

# **Summary from TM-55074 Second Meeting of the Second Phase of the International Project on Human Intrusion in the Context of Disposal of Radioactive Waste**

**23-27 January 2017**

Documents provided / developed during the meeting are available from <https://share.iaea.org>

## **Presentations**

A. Orrell (IAEA) welcomed the participants and opened the meeting with a presentation about oil drilling near the WIPP repository in the United States. The presentation highlighted the potential for inadvertent human intrusion (IHI) in areas where there are natural resources.

R. Seitz (Chair) provided an overview of the HIDRA Project and the Working Group leads (T. Hjerpe and R. McLeod) summarized the status of work to date. L. Bailey (Co-Chair) gave a presentation on activities related to the safety case at the OECD/NEA. R. Seitz reviewed the Terms of Reference and introduced a number of topical questions and issues that have been identified. R. McLeod provided a presentation on interpretation of “Isolation” for inadvertent human intrusion.

Country presentations were provided by Y. Severe and M. Gallerand from France highlighting the approach for IHI and challenges with modelling radon exposure, respectively. I. Lazar also provided a presentation on the approach applied for IHI in Hungary.

## **Topical Questions and Issues**

A number of topical questions and issues were identified and discussed during the week:

- “Isolation” in the context of IHI

- Concept of “Stylised Scenarios”
- Distinction between inadvertent and deliberate intrusion
- Quantitative or qualitative approaches to address IHI
- Prescriptive or non-prescriptive regulatory approaches (extent of stylization in regulations)
- Worst case, best estimate, random - basis of appropriate assumptions for IHI scenarios
- Role of IHI during the siting phase
- Consideration of water use in IHI scenarios
- Regulatory approach for addressing radon in requirements (e.g. distinguishing between naturally-occurring radon, include or not include radon in all pathways dose)
- Appropriate consideration of non-radioactive hazards for IHI
- Considerations for software and models

Each of these topics is being considered by the Working Groups.

### **Status**

The working groups started developing input for the report prior to the meeting. It was decided that the detailed working group reports would be included as Annexes to the report. A standard format will be developed for a summary of the working group efforts to be included within the body of the report. During the week, the working group efforts focused on applying the HIDRA methods for the hypothetical disposal facilities previously developed by each working group.

A first rough draft of the HIDRA II report was prepared during the week by the Chair and Co-Chair to illustrate the structure of the report. Initial text was developed for the early chapters and bullet lists were prepared for discussions of the topical questions and issues. The draft report was shared with the participants

on Friday morning. The initial ideas for the topical questions and issues were discussed in the closing session on Friday and a number of suggestions were provided by the participants. These suggestions are not yet reflected in the draft text and will be developed over the coming months.

### **Path Forward**

At the Friday closing plenary, the HIDRA Chair and WG leads presented the summary of the activities conducted during the week. The work plans were also discussed. The draft national examples prepared for HIDRA were discussed and L. Bailey and C. Barr will review them and propose a path forward for finalising them for inclusion with the HIDRA II report.

Both working groups have committed to some form of calculations to support practical implementation of the HIDRA methodology. The calculations for the near-surface working group are expected to play a more significant role in the process. Each working group made specific assignments for participant contributions to the report.

### Overall Project Schedule

- Propose path forward for use of Country Examples in project report – L. Bailey, C. Barr (End of February)
- Participants provide feedback on bullet lists for Chapter 7, Topical questions and issues – All Participants (End of March)
- First draft of text for Chapter 7 available for review – R. Seitz, L. Bailey (End of June)
- Working group meetings/discussions – July/August
- Participants provide feedback on Chapter 7 – All Participants (Early August)
- Updated draft text for detailed Working Group Reports – WG Leads (August)
- Geological Working Group meeting (September)

- Co-Chairs and WG Leads meeting (Autumn/Winter 2017)
- Updated draft text for HIDRA II report – R. Seitz, L. Bailey (January 2018)
- Third Plenary Meeting (Tentative 29 Jan – 2 Feb 2018 or May 2018?)

### Working Group Assignments

Near-Surface Working Group (initial drafts by end of March 2017, final inputs by end of June)

- Complete section 8.4.5: Measures/optimisation: for case 1 and 2a (in excel sheet 2b) include description of the approach (Radosveta)
- Restructure report and share for comment (RMcL)
- Example calculations at an appropriate level of detail (Yan, Cyn, Tak)
- Chemical toxicity (examples from different countries: France Yan & Marie;
- Societal Factors: (Stela, Julie)
- Timing of institutional control. Different opinions in different countries. UK (300), USA (100), France (300 near surface, 500 deep geological), JPN (300) KOR (100 Silo / above ground 300)
- Upload Document to Cloud: (RMcL)- inc. HIDRA I, Working group materials.
- Email this presentation and the marked up Ch 8 extract from HIDRA I (RMcL)
- Calculation for Case 2 Drilling (Iuliia)
- How do we use the results from any calculations and does way we present the result depend on the audience (dose/concentration/relative indicators)? (Marie/Amelie)

### Geologic Working Group (Complete by August)

- Perform initial calculations, drilling scenario (Thomas H)
- Restructure the WG report (Thomas H + all)
- Suggestion for updated regulatory guidelines (Thomas B)
- Prepare for the discussion at the WG meeting (all)
- Relative probabilities, footprints (Shizhong)
- Calculations/compartments, Nagra (Jens)
- ST1/deepheat in English (Jarkko)