

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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Progress towards a solution for intermediate storage of spent nuclear fuel in Norway

Spent Nuclear Fuel (SNF) in Norway has arisen from irradiation of fuel in the NORA, JEEP I and JEEP II reactors at Kjeller, and in the Halden Boiling Water Reactor (HBWR) in Halden. In total there are some 16 tonnes of SNF, all of which is currently stored on-site, in either wet or dry storage facilities. The greater part of the SNF, 12 tonnes, consists of aluminium-clad fuel, of which 10 tonnes is metallic uranium fuel and the remainder oxide (UO₂). Such fuel presents significant challenges with respect to long-term storage and disposal.

Current policy is for the fuel to be stored for a period of at least 50 years. In the meantime a national final disposal facility should be constructed and taken into operation. Several committees have advised the Government of Norway on, among others, policy issues, storage methods and localisation of a storage facility. Both experts and stake holders have participated in these committees. As the next stage in the process, a “Choice of concept” study was completed in early 2015.

This paper presents an overview of the spent fuel in Norway and a description of current storage facilities. The prospects and plans for long-term storage are then described, including a summary of recommendations made to government, the reactions of various stakeholders to these recommendations, the current status, and the proposed next steps.

It has been recommended that the aluminium-clad fuel be reprocessed in an overseas commercial facility to produce a stable waste form for storage and disposal. This recommendation is controversial, and a decision has not yet been taken on whether to pursue this option. An analysis of available storage concepts resulted in the recommendation to use dual-purpose casks.

A further recommendation was that a public organisation, independent of the producer of the spent fuel, be founded to manage the SNF and that this organization also should have the responsibility for managing radioactive waste in Norway. Funding and operation of this organisation should be based on the principle that the polluter pays.

Country/ int. organization

Norway

Primary author: Mr BENNETT, Peter (IFE)

Co-authors: Dr OBERLANDER, Barbara (IFE); Mr LARSEN, Erlend (IFE); Dr REISTAD, Ole (IFE)

Presenter: Mr BENNETT, Peter (IFE)