

Proceedings of the Korean Nuclear Society Autumn Meeting
Seoul, Korea, October 1998

Approaches for the Reference Concept Development of A Deep Geological Repository System

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Abstract

This study addresses the basic approaches and relevant specific activities to develop a reference deep geological repository system with technical feasibility, reasonable cost and long-term safety. The safety philosophy in developing a reference concept is based on the multiple barrier principle, i.e. safety does not depend on the performance of a single barrier. The approaching steps for developing the Korean Reference Disposal System are : selection of reference spent fuel; determination of the basic assumptions and the technical/safety criteria for system design requirements; screening the most promising option by qualitative analysis, comparison and ranking of the proposed repository alternatives with regarding the technical feasibility, the long-term safety and the cost aspects; pre-conceptual design to define a reference repository system.