Decommissioning Process **"Common Issues"**
Investigation Subject **"Risk assessment"**

# Needs

## 1. Establishing a risk assessment method

**Fuel Debris Retrieval：【Mid】**

### Desired state and reasons for it

- In order to properly understand the risks caused by radioactive materials in Fukushima Daiichi NPS and to implement safe and steady decommissioning, it is necessary to identify the risk sources in Fukushima Daiichi NPS and clarify the events and risk sources that may require countermeasures. Therefore, it is desirable to establish a risk assessment method and continuously update the assessment results.
- In the above assessment, the Nuclear Regulatory Commission's Measures for Mid-term Risk Reduction at TEPCO's Fukushima Daiichi NPS (as of March 2024) may also be reference.

### Current state against ideal

- The Nuclear Damage Compensation and Decommissioning Facilitation Corporation's Technical Strategic Plan 2024 for Decommissioning of the Fukushima Daiichi Nuclear Power Station of Tokyo Electric Power Company Holdings, Inc. seeks to identify the major risk sources at Fukushima Daiichi NPS and quantify the risks using SED (Safety and Environmental Detriment) indicators.
- Mid-and-Long-Term Roadmap uses three basic categories for addressing these risk sources: (1) a category with relatively high risk and high priority (retained water in buildings and fuel in pools), (2) a category that is unlikely to become an immediate risk though could increase the risk if addressed too quickly (fuel debris), and (3) a category that is unlikely to become a significant risk in the future though should be addressed appropriately in the decommissioning process (solid waste such as sludge from decontamination equipment). Risks within these categories are prioritized and optimal measures are implemented.

### Issues to be resolved

- Decommissioning work may result in temporary changes in risk levels and increased exposure of workers. It is necessary to assess comprehensive risks, such as risks that take into account changes over time over several decades and risks that may arise "if" certain actions are not taken and reflect in the decommissioning strategy.
- It is necessary to clarify the concept and indicators of risk management. For example, there may be a concept in the case of "dust flying around", to take measures not only by "dust generation control" but also by "monitoring". It is important to understand what is considered as a risk and how to manage it.
- It is better that in addition to exposure risks, project risks such as process risks should also be addressed as risks.
- In particular, in the operation of risk assessment, it is better to be able to evaluate the overall risk by measuring the entire system with a single indicator, rather than conducting segmented evaluation (similar to the image like safety parameters of power plants). On the other hand, it is

better to also have risk assessment as judgement criteria for a decision-making for conducting individual work. It is important that the assessment method should be easy to use on-site.

- Unexpected events may occur following the long-term passage of time during decommissioning operations. It is important to carefully analyze events using methods such as root cause analysis, identify previously unanticipated risks and help prevent the occurrence of serious consequences.

## Relevant Issues

- FDR-213 "Fuel debris retrieval policy"
- FDR-214 "Establishing debris collection strategy"
- FDR-215 "Establishing and operating comprehensive risk management measures"
- DRB-203 "Developing dismantling scenario and sorting strategy"
- PDR-203 "Establishing disposal concept"