

CONVERGENT EVOLUTION OF HIGH-LEVEL NUCLEAR WASTE DISPOSAL CONCEPTS IN SWITZERLAND AND JAPAN

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Similarities in the geological environments in Japan and Switzerland and in the constraints placed on their high-level radioactive waste management programmes have resulted in considerable similarity between the repository concepts developed in these countries. Deep (500-1200m) disposal in either sedimentary or crystalline rocks is being considered in parallel. Robust engineered barrier systems have been developed to compensate for difficulties in characterising potential siting areas to the extent desired at the present stage of regional characterisation (Switzerland) or generic studies (Japan). As there is no regulated time cut-off for safety assessments and both lands are characterised by significant tectonic activity, disruptive scenarios such as those resulting from the formation of new major fault zones in the repository vicinity or from uplift and erosion are particular focuses for study. Collaboration between Japanese and Swiss organisations is intensive and includes transfer of experience, joint funding of expensive, large-scale projects (e.g. at underground test sites) and optimisation of repository designs for the expected geological environments of potential host sites.