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Research towards Prolonged Interim Storage from the Regulatory Body Perspective

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The Federal Office for the Safety of Nuclear Waste Management (BfE) is the competent licensing authority for interim storage of spent nuclear fuel (SNF) and high-level radioactive waste in Germany. The concept of dry interim storage, comprises dual purpose casks equipped with a double barrier lid system with permanent monitoring of its leak-tightness.

Existing storage licences in Germany are limited to 40 years. Due to the time needed for site selection, construction and commissioning of a deep geological repository, a prolongation of the interim storage period will be necessary to bridge the gap until final disposal. To demonstrate if safety requirements could be fulfilled by the transport and storage cask beyond the initially licensed 40 years additional research is required.

Research towards material degradation e.g ageing of cask materials or internals, fuel assembly behaviour and behaviour of storage facility buildings and operational equipment is the basis for the safety of SNF storage. To identify potential fields of further interest it is also necessary to acquire additional data for the above mentioned research.

As interim storage facilities are a key step towards the final disposal, it is also necessary to conduct research towards the impact of prolonged interim storage on the final disposal, especially due to the increasing relevance of ageing effects like material degradation. This includes foremost data acquisition and storage to enable a safety based choice of actions.

Furthermore, as Germany is phasing out of nuclear energy the knowledge management in the nuclear field gains enormous importance especially in regard of human resources.

The BfE as licensing authority has initiated several research projects to cover the foresaid topics to be presented in this article.

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Country or International Organization

Germany

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