Summary of the Workshop on Engineered Barrier Performance Related to Low-Level Radioactive Waste, Decommissioning, and Uranium Mill Tailings Facilities

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ABSTRACT

In August of 2010, the U.S. Nuclear Regulatory Commission's Offices of *Nuclear Regulatory Research* (RES) and the *Federal and State Materials and Environmental Management Programs* (FSME) organized the *Workshop on Engineered Barrier Performance Related to Low-Level Radioactive Waste, Decommissioning, and Uranium Mill Tailings Facilities*. The workshop was coordinated with the States (e.g., Texas, South Carolina, Utah, Colorado, Washington, and New York) and Federal Agencies (e.g., DOE, EPA, USGS, and DOE National Laboratories).

The workshop facilitated communication among Federal and State regulators, contractors, and selected experts, on current engineered barrier issues and technical and regulatory experiences; lessons learned and new approaches to monitoring and modeling. Recommendations are being compiled and will be presented along with a summary of the workshop. The insights and recommendations from the workshop addressed (i) degradation processes affecting barrier components (e.g., geomembranes, compacted low-permeability soils, surface layer including biotope), (ii) direct and indirect monitoring of both short- and long-term performance processes, (iii) numerical modeling of engineered barrier systems and evaluation of performance monitoring, (iv) model support activities to provide confidence in model predictions for short- and long-term performance, (v) potential improvements to guidance, and (vi) knowledge gaps and future research needs.

Workshop Co-Chairs: Thomas Nicholson (NRC/RES) and Hans Arlt (NRC/FSME)

Workshop Organizing Committee: Susan Jablonski (State of Texas, TCEQ), Craig Benson (Univ. of Wisconsin for DOE-EM), W. Jody Waugh (SM Stoller for DOE-LM), William Albright (Desert Research Institute/Univ. of Nevada), Brian Andraski (USGS), Loren Setlow, Linda Fiedler, and Steven Rock (EPA),
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