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## Regulating the first spent fuel final repository in the world –Finnish pioneering solutions

Finland is the first in the world to license a spent fuel final repository. This has required almost 40 years commitment to develop and regulate the repository project. Generation of nuclear power generates spent nuclear fuel and other nuclear waste, that has to be managed safely. The Finnish policy for safe end-solution is disposal in our bedrock. Strategy to implement this was set by the Government in 1983. Posiva and nuclear power plant licensees, who are responsible for nuclear waste management, have developed final repository in accordance with Government strategy. Posiva Ltd (Posiva) submitted the construction license application (CLA) in the end of 2012 and Radiation and Nuclear Safety Authority of Finland (STUK) gave the statement and safety evaluation report to Ministry of Economic Affairs and Employment (MEAE) in February 2015. The construction license for Posiva was granted by the Government in November 2015.

STUK's review encompassed aspects of safety, security and safeguards. In all of these areas disposal of spent nuclear fuel is a new and unique area, where almost none no prior experience or examples was existing. For safeguards the final repository is also challenging for the international organizations like the IAEA and the European Commission. The new safeguards approaches for the encapsulation plant and the repository are in the development. Also, because there is no possibilities for reverification of the spent fuel, the method which is able to see the spent fuel assembly in pin level, has been developed. STUK has been in forefront for developing regulatory approach for final repository. This work has generated experience and examples that can benefit other planning for spent nuclear fuel disposal. In safeguards the Safeguards by Design (SbD) and the practical technical cooperation between operator, regulator and international organizations in very early phase have been essential.

### Which "Key Question" does your Abstract address?

NEW2.1

### Which alternative "Key Question" does your Abstract address? (if any)

NEW2.3

### Topics

NEW2

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