Phase: **Action**

Decommissioning Process **"Dismantling PCV/RPV/Buildings"**
Investigation Subject **"Dismantling"**
Issue **"Removing in-core structures and dismantling the buildings"**

Needs

1. Establishing a method and system for dismantling

Desired state and reasons for it

- Since dust and waste with relatively high radioactivity are considered to be generated during the removal of the in-core structure, it is desirable to fully understand and grasp the source of dust and the detachment, separation, and re-diffusion behavior of contaminated materials from concrete and structure during dismantling before implementing countermeasures.

Current state against ideal

- The "Mid-and-Long-Term Decommissioning Action Plan 2025" released by TEPCO on March 27, 2025, indicates the method and period of fuel debris retrieval, though does not describe the period and method of dismantling in-core structures, etc.
- On the other hand, in the airborne method, which is studied in the further expands the scale of extraction, a combined method of upper access and lateral access, rather than a stand-alone method which has been considered in the past, may remove part of the in-vessel structure in parallel with the fuel debris extraction work. In addition, in the mid- to long-term risk reduction target map for the Fukushima Daiichi Nuclear Power Station, it is planned to establish contamination surveys, demolition methods, and related measures for the implementation of demolition of the waste treatment buildings of Units 3 and 4, including the development of a building demolition model by fiscal year 2028.

Issues to be resolved

- Based on the outcomes of Issue number: DRB-205, it is necessary to investigate a dismantling method and system taking into account parts where decontamination is difficult.
- Based on the outcomes of Issue No. DRB-202, it is necessary to clarify technological issues in waste sorting operations.
- In order to dismantle efficiently and quickly, integrated removal can be considered in a certain scale (e.g., cutting out the whole RPV and transferring it out), so it is desirable to investigate a method and a system for this purpose.
- In particular, removal of in-core structures should be considered as a priority over building demolition because in-core structures may be removed in parallel with fuel debris removal.

2. Establishing countermeasures against dust during dismantling and advancing monitoring during dismantling

Desired state and reasons for it

- In order to improve the efficiency of dismantling operations, it is desirable to establish dust control measures during dismantling and to develop more sophisticated monitoring methods.
- In order to streamline the dismantling work, it is desirable to advance the monitoring method after establishing dust control measures during dismantling.

Current state against ideal

- Dust countermeasures, etc. for fuel debris retrieval operations are being investigated.

Issues to be resolved

- It is necessary that dust control measures during dismantling should be made based on the outcomes of DRB-101, DRB-203, and DRB-204 on assumptions about the sorts and volumes of dust to be generated.

Relevant Issues

- DRB-201 “Understanding structural integrity of PCV and buildings, etc.”
- DRB-203 “Developing dismantling scenario and sorting strategy”
- DRB-204 “Establishing work sequence”
- DRB-205 “Decontamination and dose rate reduction”
- TSR-101 “Characterization”
- TSR-102 “Waste strategy”
- TSR-103 “Material accountancy”
- PDR-101 “Characterization”
- PDR-102 “Waste strategy”
- PDR-103 “Material accountancy”