



Radioactive Waste Management

Current status of the UK Programme

What can RWM learn from URL Experiments?

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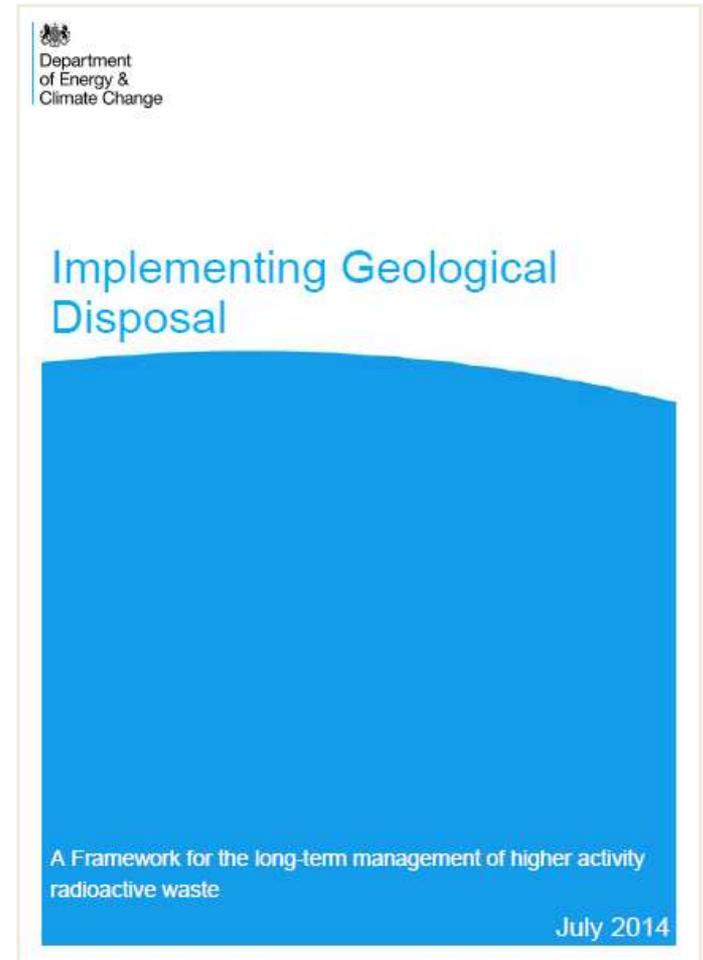
03/06/2015

“Implementing Geological Disposal”

New policy statement published by UK Government in July 2014

Sets out the framework for managing higher activity radioactive waste

Sets out a clear plan and timescales to address some remaining concerns and help communities participate



Geological disposal: making it happen



Making it safe: Office for Nuclear Regulation and environment agencies - independent bodies that will only authorise construction and operation of any facility if the developer can demonstrate that it will be safe, secure and the environment will be protected.



Engagement: Communities can talk to Government and the developer at any time, although formal discussions will only begin in 2016. There will be open dialogue throughout the entire process and a test of public support will be carried out before construction of a geological disposal facility can begin.

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Initial Action: National geological screening

- **The objective of the National Geological Screening exercise is to provide authoritative information that can be used in discussions with communities and may help RWM focus its engagement activities**
- **Screening will:**
 - focus on long-term environmental safety of a GDF
 - draw on the requirements in the existing Disposal System Safety Case
 - consider existing geological information only
- **Screening will not:**
 - definitively rule all areas as either ‘suitable’ or ‘unsuitable’
 - target individual sites
 - select sites
 - replace statutory processes

Geological attributes

Screening will consider

- Rock type
- Groundwater
- Complexity
- Natural processes
- Resources

It will comment on what is known (and not known) about these and what this means for safety



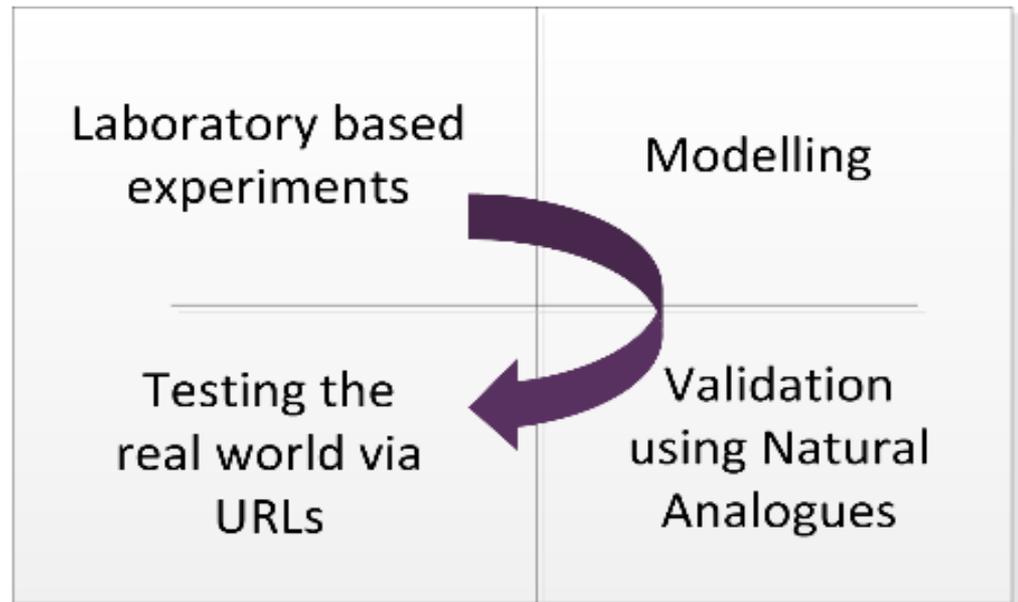
How can URL research help us?

How URL Research Can Help Us?

RWM is seeking to make a step change in the technical maturity of its understanding.

RWM is seeking opportunities to:

- Develop new experiments
- Utilize existing agreements and cooperate with other WMOs
- Work on projects which align with RWM's published Science and Technology Plan (2014)



Examples of how URL Experiments in Äspö can help RWM

Excavation of Tunnel Plugs (DOMPLU)

Sealing of Deep Boreholes

Integration Test II

**A Potential New Experiment on Reactive Metal
(Magnox) Evolution and Gas Production**

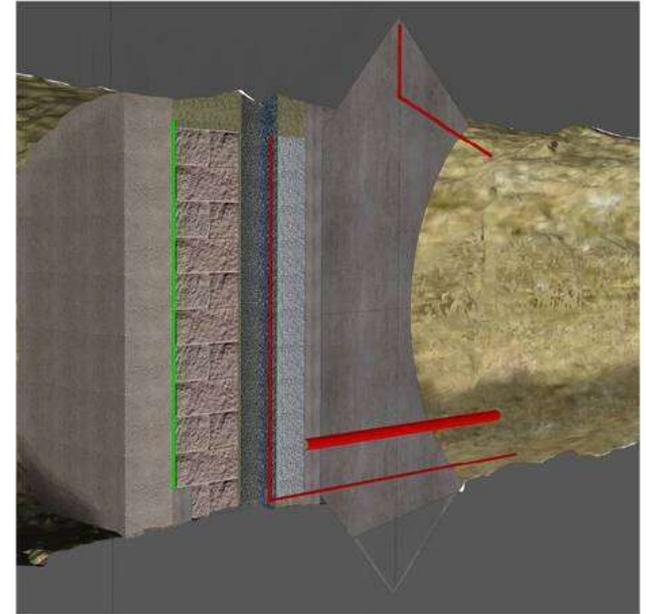
Excavation of Tunnel Plug

Why are RWM interested in this experiment?

- RWM is currently a member of the Demonstration of Plugs and Seals (DOPAS) EC project, where the Dome Plug (DOMPLU) demonstration experiment is being conducted by SKB at Äspö HRL.
- Monitoring and evaluation of DOMPLU are part of the DOPAS EC project.
- Dismantling and subsequent analysis of DOMPLU are not part of the DOPAS EC Project.
- Validation of requirements and performance for plugs and seals.
- Verification of DECOVALEX code for the resaturation of Bentonite.

How could this experiment help RWM going forward?

- RWM must develop designs for low permeability plugs and seals for a GDF in the UK.
- Potentially help with the development of the UK supply chain, by helping with the analysis of DOMPLU material.

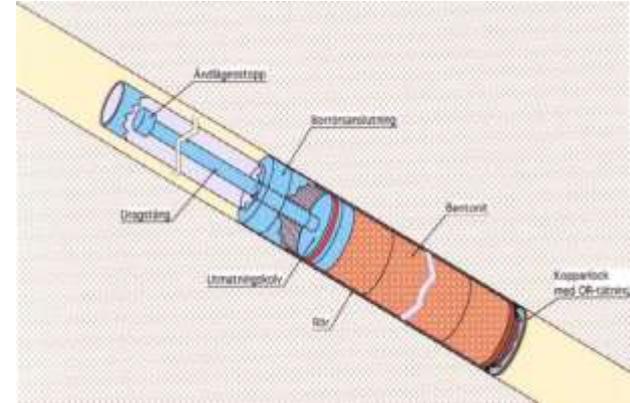


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Sealing of Deep Boreholes

Why are RWM interested in this experiment?

- RWM must submit a planning application for exploratory boreholes prior to beginning site investigation(s).
- Complements work already ongoing by RWM for the sealing of deep investigative boreholes.



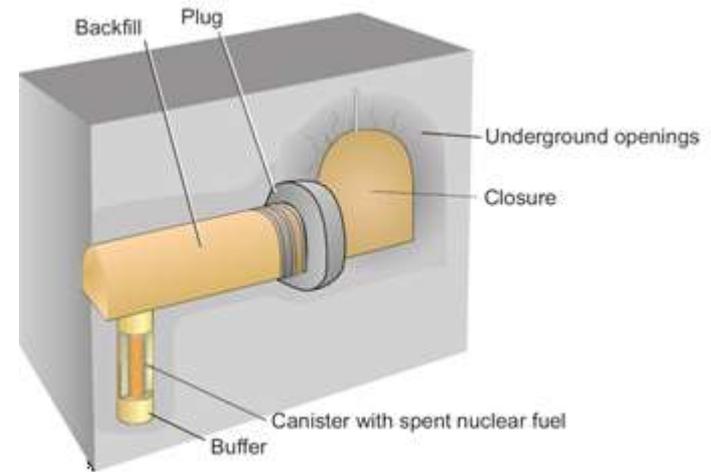
How could this experiment help RWM going forward?

- Validate RWM assumptions made in our Sealing Deep Site Investigation Boreholes work package.
- Provide RWM with feedback from SKBs regulatory interface with regards to sealing deep boreholes in their licence application.
- Assist RWM in producing a methodology for the sealing of deep boreholes and help inform RWMs planning application for site investigation boreholes

Integration Test II

Why are RWM interested in this experiment?

- To gain an understanding of the complexities of integrating a number of sub-systems.
- Provide RWM with more clarity on how to validate the 'initial state' of a GDF to the regulators.
- Provide RWM with more information with regards to conventional safety.



How could this experiment help RWM going forward?

- Help RWM develop a construction method statement.
- Provide RWM with more detailed sequencing and programme information.
- Provide information to feed into the development of future operational research models.
- Assist RWM with the validation of our parametric cost model.

Summary

- International cooperation is a key facet of our research strategy.
- The launch of a policy document in July 2014 hopes to bring new volunteer communities into the siting process by 2016.
- Relationship with WMOs continues to be highly productive.
- RWM is keen to collaborate further with WMOs and our S&T plan identifies the opportunities/work areas that we feel we need to develop.
- In the context of our interests how does the panel feel that RWM can maximise the benefit of developing specific UK experiments in a URL such as Aspo?



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