

STATEMENT OF WORK  
FOR CARL A. STEEFEL

Work for Carl A. Steefel will consist of modeling activities in support of the Evolution of the Near-Field Environment KTI.

Specific activities are anticipated to include:

- use OS3D/GIMRT or other existing computer code capable of solving multicomponent, nonisothermal, reactive mass transport for 1D to 3D problems to simulate flow through a fracture and study fracture/matrix interactions,
- evaluate the effects of interactions between groundwater and cementitious materials on the geochemistry of the near-field environment and on the chemistry of waters which may contact waste canisters,
- determine potential changes in hydraulic properties of geologic media in the near-field of a nuclear waste repository as affected by cement/water interactions,
- determine the sensitivity of the model results to chemical composition of cement blends (e.g., low versus high Ca/Si cement blends) and cement hydraulic properties
- identify important model parameters for which adequate data are lacking

Additional activities may be identified in the future.