

Discussion on the behavior of groundwater system around an underground repository

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We discuss about the dynamic movement of subsurface fluids that takes place through the period of artificial disturbance, i.e., from the stage of starting construction to that of closing the disposal site. Some numerical results will be reported. We then describe concept of geochemical modeling of radioactive nuclei transport through fractures or pores of sedimentary rock.

In judging the adaptability of the site for geological disposal, reliable hydro-geological modeling will be of great importance. In the stages of site selection, construction, operation and final closing, accumulation of field data in terms of hydrology, geology, petrophysics, and geochemistry are required, and they should be integrated together in the numerical model. Intensive simulation studies will provide us some objective prediction of long-term safety of the repository. The numerical model should include physical models to express related major processes, such as heterogeneity of rock, fluid and nuclei transport, rock-nuclei interaction, and effect of variation of boundary conditions.

Here, we discuss about the dynamic movement of subsurface fluids that takes place through the period of artificial disturbance, i.e., from the stage of starting construction to that of closing the disposal site. Some numerical results will be reported. We then describe concept of geochemical modeling of radioactive nuclei transport through fractures or pores of sedimentary rock.