

1998-2003

CONSULTANT: Dr. Dani Or

STATEMENT OF WORK: Dr. Dani Or's work will be funded primarily under the TEF KTI of CNWRA work for the U.S. Nuclear Regulatory Commission High-Level Waste Program. Dr. Or will contribute his knowledge and laboratory experience in the physics of unsaturated flow to the evaluation of environmental conditions in and surrounding tunnels in fractured tuffs as the thermal pulse from emplaced radioactive waste is dissipating. Specifically, Dr. Or will help design and participate in laboratory tests that are intended to help CNWRA staff understand the temperature gradients, convective currents, and the movement of moisture associated with the cold trap process. He will also assist in the interpretation of both the CNWRA laboratory results and any Department of Energy laboratory experiments. In addition, Dr. Or will continue his previous efforts to understand the movement of water under ambient and thermally-perturbed conditions along fractures, at fracture intersections, and into tunnel openings. This includes the analysis of temporal and spatial aspects of flow in the Topopah Springs related to the potential for dripping of refluxed or ambient percolation water into subterranean cavities, such as emplacement tunnels. His findings will be presented as stand-alone reports or as contributions to other CNWRA reports.