

Fukushima Daiichi Nuclear Power Station Unit 1

Pre-checks for an investigation of vicinity of the X-25 penetration

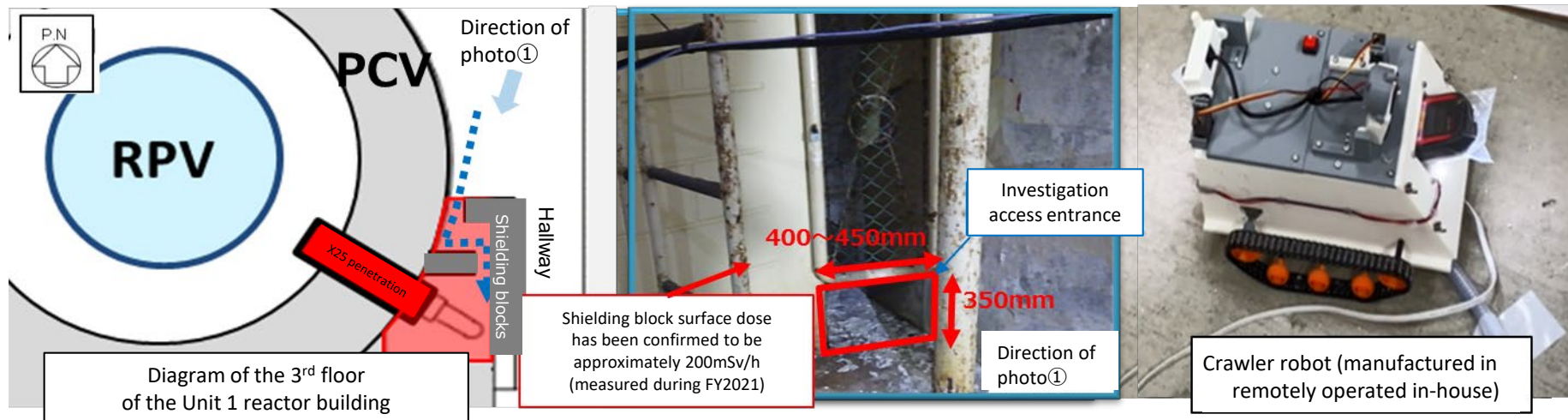
< Reference document >
November 18, 2024
Tokyo Electric Power Company Holdings, Inc.
Fukushima Daiichi Decontamination &
Decommissioning Engineering Company

- In the reactor buildings of Fukushima Daiichi Nuclear Power Station Units 1-4, we will be conducting investigations of areas that still bear the scars of the accident (high-dose areas, damaged areas, etc.) so as to obtain information about the accident before it is erased through the course of decommissioning.
- During an investigation conducted in FY2021, we measured high dose rates of approximately 200mSv/hour in the vicinity of the X-25 penetration (outside the shielding blocks)* on the east side of the 3rd Floor of the Unit 1 reactor building. Based on these investigation results, we believe it is highly possible that there are high-dose areas that exist on the inside of the shielding blocks.
 - * There are D/W vent pipes and valves on the inside of the shielding blocks that branch off from vent lines used during the accident, but the surface dose rates of the shielding blocks are higher than the branching pipe inlets, therefore we assume that the cause of the high dose rates is something other than the vents (refer to slide 3).

< Announced on February 24, 2022 >

- In order to conduct a detailed investigation of high-dose areas, we have been identified, preliminary confirmation of accessibility to the inside of the shielding block will be conducted starting on November 19, 2024. Since the area inside the shielding blocks is narrow and a high-dose area, this check is being performed using a crawler robot. Video footage of the area is being taken along with air dose measurements.
- Based on the results of this pre-check, we plan to conduct the investigation using a combination of remote operated devices such as crawler robots and drones.
- The information obtained through the investigation will be used to hypothesize the route by which radioactive substances leaked during the accident and also examine methods for reducing dose rates in high-dose areas.

Venting: The release of atmosphere from inside the PCV to prevent it from rupturing due to increased pressure,
D/W: Dry Well, RPV: Reactor Pressure Vessel, PCV: Primary Containment Vessel



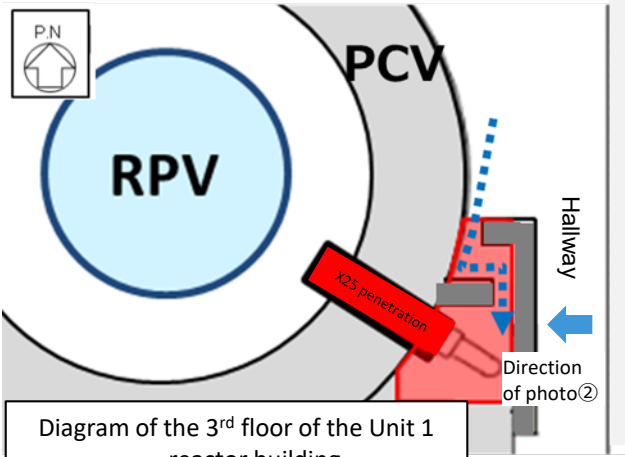
(Reference) Accessibility Pre-Check and Drone Investigation overview



- The inside of the shielding block is an unidentified area, the Investigation will be conducted with step-by-step targets.

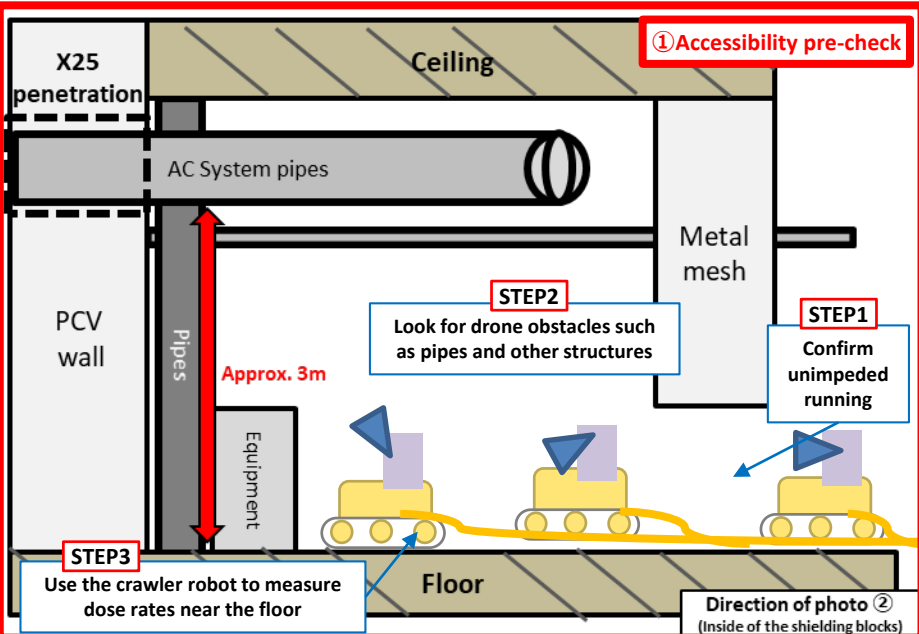
① Accessibility pre-check (detailed in this document)

- Implementation date: Tuesday, November 19, 2024
- Implementation details: A crawler robot will be used to check accessibility inside the shielding blocks and measure air dose rates
 - ✓ STEP1 : Confirm that the robot can access narrow areas and run unimpeded on the floor
 - ✓ STEP2 : Look for drone obstacles such as pipes and other structures
 - ✓ STEP3 : Measure air dose rates



AC system: Inert gas system

- ② Drone investigation
- Based on the results of ① an investigation that combines the crawler robot along with the drone will be implemented around February~March 2025 at the earliest.



② Drone investigation

Use the drone to take detailed video footage and measure doses

Passing the crawler robot through narrow areas

Use the crawler robot to measure dose rates near the floor

(Reference) Unit 1 AC system piping (vent piping) diagram

- The D/W vent piping branches off from the vent lines used during the accident but the dose rates in the vicinity of the investigation area (approximately 200mSv/h) are higher than the dose rates at the inlets to the branching pipes (approximately 27mSv/h), therefore we assume that the source of the high dose rates is something other than the vent.

