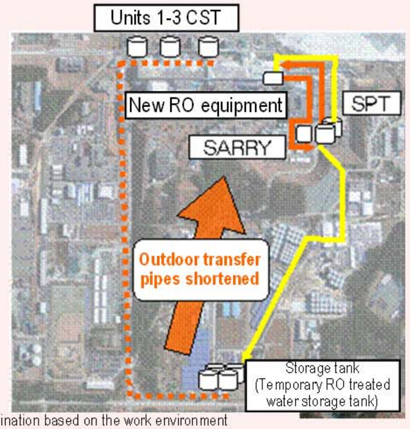
Immediate target	Stably continue reactor cooling and accumulated water treatment, and improve reliability

Work to improve the reliability of the circulation water injection cooling system and pipes to transfer accumulated water.

- Operation of the reactor water injection system using Unit 3 CST as a water source commenced (from July 5, 2013). Compared to the previous systems, in addition to the shortened outdoor line, the reliability of the reactor water injection system was enhanced, e.g. by increasing the amount of water-source storage and enhancing durability.
- By newly installing RO equipment inside the Reactor Building, the reactor water injection loop (circulation loop) will be shortened from approx. 3km to approx. 0.8km*.

* The entire length of contaminated water transfer pipes is approx. 2.1km, including the transfer line of surplus water to the upper heights (approx. 1.3km).





*1 Unit 4 T/B operation floor is one of the installation proposals, which will be determined after further examination based on the work environment
*2 A detailed line configuration will be determined after further examination

Dismantling of flange tanks completed in H1 east area

- To facilitate replacement of flange tanks, dismantling of flange tanks started in H1 east/H2 areas in May 2015. Dismantling of all flange tanks (12 tanks) in H1 east area was completed in October 2015. The work continues in H2 area.

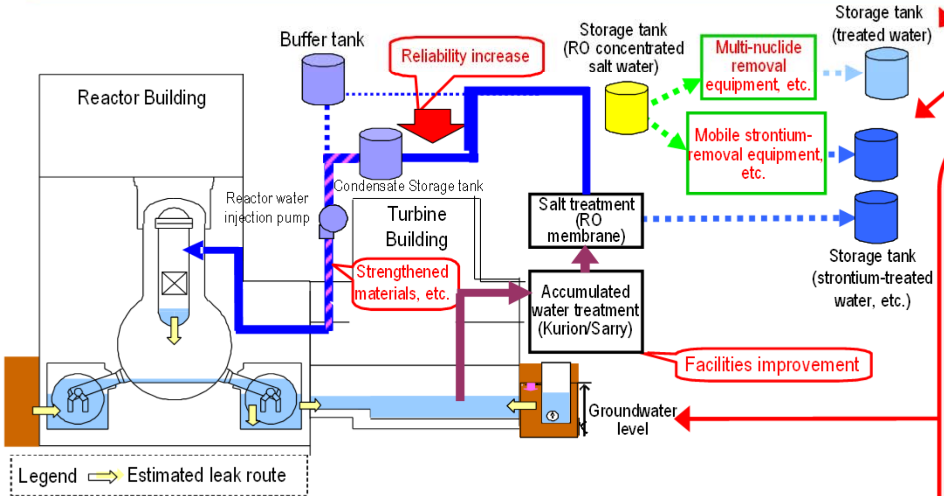

When dismantling started

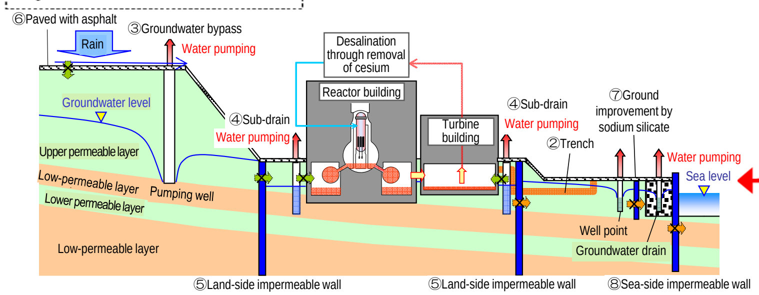

After dismantling

Completion of purification of contaminated water (RO concentrated salt water)

Contaminated water (RO concentrated salt water) is being treated using seven types of equipment including the multi-nuclide removal equipment (ALPS). Treatment of the RO concentrated salt water was completed on May 27, 2015, with the exception of the remaining water at the tank bottom. The remaining water will be treated sequentially toward dismantling the tanks.

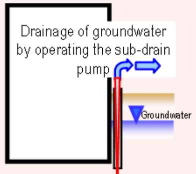
The strontium-treated water from other facilities than the multi-nuclide removal equipment will be re-purified in the multi-nuclide removal equipment to further reduce risks.





Land-side impermeable wall

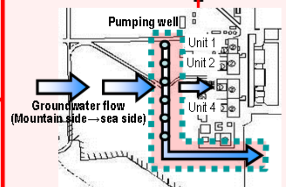
Preventing groundwater from flowing into the Reactor Buildings



Reducing groundwater inflow by pumping sub-drain water

To reduce groundwater flowing into the buildings, pumping-up of groundwater from wells (subdrains) around the buildings started on September 3, 2015. Pumped-up groundwater was purified at dedicated facilities and released after TEPCO and a third-party organization confirmed that its quality met operational targets.

Via a groundwater bypass, reduce the groundwater level around the Building and groundwater inflow into the Building



Measures to pump up groundwater flowing from the mountain side upstream of the Building to reduce the groundwater inflow (groundwater bypass) have been implemented.

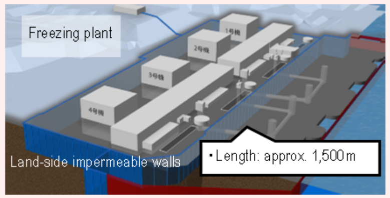
The pumped up groundwater is temporarily stored in tanks and released after TEPCO and a third-party organization have confirmed that its quality meets operational targets.

Through periodical monitoring, pumping of wells and tanks is operated appropriately.

At the observation holes installed at a height equivalent to the buildings, the trend showing a decline in groundwater levels is checked.

The analytical results on groundwater inflow into the buildings based on existing data showed a declining trend.

Installing land-side impermeable walls around Units 1-4 to prevent the inflow of groundwater into R/B



To prevent the inflow of groundwater into the Reactor Buildings, installation of impermeable walls on the land side is planned.

Installation of frozen pipes commenced on June 2, 2014. Construction for freezing facilities was completed in February 2016.

<Glossary>
(*1) CST (Condensate Storage Tank)
Tank for temporarily storing water used in the plant.

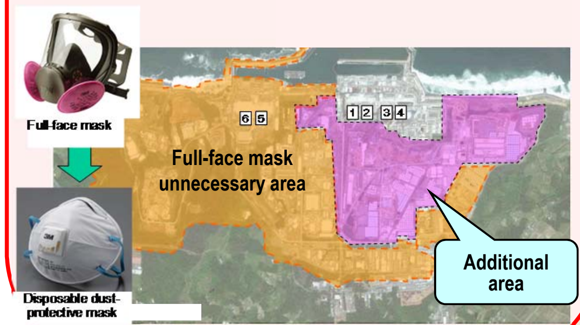
Progress toward decommissioning: Work to improve the environment within the site

Immediate targets	・Reduce the effect of additional release from the entire power station and radiation from radioactive waste (secondary water treatment waste, rubble, etc.) generated after the accident, to limit the effective radiation dose to below 1mSv/year at the site boundaries. ・Prevent contamination expansion in sea, decontamination within the site

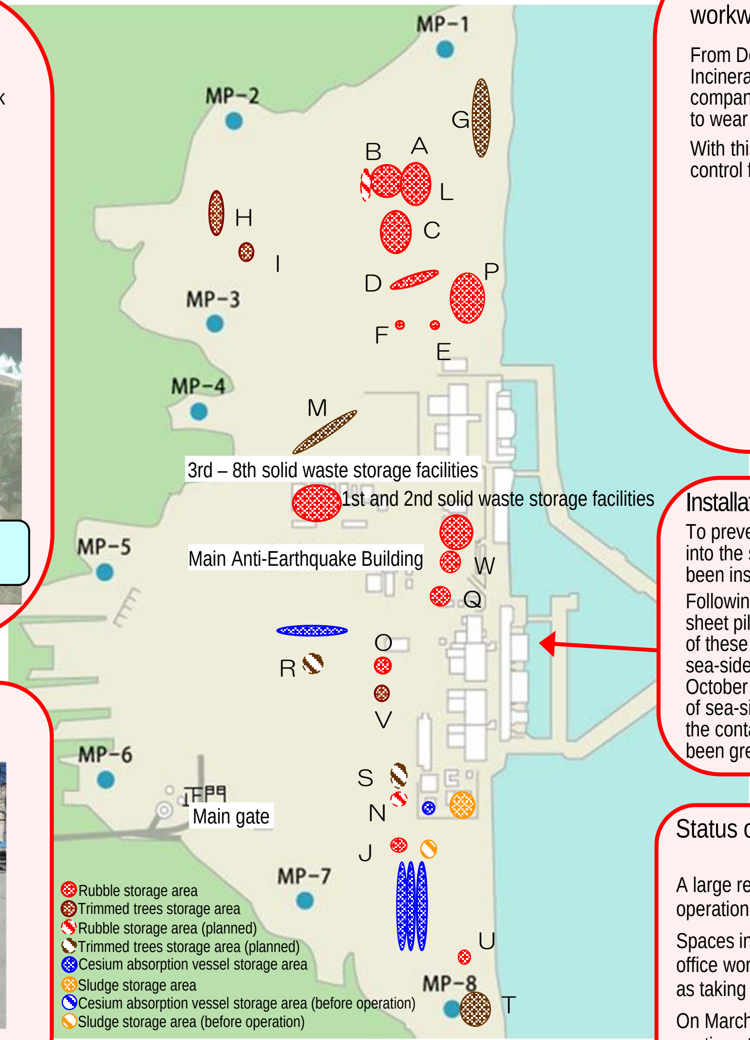
Expansion of full-face mask unnecessary area

As the number of continuous dust monitors has increased to ten with additional monitors installed in Units 3 and 4 slopes and tank areas, the full-face mask unnecessary area was expanded to approx. 90% of the site from May 29, 2015.

However, wearing full- or half-face mask is required for works exposed to highly concentrated dust; and full-face masks, for works involving a risk of ingesting concentrated salt water, etc.



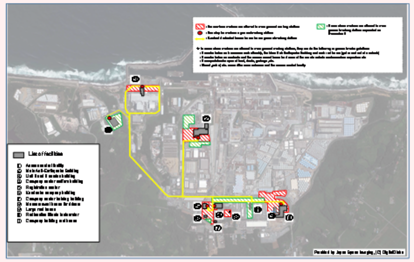
Full-face mask unnecessary area



Expansion of areas where workers are allowed to wear general workwear

From December 8, 2015, in addition to newly adding the Radioactive Waste Incinerator, areas of the Main Anti-Earthquake Building, rest houses of the company building, and parking were expanded as those where workers are allowed to wear general workwear.

With this expansion, workers can move in general workwear from the access control facility to each rest house around the company building.



Installation of sea-side impermeable walls

To prevent the outflow of contaminated water into the sea, sea-side impermeable walls have been installed.

Following the completed installation of steel pipe sheet piles on September 22, 2015, connection of these piles was conducted and connection of sea-side impermeable walls was completed on October 26, 2015. Through these works, closure of sea-side impermeable walls was finished and the contaminated water countermeasures have been greatly advanced.

Installation of steel pipe sheet piles for sea-side impermeable wall

Installation of dose-rate monitors

To help workers in the Fukushima Daiichi Nuclear Power Station precisely understand the conditions of their workplaces, a total of 86 dose-rate monitors were installed by January 4, 2016.

These monitors allow workers to confirm real time on-site dose rates at their workplaces.

Workers are also able to check concentrated data through large-scale displays installed in the Main Anti-Earthquake Building and the access control facility.

Installation of Dose-rate monitor

Status of the large rest house

A large rest house for workers was established and its operation commenced on May 31, 2015.

Spaces in the large rest house are also installed for office work and collective worker safety checks as well as taking rest.

On March 1, a convenience store will open. Efforts will continue to improve convenience of workers.