CURRENT NATURAL ANALOGUE ACTIVITIES IN GERMANY

by

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In 2013 a new site selection act (Standortauswahlgesetz) became operative in Germany. The aim of this act is to find a disposal site for high-level waste in Germany in a scientific based, transparent process. The geological formations rock salt, clay and crystalline rock will be included in this process as potential host rocks. Important elements in the site selection process will be the safety cases for selected potential repository sites/formations. Due to the German requirements for the disposal of heat generating radioactive waste (BMU, 2010) a safety case need to demonstrate that a safe containment of the waste within the so-called containment providing rock zone will be achieved. Therefore, safety concepts are based on the safety functions containment and to some extent retardation. The key barriers providing these safety functions are the geological formation and the geotechnical barriers. Thus, underpinning the integrity of these barriers is crucial and natural and anthropogenic analogues play an important role thereby, beside laboratory experiments and process modelling.

The study introduces the top-down approach used to identify relevant analogue studies to be used in the safety case. For a potential repository in rock salt a systematic analysis was started few years ago and results were presented at NAWG 13 (Wolf et al., 2015). Some new results from additional review work and a new report (Brasser et al., 2014) became available since then. For a potential repository in clay, a similar approach is envisaged, was initiated now and very first ideas are developed.

BMU Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit 2010. Sicherheitsanforderungen an die Endlagerung wärmeentwickelnder radioaktiver Abfälle, Berlin.

Brasser, T., Fahrenholz, C.,Kull, H., Meleshyn, A., Mönig, H., Noseck, U., Schönwiese, D., Wolf, J. 2014. Natürliche Analoga im Wirtsgestein Salz. GRS-365. Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) gGmbH, Braunschweig.

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