

August 20, 1999

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

SUBJECT: COMPLETION OF INTERMEDIATE MILESTONE - IM 1402-861-970 - LETTER REPORT "UPDATE OF HYDROLOGIC PARAMETERS FOR TOTAL-SYSTEM PERFORMANCE ASSESSMENT CODE"

Dear Dr. Pearcy:

The U.S. Nuclear Regulatory Commission staff has completed its review of the subject report. It was sent on August 5th, 1999 and was provided well in advance of the August 20th due date. This product is programmatically and technically acceptable for publication and will be placed in our public document room.

The report recommends updates for our Total-System Performance Assessment (TPA) code. It clearly describes the recommended changes and presents sensitivity studies to show the possible effects of the proposed changes on repository performance. One update would add effects of matrix diffusion in the saturated zone, and is based on the growing body of evidence that supports matrix diffusion in tuffs. Another would increase the range of areally averaged infiltration from 1-10 mm/yr to 4-13 mm/yr. A further update would change the subarea thickness of the Calico Hills nonwelded vitric unit. Currently five of seven model subareas have zero thickness for this unit. But borehole data show the unit underlies all seven subareas, although it is thin in places. Sensitivity analysis shows that adding the nonwelded vitric unit can significantly enhance retardation of contaminants in the unsaturated zone. I am aware that this update was recommended after careful interdisciplinary review of data. It serves as a fine example of teamwork by Center staff.

If you have any questions, please contact me at (301) 415-6615.

Sincerely,

NRC FILE CENTER COPY

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

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

Ticket: C-99-093

DISTRIBUTION:

Central File NMSS r/f HLWB r/f DDeMarco DTurner (CNWRA)
WReamer BStiltenpole LHamdan JCiocco

DOCUMENT NAME: S:\DWM\HLWB\NMC\C-99-093.wpd

OFC	HLWB <i>NC</i>		HLWB <i>for</i>		
NAME	NColeman		DBrooks <i>DB</i>		
DATE	8/20/99		8/20/99		

99-118 *1/0*
NH 16
426.1
WM-11

OFFICIAL RECORD COPY

ACNW: YES X NO Delete file after distribution: Yes No X
1) This document should be made available to the PUBLIC *NC* 8/20/99
2) This document is related to the HLW program - place in the LSS *NC* 8/20/99.

9908270100 990820
PDR WASTE
WM-11 PDR