

Other Nuclear Waste Initiatives

Nuclear Materials Management Systems

F. Perry (EES-9, fperry@lanl.gov)

Our team is part of a LANL interdivisional assessment of future nuclear fuel cycles. The potential fuel cycles are being evaluated in terms of economics (Technology and Safety Assessment Division), proliferation risk (Nonproliferation and International Security Division), and environmental risk (EES Division). Our role is to assess the impact of alternative spent fuels (which may include waste transmutation) on the performance of future geologic repositories. We are using Goldsim, a probabilistic simulator, to generate simplified performance assessment models, using generic repository designs and alternative waste inventories. We are also assessing relative disposition system performance as a function of waste inventory.

Volcanic Risk Studies for the U.S. and Japanese Repository Programs

F. Perry (EES-9, fperry@lanl.gov)

One possible release mechanism in the geologic storage of high-level radioactive waste is volcanic disruption of the repository. We have assessed the probabilities of such events for potential repositories in both the U.S. and Japan primarily by studying analog volcanic systems, focusing on such things as the hydrothermal and mechanical effects of intrusion of basalts. This project is discussed in detail in the Research Highlights section.