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Disposal of Spent Nuclear Fuel in Sweden: Safeguards Considerations

Sweden is in the final stages of planning and licensing an encapsulation plant and a geological repository that together will process and dispose of all spent nuclear fuel from the Swedish nuclear programme. If approved and built, the two facilities will handle and deposit about 150 copper canisters per year for about 40 years. Each canister will have 12 BWR or 4 PWR spent fuel assemblies.

This paper presents an outline of the proposed encapsulation plant and geological repository and possible national measures in support of international safeguards, and possible national measures implemented for domestic nuclear material control purposes. Only the operational phase of the geological repository is considered.

Model safeguards approaches for encapsulation plants and geological repositories were presented by the IAEA in 2010 and 2011. However, these model approaches are partly outdated and do not fully reflect the current (not yet finally formulated) policy of the IAEA, the findings of SAGOR I-II or the provisions of the Additional Protocol. They can therefore not be used directly as a basis for any detailed technical preparations by Sweden.

Of particular interest for Sweden would be information about IAEA's approach for maintaining continuity of knowledge for the daily spent fuel movements for verified assemblies until they are placed in the copper canisters and for the welded copper canisters until they - still inside their transport casks - reach the underground areas of the repository. It is also essential to find solutions, to avoid permanent presence of IAEA inspectors at the sites.

Swedish national measures for domestic nuclear material control purposes will mainly be based on a paper trail verification system that will ensure that all deposited spent fuel is correctly declared. This system will be supported by data from measurements performed for safety purposes by the operators of the two facilities.

Which "Key Question" does your Abstract address?

NEW2.2

Topics

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