

International Conference on Management of Spent Fuel from Nuclear Power Reactors: An Integrated Approach to the Back End of the Fuel Cycle



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Demonstration Test Program for Long-term Dry Storage of PWR Spent Fuel

In Japan, the first interim spent fuel storage facility away-from-reactor (AFR) will start its operation for management of spent fuels until reprocessing. This facility stores BWR /PWR spent fuel assemblies using dry metal dual purpose casks (storage / transport) which will be transported to their destinations after the interim storage for decades. This facility is not equipped with a hot-cell for opening the primary lid of the cask because one of the basic concepts the facility is a simple operation not to handle a radioactive material directly, that reduces radiation exposure of workers and a risk of contamination troubles.

Although a visual inspection of spent fuel assemblies is usually carried out before spent fuel transportation, the visual inspection of spent fuel assemblies is not carried out in the interim storage facility because the interim storage facility does not have a hot-cell as noted above. Therefore, we are preparing for the demonstration test for long-term dry storage designed to confirm the spent fuel integrity during long-term dry storage by use of the test container which is able to reproduce storing the PWR spent fuel in the similar environment to actual casks.

In this presentation, we introduce the approach to store the PWR spent fuel for long-term and the status of the demonstration test with explanation of the outline of the demonstration test, the specification of the manufactured test container and the result of temperature evaluation of spent fuel assemblies during dry storage in the test container with a previously-verified assessment tool which is constructed to simulate the result of heat-transfer test for the test container.

Country/ int. organization

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