

Rapporteur feedback slides from EF8 technical break out sessions

Technical topic ‘Technical Issues in Support of Retrievability’

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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.

Summary of working group attendees

- Various countries represented: France, Germany, Spain, Sweden, Finland, Czech Republic, UK, USA...
- Papers/presentations from countries with various stages of programme advancement

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Summary of working group contributions

Presentations:

- Knowledge and experience on Retrievability of SF/HLW waste packages - Phillip Herold, BGE TEC (Germany)
- UK's approach to Retrievability - Neil Carr, RWM (United Kingdom)
- Demonstrator of HLW disposal canister retrieval - Jean-Michel Hoorelbeke, Andra (France)
- Canister retrieval – status of work at SKB - Anni Fritzel, SKB (Sweden)

⇒ Experiences in the field of retrieval technologies:

- Removal of concrete buffer (United Kingdom)
- Removal of bentonite backfill and buffer (Sweden)
- Removal of salt or other material (Germany)
- Retrieval of waste packages (France; Germany; Sweden)

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Summary of working group contributions

Technical discussion:

- Removal techniques of buffer, plugs, seals and backfill
- Retrieval techniques of waste packages within disposal cell
- Knowledge of the phenomenological state of disposal cells
- Management of contamination and/or activation products if any
- Lessons that could be learned on technical aspects from dismantling

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Summary of working group contributions

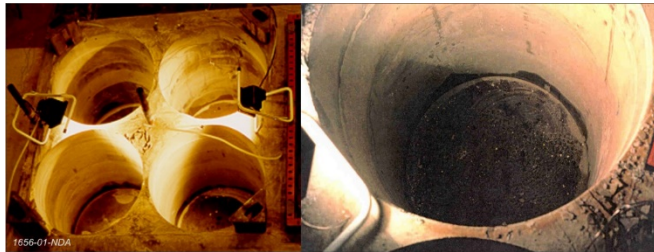
Engineering issues, impact of retrievability on the design

- Current state of art within the field of GDF and dismantling can be used widely
- Retrievability needs more engineering studies than R&D
 - Demonstrator rather than R&D
- Design of retrieval procedure needs to be adapted to:
 - National requirements: from the mitigation of incidental situations [Sweden] to broader reversibility/retrievability legal/regulatory requirements
 - Type of Host rock
 - Radwaste inventory
 - **Conceptual design of the disposal facility: geometry, material, timeschedule etc.**

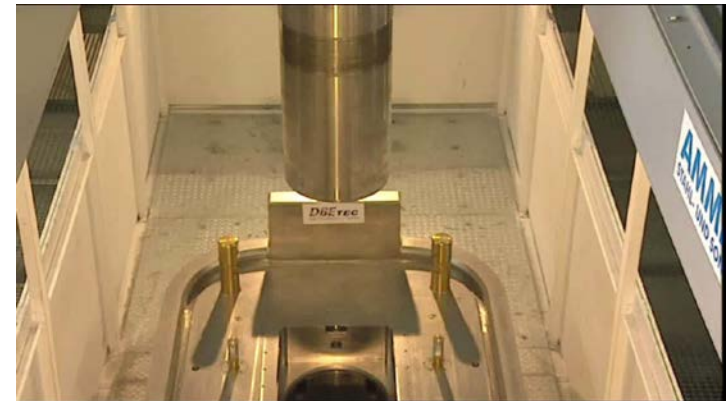
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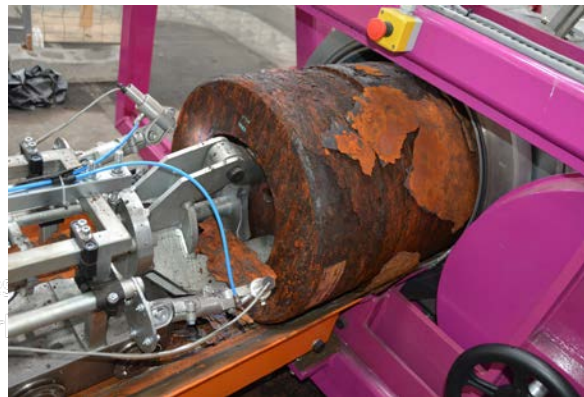
Various technical demonstrators of waste packages retrieval have been implemented in Sweden, United Kingdom, Finland, France and Germany



UK



Germany



France

The research leading to the Seventh Framework

European Atomic Energy Community's (Euratom) agreements n°249396, SecIGD, and n°323260, SecIGD2.

Summary of working group contributions

To be addressed

Safety issues

- Retrieval in nuclear environment
- How to deal with removed contaminated material?
- How to reopen safely retrieved waste packages?
- Operational safety during retrieval
- Definition of safety scenarios leading to retrieval situations

⇒ At minimum: Need for sharing at the international level

Safeguards issues

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Conclusions and suggested way forward

3 suggested next steps:

1. To put together and formalize the current state of art
2. To progress/share together on retrievability scenarios and risk analysis
3. To assess the possibility of a common demonstrator programme within EURAD2 or IGD-TP?

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