

# Summary of the Joint IGSC/SITEX Seminar on Regulatory Review of Safety Cases for Geological Disposal of Radioactive Waste

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Lucy Bailey (IGSC Chair, Seminar Chair), Jinfeng Li (NEA)

A safety case is an effective tool for integrating knowledge and understanding to demonstrate the safety of a geological repository. A safety case contains scientific and technical information across various disciplines that may be difficult to understand for local communities and non-technical stakeholders. Regulatory reviews of safety cases are equally challenging and require up-to-date knowledge and experience in various fields and specialisms.

International organisations are recognising these challenges: the NEA Integration Group for the Safety Case (IGSC), Regulators' Forum (RF), Forum on Stakeholder Confidence (FSC), European Pilot Study (EPS) and EC Sustainable network for Independent Technical Expertise of radioactive waste disposal (SITEX) shared their outcomes in a joint IGSC/SITEX workshop.

Experience from the RF, EPS and SITEX highlighted the importance of enhancing regulators' competence and ensuring successful dialogues between regulators and implementers. The EPS issued advisory guidance and expectations for regulatory bodies when evaluating and reviewing a safety case. The SITEX project developed guidance for regulatory review of safety cases at different stages in the development of geological repositories.

On-going knowledge management remains a major challenge for maintaining competence of regulators and improving regulatory review of safety cases. Replacement of retiring staff members requires active effort from the management of regulatory bodies for establishing staff induction and training programmes.

From 2014 onwards, the IGSC has been explicitly addressing the issue of safety case communication and stakeholder engagement, leading to the publication of a report in 2017 and to increased collaboration with the FSC. The SITEX project summarised 3 key factors for the success of a deep geological repository from the community perspective: (1) Community accepts it is safe; (2) Community accepts the need for the facility and recognises that benefits outweigh risks; (3) Community believes it will be kept involved and informed.

Workshop participants discussed the key elements for enhancing safety case communications with civil society. There is a need for early and proactive engagement, starting with various stakeholder perspectives. Ethical and technical considerations of risk are needed to build stakeholder trust. Involvement of various stakeholders in R&D (e.g. monitoring) is an effective way for engagement. Divergent views are unavoidable, so it is necessary to listen and seek to understand each other. Successful communication is a team effort.

International cooperation is valuable for stakeholder communications, especially sharing each others' successes and learning from each others' mistakes. Agreed international safety requirements and radiological protection principles can achieve greater public confidence and assist the dialogue between regulators, implementors and the public.

Substantial and sustainable resourcing for civil society organisations, communities and academia is important to build up competence in order to improve public participation and discussion of R&D and safety case analysis. The challenge is to motivate and sustain engagement, because often only retired people are actively engaged.

Flexibility is essential for dealing with regulatory, technical, financial, social and political uncertainties. It is necessary to perform risk analysis and manage financial risk. Design evolves, but modifications need justification in the context of safety objectives. Reversibility and retrievability are often requested by stakeholders (and in some countries required by regulation) as a means of offering flexibility to future changes, but may have a cost in terms of safety objectives.

The IGSC will continue to share its expertise in all matters of safety case developments and co-operate with other groups at the NEA and other international organisations.