

**Decommissioning Process “Processing/Disposal/Environment Remediation (including Wastes containing Alpha Nuclides originating from Fuels)”**Investigation Subject “**Disposal**”Issue “**Disposal technology according to disposal concept**”

## Needs

### 1. Establishing a disposal technology according to the disposal concept and implementing the disposal

Processing/Disposal/Environment Remediation : [Long 2]

#### Desired state and reasons for it

- For the disposal of accident wastes, it is desirable to advance and establish a feasible rational and safe disposal technology based on a disposal concept investigated considering the requests and concerns of various stakeholders and the features of the wastes.
- In addition, it is desirable to prepare a method to investigate and establish a new disposal concept and technology in the case when there is a problem with application as a result of performance assessment.

#### Current state against ideal

- Critical scenarios that could have a significant impact on the feasibility of radioactive waste disposal have been identified, and the needs for disposal concepts are being grasped based on the critical scenarios and other information.
- As a countermeasure to these needs, the establishment of disposal concept options is being implemented and the technology for the establishment of disposal concept options is being advanced.

#### Issues to be resolved

- In terms of disposal technology, it is important to identify key scenarios that could have a significant impact on the feasibility of disposal based on investigations of the long-term transition behavior of the disposal facility considering the characteristics of the radioactive wastes, to grasp the needs for a disposal concept proposal based on these key scenarios, and to develop and improve a disposal concept option proposals that address these needs by making timely use of advanced safety assessment technology, domestic and international knowledge, and other factors.
- In addition, it is necessary to expand the scope of the individual waste streams reflecting this disposal concept option proposal, and to investigate the disposal concept option proposal from a bird's eye view of the entire radioactive waste of the Fukushima Daiichi Nuclear Power Plant, and to contribute to the investigation of appropriate measures for specific management of solid waste as a whole, in cooperation with knowledge obtained in fields other than disposal, such as the accuracy required for characterization and presentation of waste body performance targets, etc.
- Based on the disposal concept, it is necessary to clarify the component elements of the repository and their functions and design the repository.

- It is necessary to confirm by experiment and analysis whether each component element sufficiently performs its expected function.
- If necessary, it is necessary to develop a technology so that each component element performs its expected function.

## Relevant Issues

- PDR-203 "Establishing disposal concept"
- PDR-204 "Performance assessment"