



Preserving awareness for oversight – towards a resilient system at social level over centuries and millennia

Stephan Hotzel and Benjamin Offen

Federal Office for the Safety of Nuclear Waste Management (BASE), Berlin, Germany

Correspondence: Stephan Hotzel (stephan.hotzel@base.bund.de)

Received: 7 April 2023 - Revised: 17 June 2023 - Accepted: 23 June 2023 - Published: 6 September 2023

Abstract. A resilient system at social level can be understood as one where society, at any point in time, takes responsibility for the repository system and acts to preserve the basic conditions for future generations to take responsibility and responsible decisions. The idea of societal responsibility is included in the notion of oversight, which was introduced by the Nuclear Energy Agency (NEA, 2011) and taken up by the International Commission on Radiological Protection (ICRP, 2013) for its guidance in the field of geological disposal of long-lived radioactive waste. In ICRP (2013) oversight is defined as "'watchful care' [that] refers to society 'keeping an eye' on the technical [repository] system and the actual implementation of plans and decisions". Oversight is a crucial concept in the ICRP's system of radiological protection, since "the level of oversight affects the capability to control the source, i.e. the waste and the repository, and to avoid or reduce potential exposures". Three categories or "levels" of oversight are distinguished: "direct oversight", when the waste is still easily accessible; "indirect oversight", when sections or all of the repository is sealed, and the waste is no longer readily accessible; and "no oversight", when there is no "watchful care" of the repository anymore.

In a collective statement on the preservation of records, knowledge and memory (RK&M), the Radioactive Waste Management Committee (RWMC) of the NEA asserts the relevance of maintaining oversight over geological repositories for as long as practicable and states that there is no intention to abandon geological repositories, either before or after closure. The RWMC adds, "Preparing for future RK&M preservation is best addressed while waste management plans are being designed and implemented, and funding is available for this important component of long-term planning" (NEA, 2014); i.e. it is considered a relevant topic today. But while the RWMC has explicitly adopted the ICRP position on the relevance of maintaining oversight for as long as practicable, some other institutions do not mention oversight in their guidance, leaving the degree to which the guidance mentioned is approved of in the community somewhat open.

While societal decisions on how to organise and exercise post-closure (i.e. "indirect") oversight may be decades away, the discussion on preservation strategies for RK&M has indeed started, a first milestone being NEA (2019). At a recent conference in Dessel, Belgium, organised by the NEA's Expert Group on Awareness Preservation (EGAP), new ideas and aspects were presented. The discussions revealed, however, that participants felt that a "common vision" in the community (meaning both the international expert community and any interested parties) would be beneficial to help focus discussions on RK&M preservation strategies.

At the panel session, it should be discussed – by international experts in the fields of awareness preservation and oversight and the plenary – whether the ICRP and NEA position on oversight could be the conceptual basis for such "vision building" in the community. If so, the original question of what needs to be done today with respect to the preservation of RK&M would be projected onto the question of what needs to be done in the future with respect to organising and exercising post-closure oversight. Hence, the panel session aims to facilitate an exchange on the concept of indirect oversight promoted by the ICRP (2013) and its relation to the preservation of RK&M today.

References

- ICRP: Radiological protection in geological disposal of long-lived solid radioactive waste, ICRP Publication 122, Ann. ICRP, 42(3), http://journals.sagepub.com/doi/pdf/10.1177/ANIB_42_3 (last access: 15 August 2023), 2013.
- NEA: Reversibility and Retrievability (R&R) for the Deep Disposal of High-level Radioactive Waste and Spent Fuel: Final Report of the NEA R&R Project (2007–2011), OECD, Paris, https://www. oecd-nea.org/rwm/rr/documents/RR-Final-Report_GD.pdf (last access: 15 August 2023), 2011.
- NEA: Foundations and Guiding Principles for the Preservation of Records, Knowledge and Memory Across Generations: A Focus on the Post-closure Phase of Geological Repositories – A Collective Statement of the NEA Radioactive Waste Management Committee (RWMC), OECD, Paris, https://www.oecd-nea.org/rwm/ rkm/documents/flyer-A4-rkm-collective-statement-en-2014.pdf (last access: 15 August 2023), 2014.
- NEA: Preservation of Records, Knowledge and Memory (RK&M) Across Generations: Final Report of the RK&M Initiative, OECD, Paris, https://www.oecd-nea.org/upload/docs/ application/pdf/2019-12/7421-rkm-final.pdf (last access: 15 August 2023), 2019.