May 23, 2002

Dr. English Pearcy, Manager
Geohydrology and Geochemistry Element
Center for Nuclear Waste Regulatory Analyses
6220 Culebra Road, Building 189
San Antonio, Texas 78238-5166

SUBJECT: COMPLETION OF INTERMEDIATE MILESTONE - IM 1402.861.260 (REVISED POTENTIOMETRIC MAP FOR YUCCA MOUNTAIN, NEVADA)

Dear Dr. Pearcy:

The U.S. Nuclear Regulatory Commission staff has completed its review of the subject report, which was sent to us on May 9, 2002. This Center for Nuclear Waste Regulatory Analysis (CNWRA) report is programmatically and technically acceptable for public release. It was sent one day early and provides very timely input to our ongoing issue resolution work. We have just received the US Department of Energy's (DOE) revised Analysis Model Report (AMR) on water levels in the saturated zone. The revised potentiometric map has already substantially contributed to our ongoing AMR review. Specifically, it includes heads from the newest Nye County wells drilled along Fortymile Wash, which DOE has not yet included. The results show a significant increase in hydraulic gradient, and likely a reduction in average permeabilities, for the valley fill sediments south of Nye County well 22S. The revised CNWRA map excludes some of the same wells that also DOE excluded because they are suspected of having perched water conditions. Overall, the CNWRA map provides additional evidence that flow converges on Fortymile Wash from the west and east. The gradient across the Solitario Canyon Fault system is so significant that some component of southeasterly flow likely exists in the tuff aquifers even if aquifer anisotropy has strongly enhanced permeability in the north-south direction. This suggests that the Alluvial Tracer Complex at Nye 19D is ideally placed to evaluate hydraulic characteristics of saturated valley fill along potential pathways from Yucca Mountain.

Under the Key Technical Issue of Unsaturated and Saturated Flow Under Isothermal Conditions, this CNWRA report relates to the subissue of ambient flow in the saturated zone and likely dilution mechanisms. The report focuses on one of our integrated subissues, i.e., 4.2.1.3.8 (Flow Paths in the Saturated Zone) which also is a section of the Yucca Mountain Review Plan.
If you have questions, please contact me at (301) 415-6615.

Sincerely,

Neil Coleman, Program Element Manager
Division of Waste Management
Office of Nuclear Material Safety and Safeguards

Enclosure: As stated

cc: J. Linehan
B. Meehan
B. Sagar, CNWRA

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/RA/
Neil Coleman, Program Element Manager
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cc: J. Linehan
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B. Sagar, CNWRA

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