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NUCLEAR WASTE STORAGE IN EXCAVATED CAVITIES WITHIN SALT DOMES: POSTULATED PROBLEMS AND THEORETICAL ANALYSES

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1.0 ABSTRACT

A Water - entry accident in an underground repository system for nuclear waste, as well as its consequences, are considered. The repository system consists of excavated cavities, interlinked by a complex system of shafts, galleries and corridors, located within a salt dome in northern Europe. These cavities contain high, medium and low-level radioactive wastes.

The postulated accident involves the precipitous entry of a large quantity of water via a breached vertical shaft within a finite time period. This accident is further postulated to affect each component of the repository system giving rise to physical problems. Sophisticated mathematical formulations of these problems are solved numerically and the results are used to assess the efficacy of waste disposal techniques and options.

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