Fukushima Daiichi Nuclear Power Station
Progress of Fuel Removal from Spent Fuel Pools

July 30, 2026

Tokyo Electric Power Company Holdings, Inc.

TEPCO

1-1. Unit 1 Fuel removal from the spent fuel pool plan overview

- The 392 fuel assemblies* are being stored in the Unit 1 spent fuel pool will be removed in order to relocate them to the common pool where they can be cooled and stored in a more stable manner.

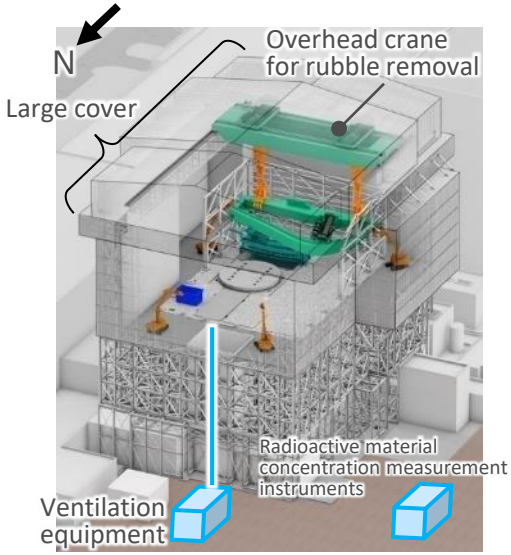
  * 292 spent fuel assemblies and 100 fresh fuel assemblies

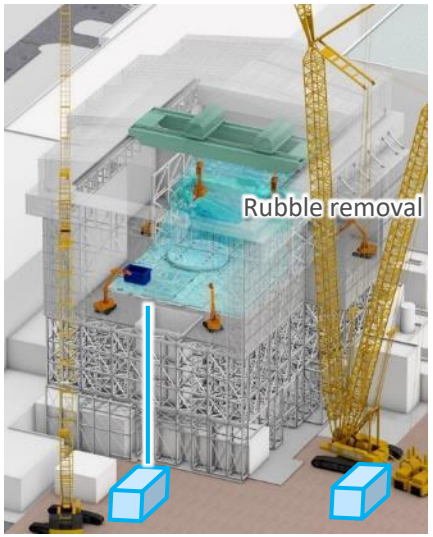
- Prior to fuel removal, a large cover that encompasses the entire reactor building is built, rubble removed from under the large cover, the operating floor decontaminated/shielded, and fuel handling equipment (fuel handling machine (FHM) and crane) installed.

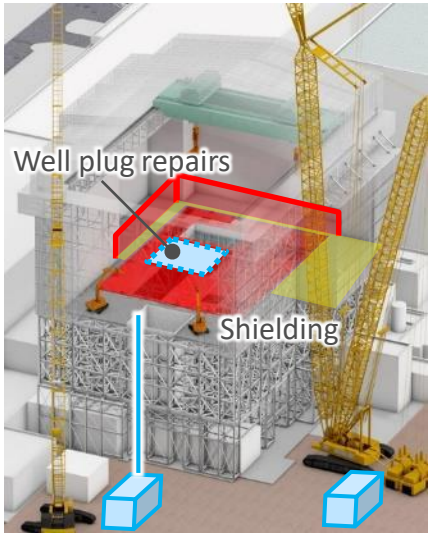
Large cover installation completed
(January 19, 2026)

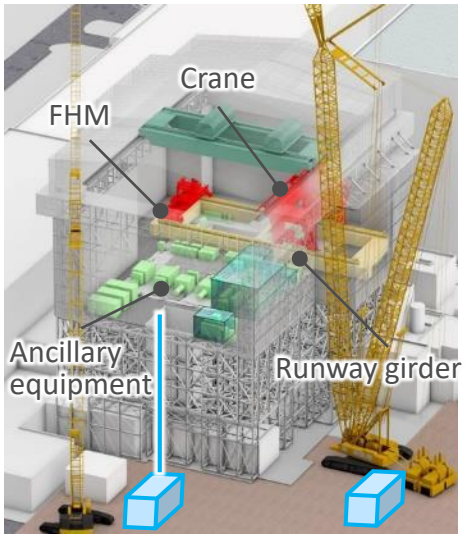
Commencement of fuel removal
(FY2027-2028)

STEP1	STEP2	STEP3	STEP4	STEP5
Install large cover	Rubble removal, etc.	Decontamination/shielding	Fuel handling equipment installation	Fuel removal





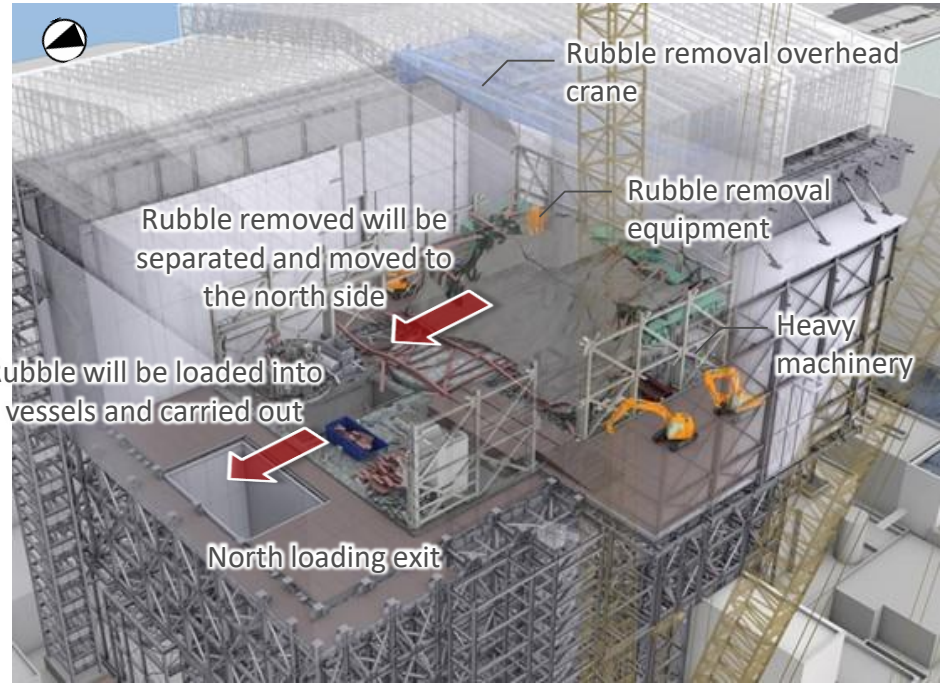




※These are just concept diagrams and actual location may differ.

1-2. Unit 1 Commencement of rubble removal

- Debris removal commenced on June 22, 2026.
- In consideration of worker exposure, the ceiling crane and heavy machinery inside the large cover will be operated remotely when performing work on the operating floor.
- Going forward rubble removal will continue in the form of crushing the rubble in order to load it into transport containers (vessels) and performing investigations of the floor on the north side of the operating floor.



Concept diagram of rubble removal

Crushing rubble on the operating floor (photographed on July 16, 2026)

1-3. Unit 1 Dust dispersion control measures during rubble removal on the operating floor

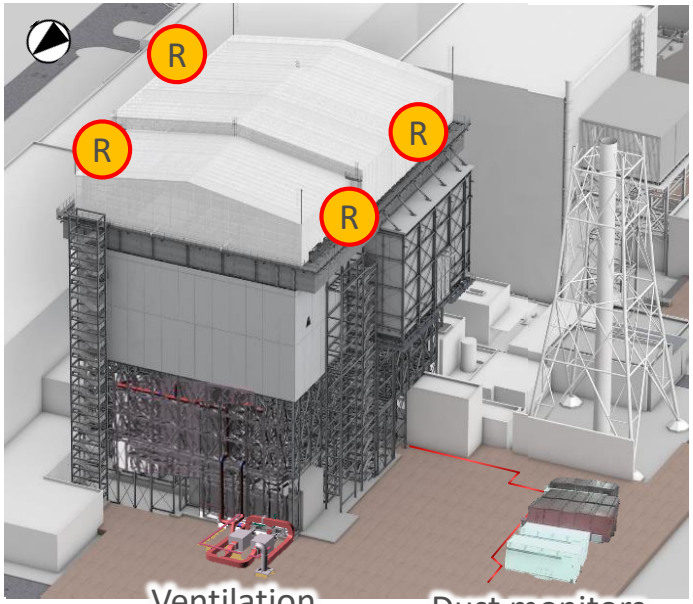
- A large cover has been constructed around the entire reactor building and ventilation equipment passes the air inside the cover through high-performance filters (HEPA filters) before releasing it into the atmosphere thereby reducing the risk of dispersing dust churned up during the removal of rubble
- During the removal of rubble dust concentrations are monitored at the following dust sampling locations
- If an alarm goes off at a location outside the retractable roof (R) or at the ventilation equipment exhaust (R), work is suspended and water is continually sprayed on the rubble

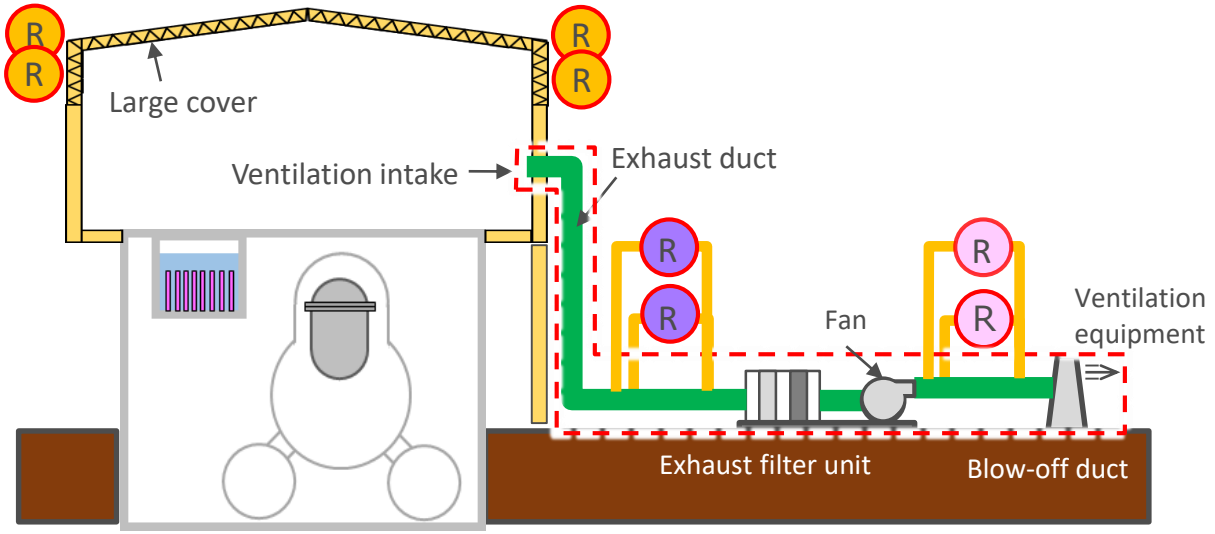
High-High alarm setting: 5.0×10^{-3}Bq/cm^3
High alarm setting: 1.0×10^{-3}Bq/cm^3

R : Dust sampling locations

- Outside the retractable roof: Dust concentrations around the moving parts of the large cover are monitored (four points) ※
- Ventilation equipment intake: Dust concentrations inside the large cover are monitored (two points)
- Ventilation equipment exhaust: Post-filtering dust concentrations are monitored (two points)

※ Spares can be switched over to if there are nonconformities with dust monitors

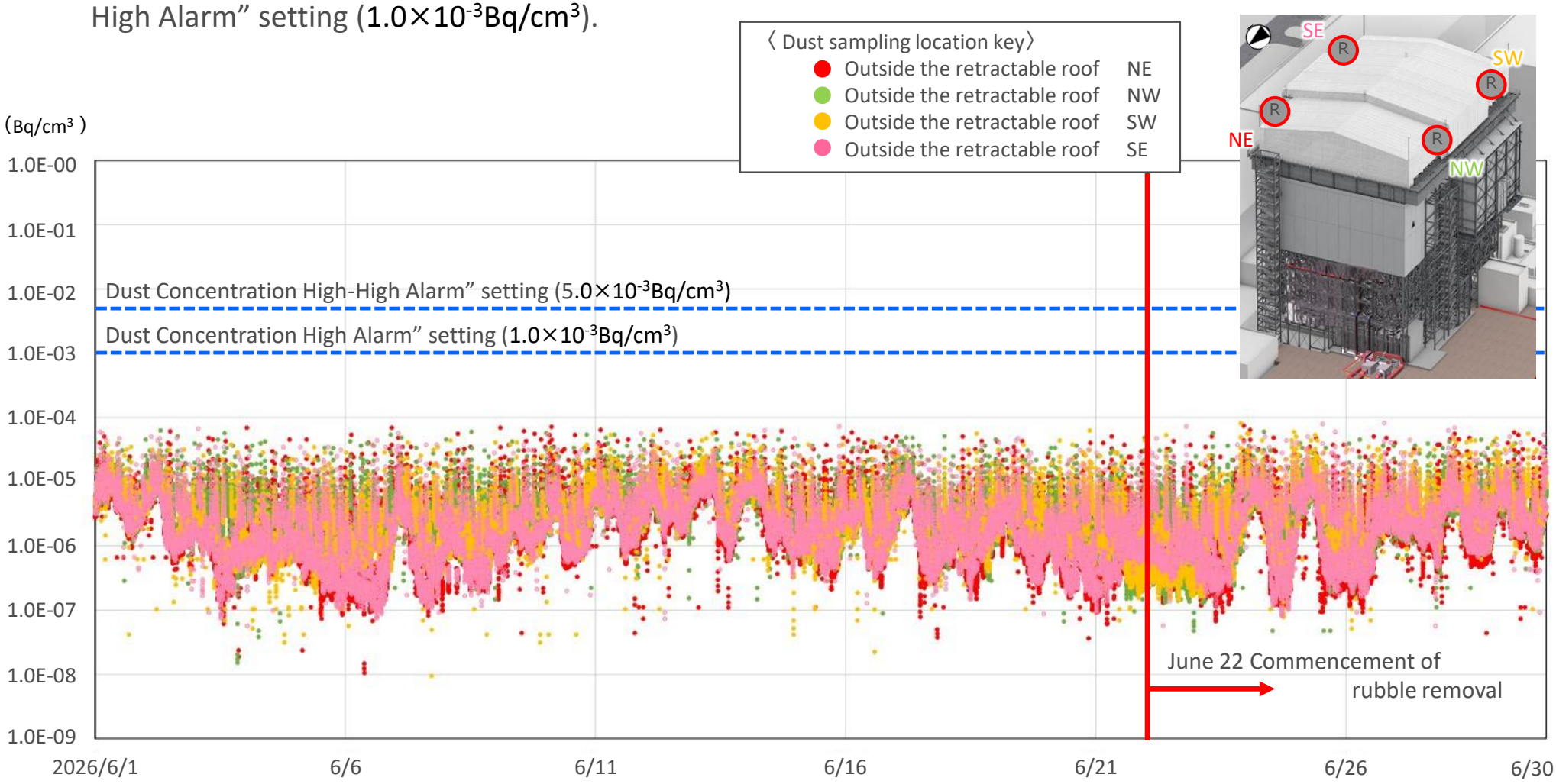




Overview of dust sampling locations during rubber removal

1-4. Unit 1 Dust sampling results from outside the retractable roof of the large cover

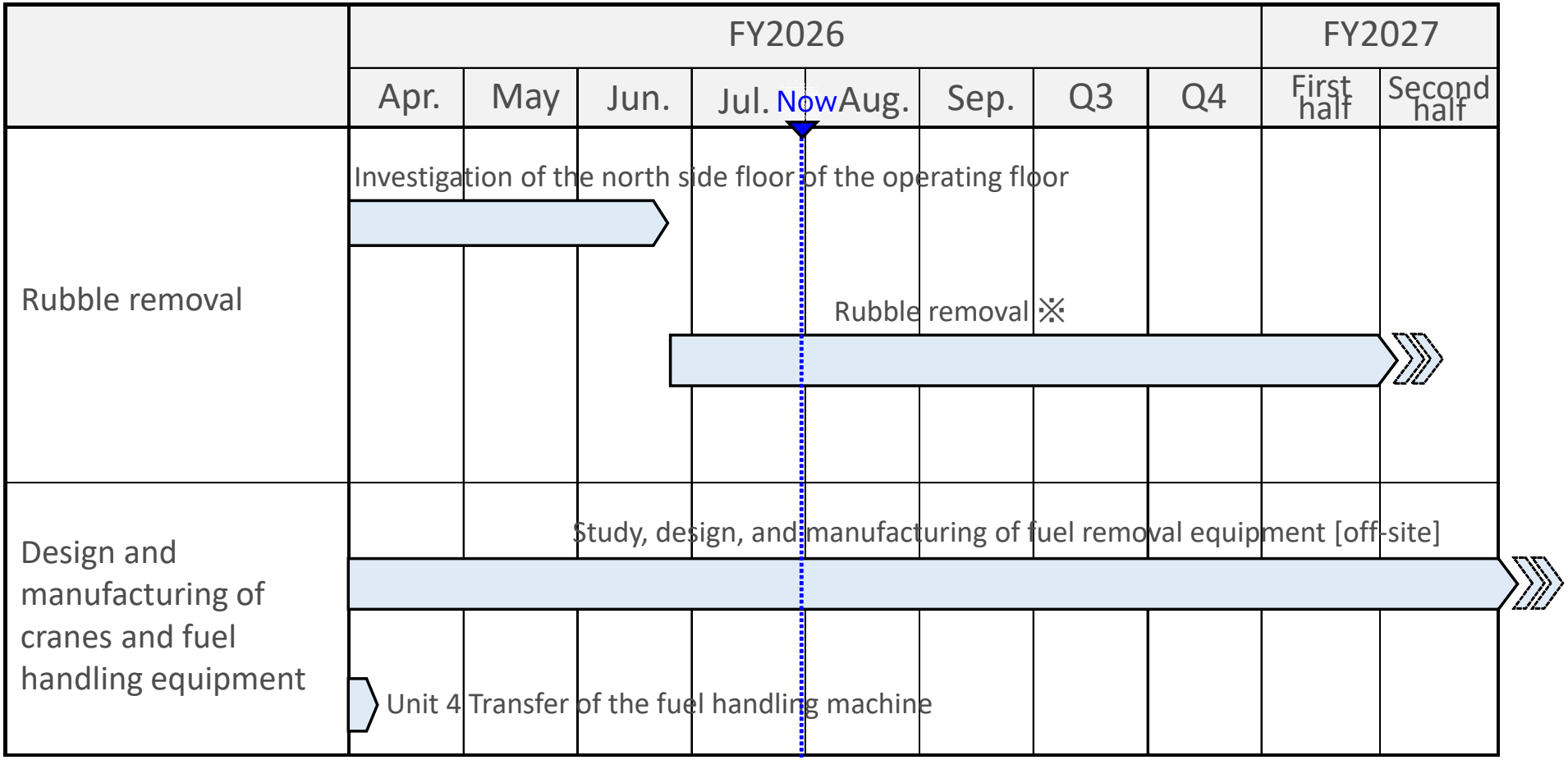
- The following shows the dust concentrations from outside the retractable roof during rubble removal in June 2026.
- No significant changes in dust concentrations were seen, and levels are well below the “Dust Concentration High Alarm” setting (1.0×10^{-3}Bq/cm^3).



Dust concentrations outside the retractable roof of the Unit 1 large cover

1-5. Unit 1 Upcoming schedule for fuel removal

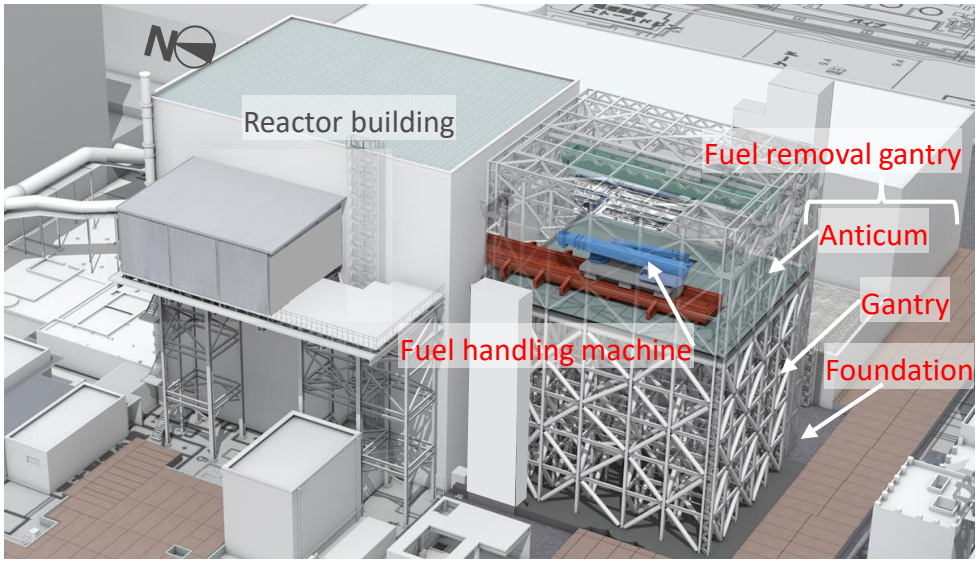
- Rubble removal on the operating floor began on June 22, 2026, and the investigation of the north side floor of the operating floor is ongoing.
- We will continue with this task while prioritizing safety.



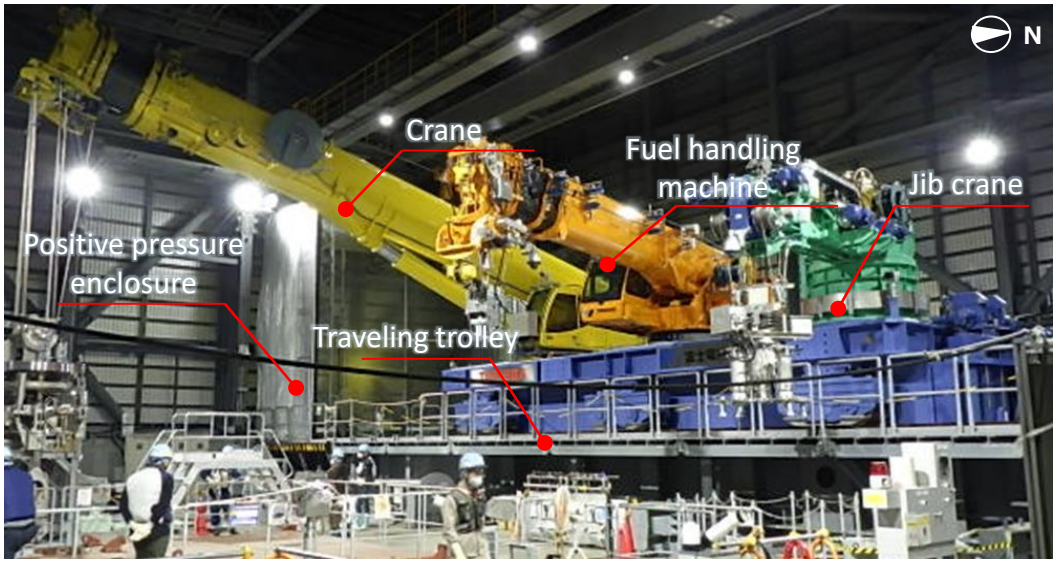
※ Including the floor surface investigation on the north side of the operating floor.

2-1. Unit 2 Fuel removal progress

- 615 fuel assemblies are currently being stored in the Unit 2 spent fuel pool. Fuel is being removed in order to relocate it to the common pool where it can be cooled and stored in a more stable manner.
- A fuel removal gantry has been built on the south side of the reactor building in order to remove the fuel. A small hole through which the fuel and transport containers are passed has been opened in the wall on the south side of the reactor building adjacent to the 5th floor. Equipment on the 5th floor of the reactor building is operated via remote control because it is a high-dose environment, but the fuel removal gantry, which is a low-dose environment, is manned.
- The removal of fuel currently being stored in the Unit 2 spent fuel pool began on June 2, 2026.
- As of July 30, 28 new fuel assemblies have been removed from the common pool (Fourth removal out of 89 planned removals)
- The fifth round of spent fuel removal is scheduled to commence in early August.



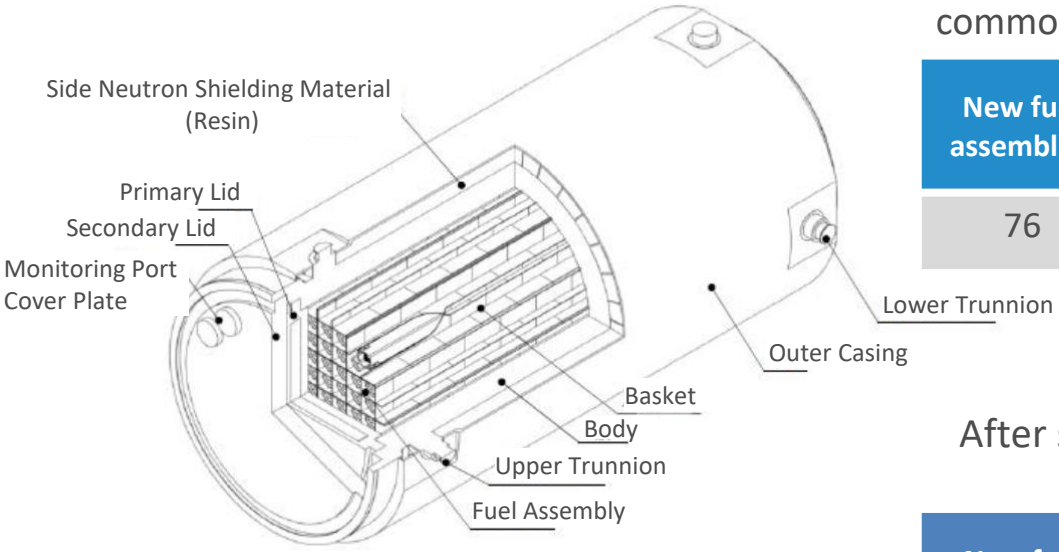
Fuel removal gantry diagram (bird's eye view)



Fuel handling machine inside the fuel removal gantry (photographed on September 8, 2025)

2-2. Securing storage space in the common pool (Required to remove fuel from Unit 2)

- As of the commencement of fuel removal from Unit 2 there is enough empty space in the common pool to store approximately 380 fuel assemblies, which is insufficient to store the 615 fuel assemblies currently located at Unit 2.
- In conjunction with the inspection of the Unit 2 fuel handling machine, spent fuel currently being stored in the common pool is being loaded into dry casks and relocated to a dry cask temporary storage facility on high ground thereby creating empty space in the common pool. We began this task in October 2026.
- We anticipate that approximately six dry casks will be needed in order to create space in the common pool to accommodate all of the fuel from Unit 2.



Dry cask (69 fuel assembly-capacity transport/storage cask diagram)

Number of fuel assemblies and the amount of empty space in the common pool prior to the commencement of Unit 2 fuel removal

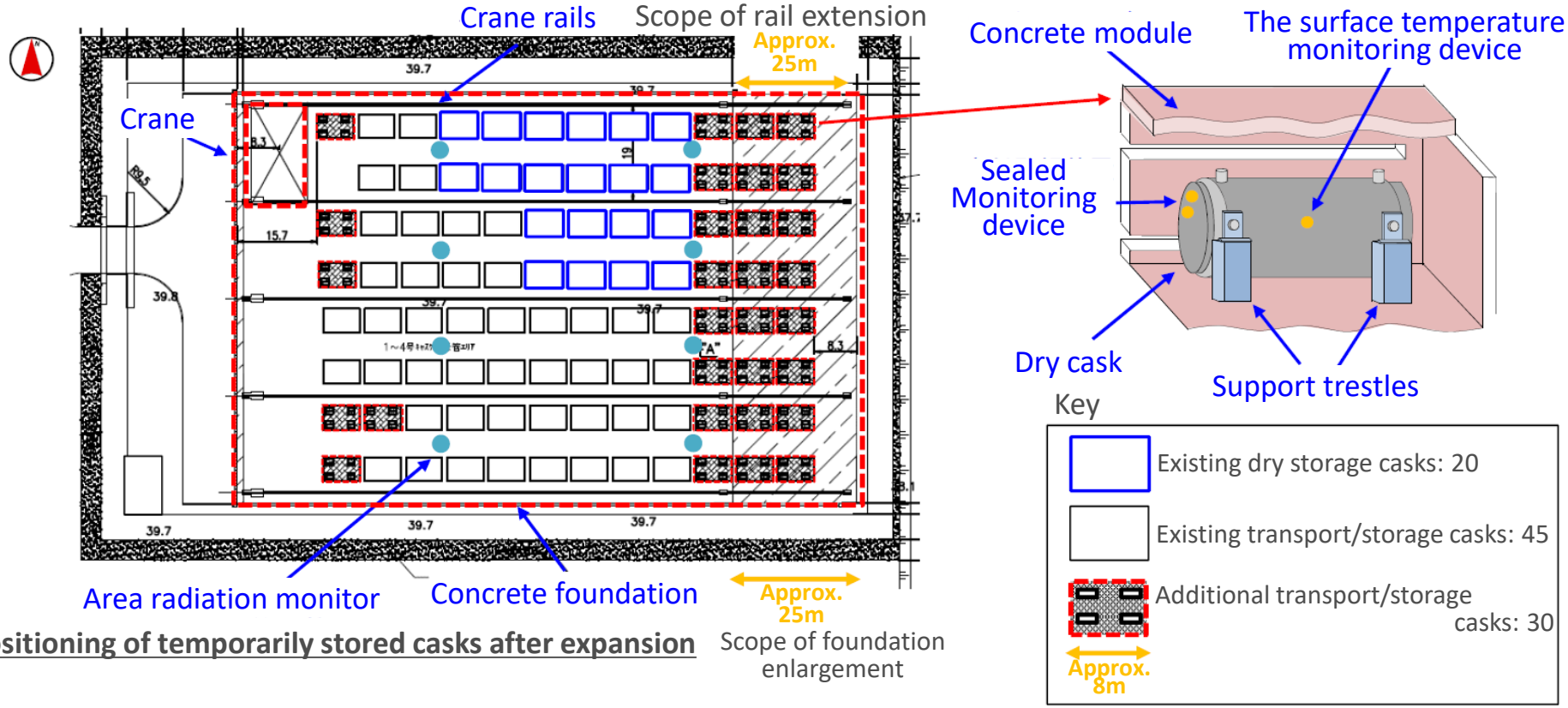
New fuel assemblies	Spent fuel assemblies	Total	Storage capacity (assemblies)	Empty storage space (assemblies)※1
76	6,273	6,349	6,734	385

After securing storage capacity through the use of dry casks (assuming six casks)※2

New fuel assemblies	Spent fuel assemblies	Total	Storage capacity (assemblies)	Empty storage space (assemblies)※1
76	5,859	5,935	6,734	799

※1 : The storage capacity for intact fuel is less than 385 because there is simulated fuel stored in the fuel racks and also some of the racks contain fuel with compromised integrity
※2 : Numbers do not reflect the number of fuel assemblies removed from Unit 2

- The original capacity of the dry cask temporary storage facility on high ground is 65 casks, and this facility is full.
- In order to secure storage space in the common pool for fuel removed from Units 1 , 2, and 5, 30 additional dry casks (2070 spent fuel assemblies=69 assemblies/cask x 30 casks※1) are currently under construction※2.
- A trestle has also been constructed while space is being created in the common pool so the dry casks can be relocated as soon as they are loaded.

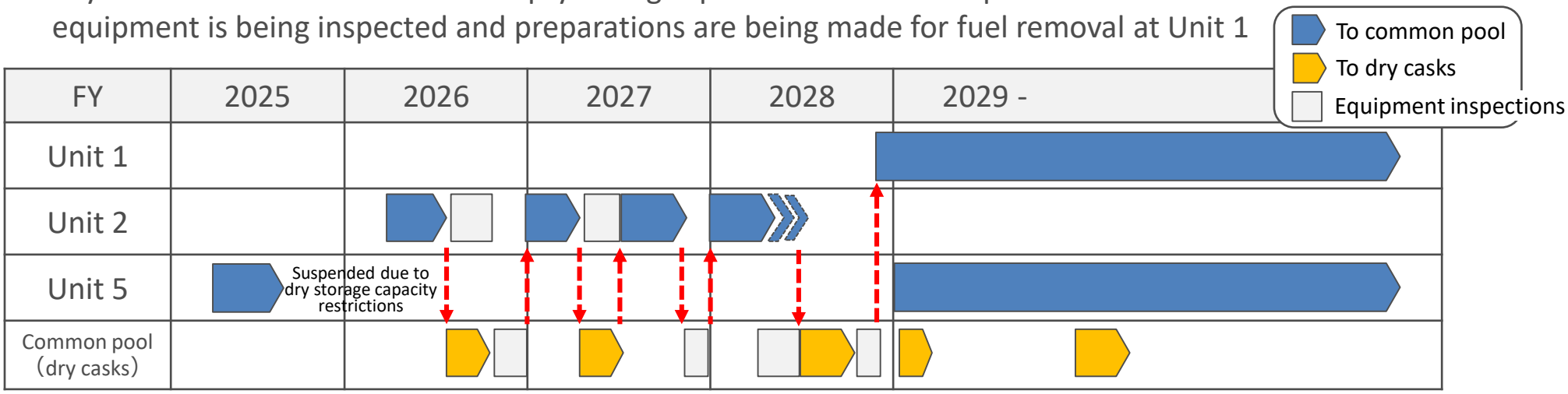


Positioning of temporarily stored casks after expansion

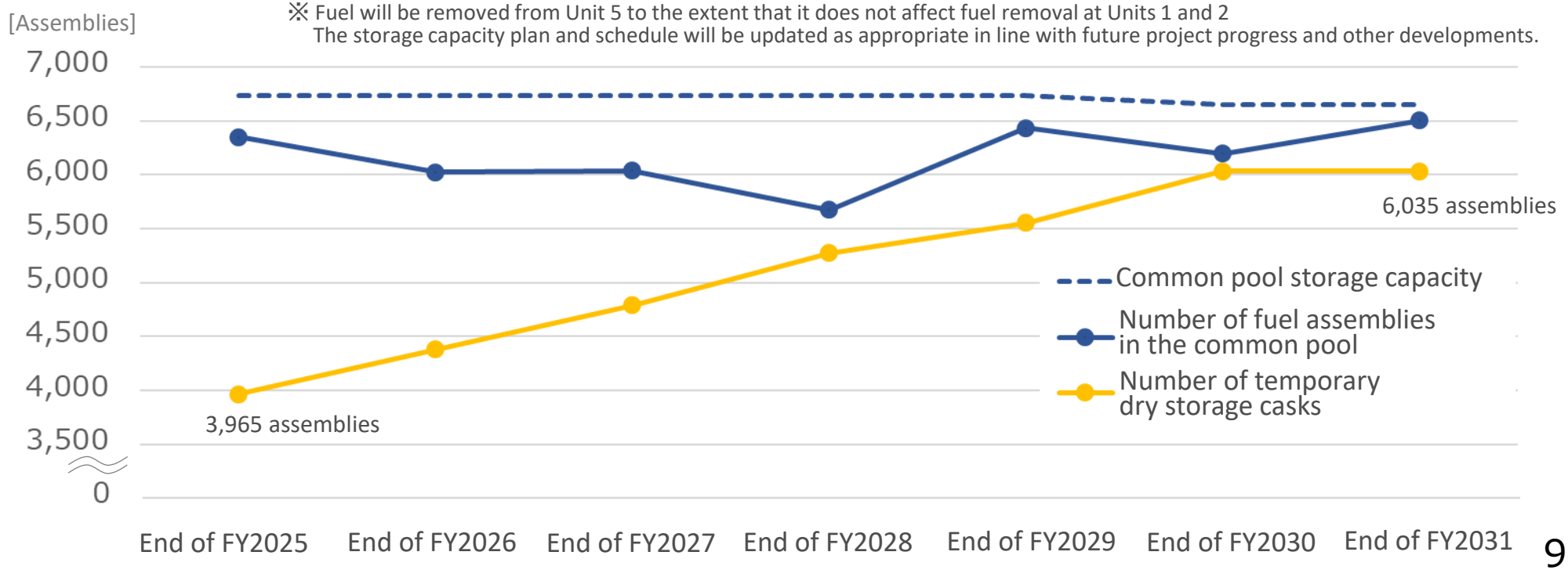
※1 : Prior to the commencement of fuel removal from Unit 2 the number of fuel assemblies to be removed from each unit are as follows: Unit 1: 392; Unit 2: 615; Unit 5: 1,220. Total: 2,227 assemblies. In addition to the 385 assembly-worth of empty space in the common pool, 30 dry casks can hold 2,070 assemblies for a total of 2,455 assemblies.
※2 : Implementation plan approved in August 2025

2-2. Securing storage space in the common pool (Storage Capacity Securing Plan)

■ Dry casks will be used to secure empty storage space in the common pool while Unit 2 equipment is being inspected and preparations are being made for fuel removal at Unit 1



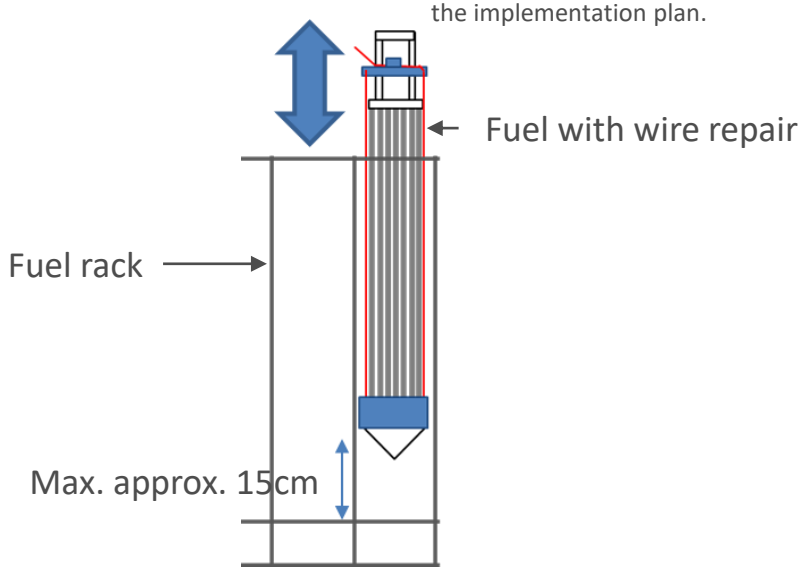
※ Fuel will be removed from Unit 5 to the extent that it does not affect fuel removal at Units 1 and 2
The storage capacity plan and schedule will be updated as appropriate in line with future project progress and other developments.



2-3. Test-hoisting fuel with a wire repair at Unit 2

- In the Unit 2 spent fuel pool there is a fuel assembly that has been repaired with a wire that has been in storage since the 1980s. ※1
- No abnormalities were observed during the underwater camera inspection of the upper part of the fuel. Corrosion testing using wire of the same specification, conducted in consideration of the seawater injection during the accident, confirmed sufficient wire strength. However, because special measures would be required if wire slackening or other issues were to occur during lifting, a lifting test will be carried out in August to confirm that the fuel can be lifted safely and without problems.
- During the lifting test, the fuel will be lifted carefully while monitoring the load and elevation coordinates. In addition, the lifting height will be limited to a level that would not affect the fuel rods in the unlikely event of a drop※2. It has been evaluated that, even if all gaseous radioactive materials contained within the fuel were hypothetically released, the effective dose at the site boundary would be 0.042 μSv※3.
- Based on the test results, equipment will be prepared to safely transport the fuel to the transport cask, and the fuel will be removed last after all other fuel has been retrieved.

※1: See page 12 for details.
※2: Approximately 15 cm. For a fuel type with thinner cladding than the subject fuel, the maximum drop height that would keep fuel rod deformation within the elastic range has been evaluated at approximately 34 cm. A sufficiently lower height has therefore been adopted.
※3: A value that takes into account radioactive decay and other factors, compared with the conservative evaluation value of 1.6 μSv in the implementation plan.

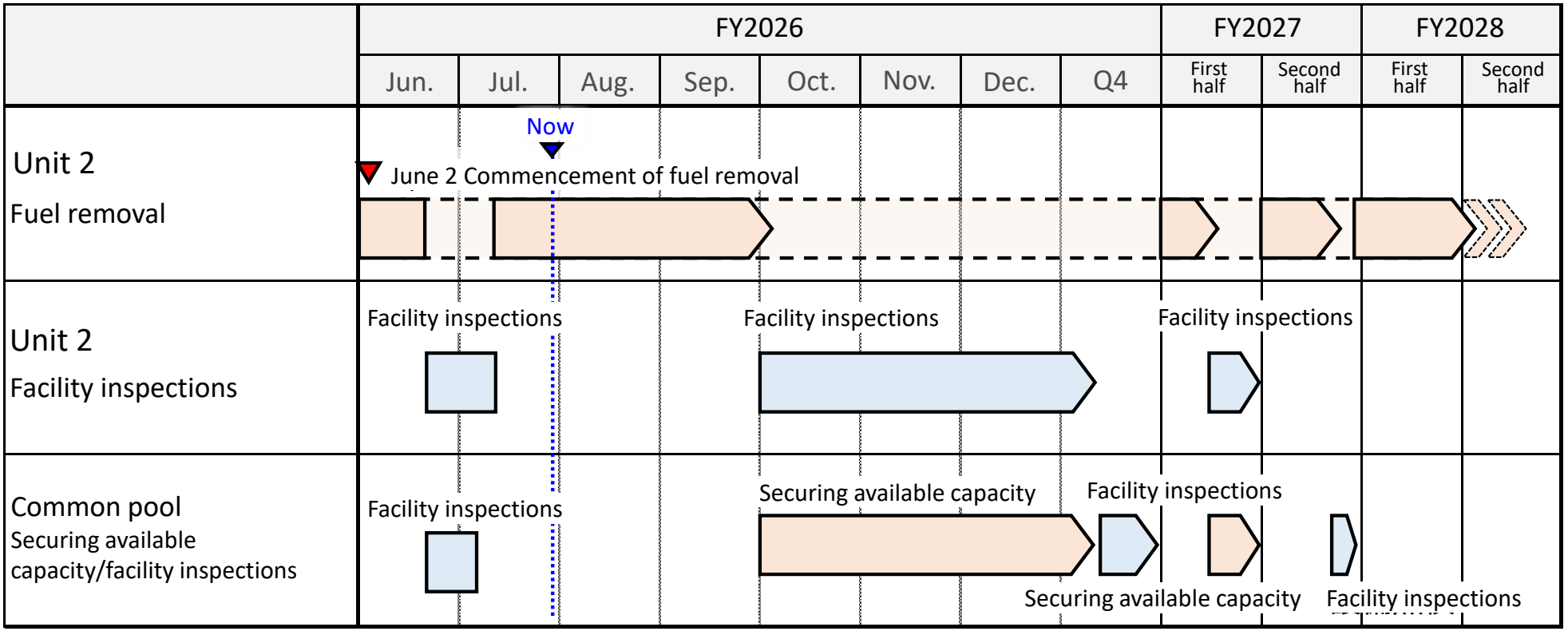


Hoisting test concept of diagram

Photograph of the top of the fuel assembly that has been repaired with a wire (Photographed on July 8, 2026)

2-4. Unit 2 Upcoming schedule for fuel removal

- Fuel removal from Unit 2 commenced in June 2026, with completion targeted within FY2028.
  - ✓ This includes interruptions for equipment inspections and for securing capacity in the common pool (such as transferring stored spent fuel into dry casks and moving them to the high-ground temporary dry cask storage facility to free up space in the common pool).
- We will continue to carry out operations with the highest priority on safety.



※ Changes may be made in accordance with schedule progress.
※ The line chart includes preparation and cleanup periods.

【Reference】 Integrity-compromised fuel stored at Unit 2

(Fuel repaired with a wire)

- In 1981, this fuel assembly was dropped when it was being handled inside the Unit 2 SFP. As a result, the bottom end plug of the joined fuel rods*1 was damaged and cannot be used for hoisting. The following year, this fuel assembly was wrapped together with a wire to enable it to be handled with a fuel handling machine. It has been in storage ever since. A visual inspection of the aforementioned fuel assembly has confirmed that cladding tube seal integrity has not been compromised.
- During this investigation, the upper portion of the aforementioned fuel assembly was examined and a submersible ROV was used to search for any breaks in the wire used to make the repair or loose securing jigs. None of the above was found.
- Methods for handling the aforementioned fuel assembly will be deliberated after the results of the corrosion test currently being implemented on the wire used for the repair have been obtained, and prior to handling the fuel, a hoisting test will be implemented to confirm that the fuel assembly can be hoisted.

*1: This is a normal fuel rod, but the bottom end plug bolt has been cut off and the fuel rod has been joined with the bottom tie plate. When hoisting the fuel assembly, this is the part that supports the weight of the fuel assembly. There are eight joined fuel rods in one fuel assembly.

*2: The bottom of the fuel rod that is welded to the cladding tube, which is a metal tube in which the fuel pellets are located.

(Other integrity-compromised fuel)

- In the Unit 2 SFP there is also a fuel assembly that is leaking fuel due to a pinhole in one of the cladding tubes, and a fuel assembly that has a deformed bottom tie plate. Both of these fuel assemblies were in this state prior to the accident, and both can be handled with the fuel handling machine in the same manner as other intact fuel.

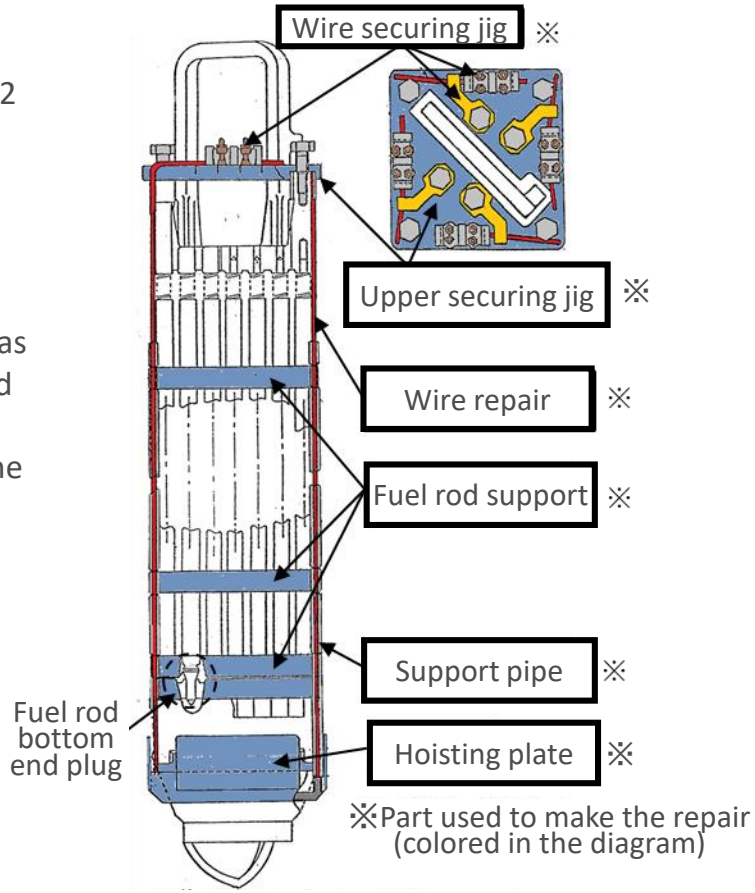


Diagram of the fuel repaired with a wire

Photo of the top of the fuel repaired with a wire