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## Getting ready for final disposal of spent fuel in Finland – lessons learned down the path of the Safeguards-by-Design cooperation

The spent nuclear fuel geological disposal systems in Finland are soon entering the implementation phase with the start of the construction of the encapsulation plant. This calls for a parallel identification of adequate safeguards measures and applicable techniques by the relevant regulatory bodies and safeguards authorities.

Multi-party cooperation is indispensable in this challenging task and the inspectorates of the international safeguards authorities (IAEA and European Commission) have liaised from the inception stages with the national safeguards authorities and the operators of the new installations in Finland. Safeguards-by-Design principles are being employed in a jointly developed process, aiming to assure the safeguardability of the novel installations.

Safeguards-by-Design addresses the complexity of the facilities and is expected to allow for an effective and efficient safeguards implementation making use of synergy effects between the needs of operators, state regulators, EURATOM and the IAEA at the earliest stage possible. Practically we apply a consultative process of design shaping, through which a geological disposal system becomes inherently safeguards-ready.

The paper presents the major components of the proposed safeguards system and the participatory process of its development and implementation, as well as its interplay with safety and security aspects of the geological deposition and isolation of the spent nuclear fuel.

### 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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