Methodology of preliminary safety assessments in the site selection procedure in Germany

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In Germany, the site selection for a repository for radioactive waste in deep geological formations was (re-) started in 2017 with the Repository Site Selection Act coming into force. The Site Selection Act envisages preliminary safety assessments as a measure to ensure the safety of a considered site.

The focus of the presentation will be the methodology of the preliminary safety assessments as it is derived from the legal requirements. In this context, the Federal Ministry for Environment, Nature Conservation and Nuclear Safety published the draft of the regulation on the safety requirements for the disposal of high-level radioactive waste in summer 2019. Article 2 of this regulation contains the requirements for the implementation of preliminary safety assessments in the site selection procedure. One essential aspect is the systematical identification and characterization of uncertainties. We will discuss the key features of the handling of uncertainties in the site selection procedure, especially with regard to numerical reactive transport modelling. The German Site Selection Act is divided into several steps with increasing level of detail. The identification and quantification of uncertainties plays a major role to improve quality and plausibility in each step. Well-prepared explorations for instance, need to be addressed in a way to minimise data uncertainties. In addition, the handling of uncertainties in safety assessments on an international level is evaluated.