**Integration Group for the Safety Case (IGSC) Symposium 2024***MOVING TOWARDS THE CONSTRUCTION OF A SAFE DGR – GETTING REAL*

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| **Abstract Title:**  **From Generic to Site-specific Safety Cases: Development of Topic Specific Guidance** | |
| **Abstract (300-500 words):**  As countries progress through different stages of their deep geological repository (DGR) programmes, the available information, the interested stakeholders and their requirements, the regulatory requirements, and the purpose of the safety case may change. As a result, various decisions associated with the site, safety concept and repository design may change, too. All these factors will have impacts on safety case work conducted in different countries and at different stages. To provide support for the development of generic safety cases and the transition to site specific safety cases – particularly for member countries in less advanced stages – the Integration Group for the Safety Case (IGSC) has launched the Generic to Site-Specific Safety Cases (GeneSiS) project.  One objective of the GeneSiS project is to produce guidance on the different available approaches to key safety case areas and key considerations and best practices when selecting them at different stages of the repository programme. Consistent definitions were developed for early safety case and related programme stages that informed the development of a questionnaire, which was created for conducting interviews to learn from the positive and negative experiences of countries at different stages of the DGR programme.  The evolution of the repository programme generally follows a fairly consistent set of stages. As part of the GeneSiS project, three safety case stages covering the timeframe of transition from generic to site-specific have been defined. These stages are distinguished, primarily, by the level of maturity of the safety concept and are defined as follows: (i) the pre-concept, where potential host rock types are still being identified and initially understood, and a safety concept for the repository has not yet been established; (ii) the initial concept, where knowledge of the potential host rock types identified in the pre-concept stage and new information from the siting programme allow potential safety concepts for a repository to be developed, albeit to a limited degree of detail, and (iii) the detailed concept, when a sufficient level of site-specific information is available to enable development of site-specific models and designs tailored to the specific geological characteristics and features of the site.  The questionnaire that was subsequently developed addresses key safety case topics, namely the safety concept, requirements management, indicators, features, events and processes (FEPs) and scenarios, modelling approaches and data management, waste acceptance criteria and communication. At the time of writing, interviews have been carried out mostly with organizations from countries with advanced programmes. Responses are being analysed to identify similarities and differences in approaches between countries and programme stages and explore trends in how the different aspects of the safety case evolve as the programme progresses, such as the use of safety functions; results will feed into the guidance document produced by GeneSiS. The poster will reflect and highlight the lessons learnt from the interviewed organisations and depict the integration of the results towards recommendations for the safety case at different stages in the repository programme. | |