**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:**  Submission of the application for authorization to create Cigéo the result of “one generation study“: where do we come from ? where do we stand? | |
| **Abstract (300-500 words):**  On January 16th of 2023, the French National Radioactive Waste Management Agency (Andra) submitted the construction license application (called in French “Demande d’autorisation de création” and named “DAC”) of the French project for the deep geological disposal (DGR) facilities so called “Cigeo”. This is a crucial step marking both a culmination and a new start for the project with the upcoming review by the French Nuclear Safety Authority (“ASN”): Cigeo is getting ready for the initial construction phase and Andra is becoming the operator. The objective is to obtain the construction authorization decree to start the initial construction, the two surface facilities and of the first unit of the underground facility, Cigéo developing gradually by successive units during the operation phase. If Cigéo is designed for a so called “reference radwaste inventory”, “DAC” also includes a demonstration of the adaptability of Cigéo to changes in radwaste inventory linked to possible evolution in French energy policy, based on a so called “reserve radwaste inventory”.  First and foremost, “DAC” is the result of more than 30 years of a step by step and progressive development of Cigéo under regular national and international reviews (e.g. submission on feasibility in 2005, choice of site in 2009, safety options in 2015).  The DAC documentation (23 reports plus many technical, scientific and safety supporting documents) including the safety case report that results on many successive iterations between scientific knowledge, design development and safety assessments that were performed over time. Each one responded to a specific objective connected with a key stage in the gradual development of the DGR: basic reference rules and initial options; license for construction and operation of the French Underground Research Laboratory (Bure URL) in the Callovo-Oxfordian clay formation at the Meuse/Haute-Marne site in the eastern part of Paris basin; feasibility demonstration of DGR in the clay formation within an area about 250 km² around the bure URL; precise siting of the underground facility within this area and location of the above-ground facilities, safety options; license submission for initial construction.  The first part of the paper will explain where the submission of the DAC comes from: how the safety case has evolved according to the progress in the knowledge and the design evolution (sketch, basic design, detailed design) according to the objectives of each key stage. For instance at the DAC stage, the safety case is providing a complete nuclear safety demonstration covering operation, dismantling and closure, and post closure long term. In particular, it defines and deals with accidents that could occur during operation: types of accidents, potential effects, measures for preventing them or reducing their likelihood and their impact… Its provides also the safety demonstration (arguments including the risk and residual uncertainties analysis , performance and impacts assessments of post closure scenarios such as normal evolution, alterated, What-if and inadvertent human intrusion).  The second part of the paper will explainthe current status of the Cigéo project, in particular, how Andra is organized to manage the national review and to prepare the initial construction.  In conclusion, the paper will highlight both the progressive development of Cigéo once it is authorized, and the evolution of Andra organization and skill already engaged to prepare the initial construction, then construct Cigéo, obtain the commissioning authorization and finally start the operation. | |