

# 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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## Regulatory experiences from implementation of SNF disposal programme from site selection to construction of disposal facility –the Finnish case

Finland is one of the foremost countries in the world in developing a disposal solution for spent nuclear fuel (SNF). The Construction License Application (CLA) for the Olkiluoto SNF encapsulation and disposal facility was submitted to the authorities at the end of 2012 and the facility is expected to start operation around 2022.

In 1983 the Government made a strategy decision on the objectives and target time schedule for the research, development and technical planning of nuclear waste management. Decision included the milestones for an operating disposal facility by 2020.

The Government issued in 2000 a Decision in Principle deciding that Olkiluoto will be the site for the SNF repository and that Posiva was allowed to proceed by constructing there the underground rock characterization facility, Onkalo. The disposal concept was decided to be KBS-3 and the disposal facility was planned to be located at a depth of 400-700 meters.

After Decision in principle STUK has developed regulatory oversight approach for underground facilities that has been used in oversight of Onkalo construction. The safety case development was first reviewed by using bottom-up approach. Based on the experiences STUK developed for CLA review and assessment more safety oriented approach.

Posiva submitted the construction license application and supporting documentation to the authorities at the end of 2012. STUK started the review and assessment with an initial review in early 2013. STUK has performed thorough review and assessment against safety requirements. Results of the review will be presented to the Finnish government around January 2015. The CLA and STUK's review cover aspects of safety, security and nuclear safeguards. The scope of application covers both operational safety of facilities and post-closure safety of disposal.

In pre-CLA phase STUK implemented comprehensive process of preparations, which included resource and competence build-up, preparation of internal review plan and review of Posiva's draft CLA documentation. In parallel with CLA review process STUK has implemented inspection program focusing on applicant's management system and readiness for construction. To support regulatory decision making, STUK has used a wide range of national and international experts in the CLA review process.

The paper will highlight key aspects of regulatory oversight and experiences from detailed site characterization, safety case development phase and review and assessment of the construction license application for Olkiluoto SNF encapsulation and disposal facility.

### Country/ int. organization

Finland, STUK

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