

Decommissioning Process **“Processing/Disposal/Environment Remediation (including Wastes containing Alpha Nuclides originating from Fuels)”**  
Investigation Subject **“Waste package qualification”**  
Issue **“Verification and analysis method on waste package”**

## Needs

### 1. Establishing a method to examine and analyze waste package

Processing/Disposal/Environment Remediation : [Long 2]

#### Desired state and reasons for it

- In the decommissioning of the Fukushima Daiichi NPS, a large amount and variety of wastes are to be handled. Therefore, it is desirable to establish a rational and practical method to examine the waste package and a corresponding analytical method.
- Since waste package confirmation is highly likely to be a bottleneck in disposing of the waste, it is desirable to optimize the analytical burden and uncertainty, while ensuring safety.

#### Current state against ideal

- The partitioning behavior of nuclides during melting and decontaminating contaminated metals and verification methods after melting treatment are being investigated for volume reduction and reuse of metal wastes.

#### Issues to be resolved

- The concept and methods of verification for wastes generated from normal nuclear power plants have been established. However, it is difficult to apply them to the accidental Fukushima Daiichi NPS. Instead, it is necessary to have an examination and analysis method for waste package specific to the accident reactor.
- From the viewpoint of the cost and the work efficiency, it is also necessary to establish a rational method for verifying the waste package according to the features of accident wastes.
- For instance, there are some cases assumed such as examining by type approval, storing the records in accordance with a manual that describes the removal of hazardous substances at the waste generation stage, ensuring quality by setting and managing appropriate operational conditions and parameters for processing, and so on. Finally, it is necessary to investigate an overall strategy, including procedures for examining that waste package features satisfies the required criteria of the repository.

## Relevant Issues

- PDR-103 “Material accountancy”
- PDR-201 “Reuse and volume reduction”
- PDR-202 “Waste conditioning method”
- BST-003 “Measurement and analysis technology”