EF8 technical break out session

Technical topic
'Technical Issues in Support of Retrievability'

The research leading to these results has received funding from the European Union's European Atomic Energy Community's (Euratom) Seventh Framework programme FP7 (2007-2013) under grant agreements n°249396, SecIGD, and n°323260, SecIGD2.

Introduction

Technical presentations

- Knowledge and experience on Retrievability of SF/HLW waste packages - Phillip Herold, BGE TEC (Germany)
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- Demonstrator of HLW disposal canister retrieval - Jean-Michel Hoorelbeke, Andra (France)
- Canister retrieval – status of work at SKB - Anni Fritzel, SKB (Sweden)

Technical discussions: state of art and remaining needs

- Removal techniques of buffer, plugs, seals and backfill (bentonite clay based, cementitious based, other…)
- Retrieval techniques of waste packages within disposal cell
- Knowledge of the phenomenological state of disposal cells (monitoring, modelling, KM)
- Management of contamination and/or activation products if any
- Lessons that could be learned on technical aspects from dismantling nuclear facilities

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Wrap up

NEA Reversibility and Retrievability Concepts

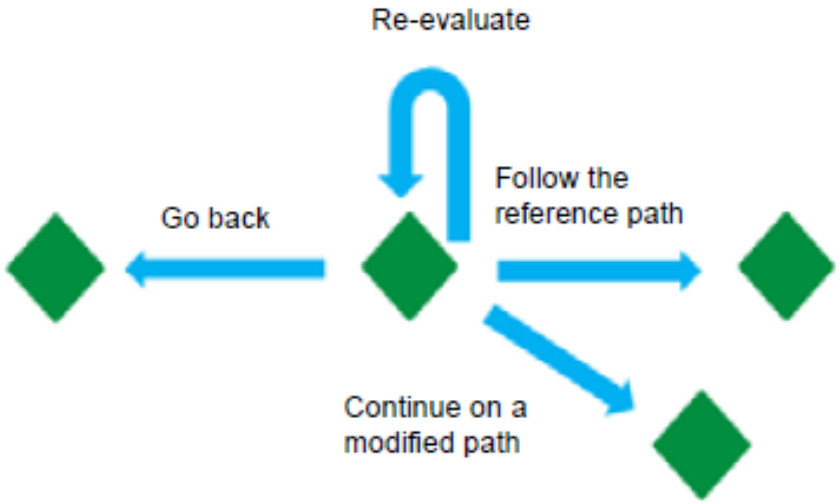

Figure 2: Potential outcomes of options assessment, including reversal

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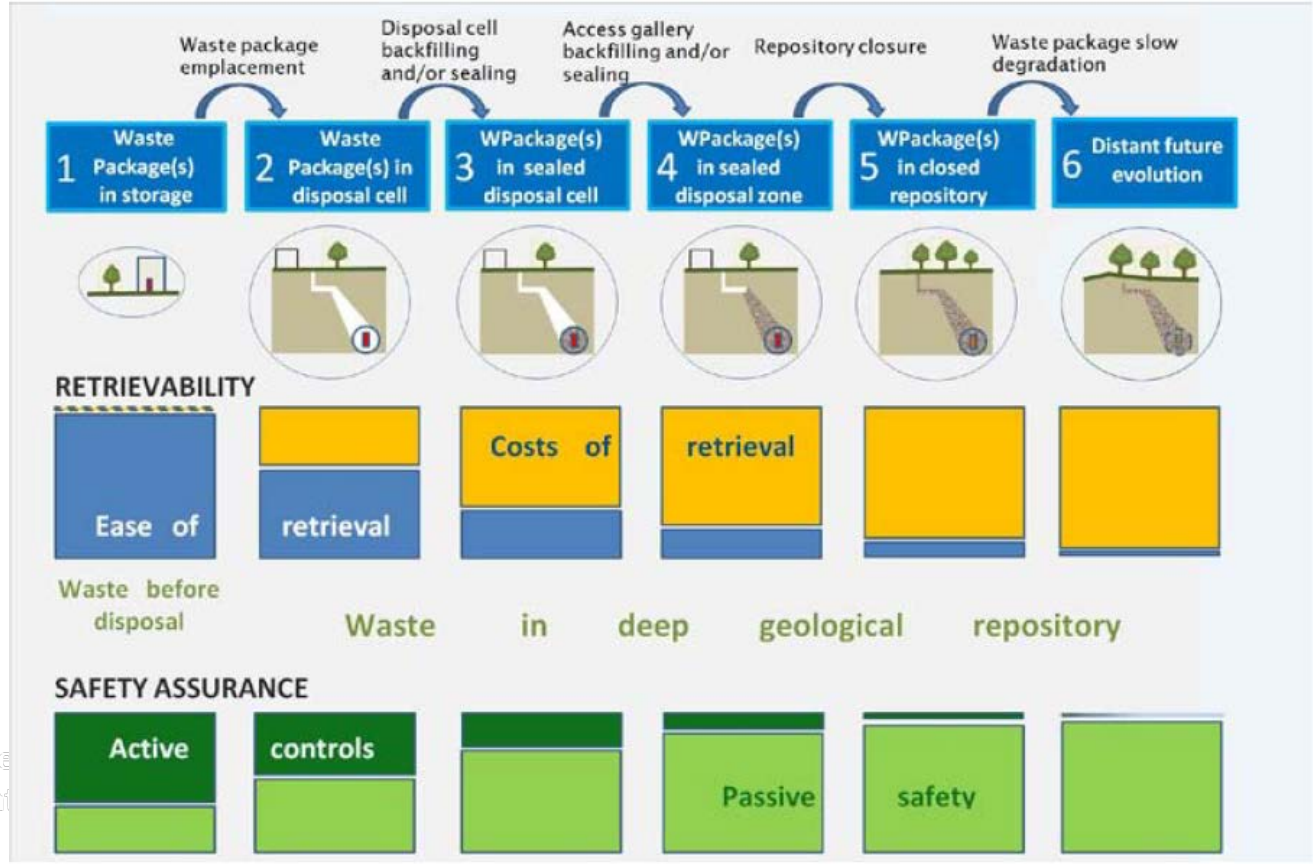
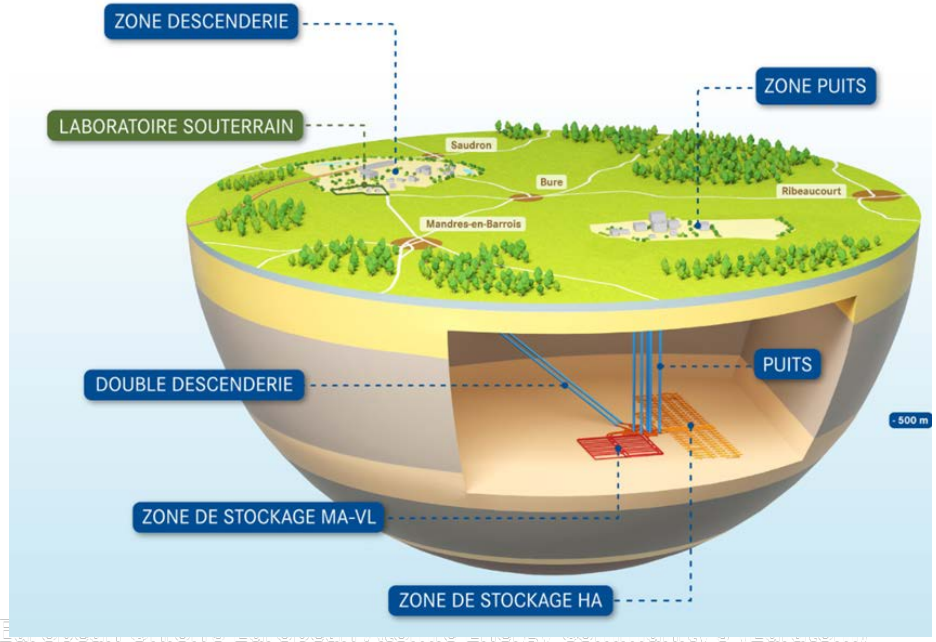


November 2011

Reversibility in Cigéo Project

- Incremental development and progressivity of construction
- Flexibility of operation
- Adaptability with regard to potential changes in spent fuel and waste management policy and strategy)
- Retrievability
- Continuous improvement of knowledge
- Transparency, participation of Society in decision making



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ANDRA

nagra. enresa ONDRAF/NIRAS POSIVA SÚRAO SPRÁVA ÚLOŽIŠŤ RADIOAKTIVNÍCH ODPADŮ

SKB Radioactive Waste Management COVRA NV ANDRA Bundesministerium für Wirtschaft und Technologie

Retrievability of waste packages can be provided to support operational safety, more particularly in accidental situations. Regardless of operational safety needs, it may also be a regulatory requirement in a number of national programs, potentially incorporating consideration of some aging.

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The session addresses scientific and technical knowledge and potential issues associated to the implementation of retrievability as well as relating RD&D axes. This includes the ability to model and monitor the evolution of waste packages and disposal rooms over time during operating period, the technical provisions that can be included in the design to enhance retrievability, the retrieval techniques. Phenomenological processes that may need to be taken into account include temperature increase, desaturation / saturation, gas accumulation, mechanical stresse-strain, corrosion, radiolysis…

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