

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

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.
- At TEPCO, a policy has been indicated to proceed with the characterization of solid waste which is necessary for investigation of the solid waste disposal, etc. using radioactive material analysis and research facilities.

Issues to be resolved

- In terms of disposal technology, it is necessary 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. And it is important 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. In addition, it is necessary to expand the draft disposal concept options and the evidences indicating their feasibility 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"