Common Framework for Addressing Climate Change in Post-Closure Radiological Assessment of Solid Waste Disposal

Working Group 6 Progress
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Tobias Lindborg
SKB, Sweden
Wide recognition that environmental change will affect the radiological impact arising from any eventual releases of radionuclides from waste repositories into the biosphere.

Different approaches available, which are partly complementary, but also hold their own advantages in particular circumstances:

- international recommendations
- national interpretation

All rely on an understanding of likely scenarios for climate change, either to obtain the envelope of relevant analogues or to directly feed into models for system evolution.
The site today
The site with farmlands 5000 AD
The site with no farmlands 20 000 AD
The site submerged after next glaciation?
...or during next glaciation?
Need to Develop a Common Framework for addressing long term Climate Change
Need to Develop a Common Framework for addressing long term Climate Change

But when you go site specific...

- The handling of climate and climate change in safety assessments must be tailor-made depending on assessment questions.

- Due to the uncertain future climate development on these vast time scales, all safety assessments require a range of possible climate scenarios.
WG6 Objectives

Define the key processes which drive environmental change (mainly climate change), and describe how a relevant future may develop on a global scale.

Develop a methodology (conceptual framework) that is valid on a global scale, and show how that can be downscaled to provide information that is needed for site specific assessments.

Apply the conceptual framework to a number of case studies (sites), to illustrate the evolution of site characteristics and the implications for the dose assessment models.
WG6 Sub-Groups

- SG1: Global Climate and Climate Related Processes (led by SKB)

- SG2: Applying Narratives for Relevant Futures to Specific Sites (led by HMGU)

- SG3: Analysing Process Understanding and Confidence (led by SSM)
Participation/Interest

- ONDRAF/NIRAS, Belgium
- BelV, Belgium
- SCK-CEN, Belgium
- FANC, Belgium
- GRS, Germany
- HMGU, Germany
- POSIVA, Finland
- ANDRA, France
- JAEA, Japan
- NUMO, Japan
- NIRS, Japan
- PME, Saudi Arabia
- CIEMAT, Spain
- SKB, Sweden
- SSM, Sweden
- NAGRA, Switzerland
- NDA (RWMD), UK
- ANL, USA

NEW participants welcome this week
Interim Meeting: Stockholm May 2013

- Development of detailed work plans for each sub-group

- Initial ideas for development of WG6 Project Report
  - Methodological guidance document
  - Illustrations of application to different sites
  - Testing confidence in results
This Meeting:

- Review of SG progress and further work
- Dissemination of progress and encourage wider participation
- Identify scope for preparation of scientific publications
- Check links to other Modaria WGs and other cooperation work
- Develop updated WG6 work plan, including hosting of 2014 Interim Meeting