

**DRIFT-SCALE THERMO-HYDROLOGIC ANALYSES  
FOR THE PROPOSED REPOSITORY AT YUCCA MOUNTAIN, NV**

**Mark Reeves and Suresh Lingineni \*  
M&O / Intera, Inc.  
101 Convention Center Dr., Suite P-110  
Las Vegas, NV 89109**

Focusing on the near field of a waste package, this paper presents results obtained from a thermo-hydrologic model. Vertically, the conceptual model extends from ground surface to a depth of 1000 m below the water table. Horizontally, it is bounded by the centerlines of two pillars. Inside an assumed circular drift, an invert (backfill) surrounds the waste package. Here, a coarse-grained crushed tuff is assumed to provide a capillary barrier against infiltrating ground water. For comparison, the invert is replaced by intact tuff, corresponding to borehole emplacement.

In further examining the near-field thermo-hydrology of a waste package, the study considers several values of the areal power density together with both nonenhanced and enhanced levels of vapor diffusivity. In order to characterize drift resaturation effects deriving from the latter, the calculations extend to 100,000 years.

The clarity of the coding present in LBL's integrated finite-difference model TOUGH2 has permitted us to make several code changes. For the most part, they expedite convergence on difficult applications. The paper briefly discusses these changes.

---

\* The authors regret that, due to heavy prior commitments, they were unable to complete an extended abstract in time for inclusion in this volume.