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YUCCA MOUNTAIN - REQUEST FOR ADDITIONAL INFORMATION - SAFETY EVALUATION REPORT, VOLUME 3 - POSTCLOSURE CHAPTER 2.2.1.3.6 - FLOW PATHS IN THE UNSATURATED ZONE, SET 1 - (DEPARTMENT OF ENERGY'S SAFETY ANALYSIS REPORT SECTIONS 2.3.2 AND 2.3.3)

Reference: Ltr, Sulima to Williams, dtd 04/29/09, "Yucca Mountain – Request for Additional Information – Safety Evaluation Report, Volume 3 – Postclosure Chapter 2.2.1.3.6 – Flow Paths in the Unsaturated Zone, Set 1 – (Department of Energy's Safety Analysis Report Sections 2.3.2 and 2.3.3)"

The purpose of this letter is to transmit the U.S. Department of Energy's (DOE) responses to seven (7) of the nine (9) Requests for Additional Information (RAI) identified in the above-referenced letter regarding DOE's License Application Sections 2.3.2 and 2.3.3. Each RAI response is provided as a separate enclosure. The remaining responses from this set are planned to be submitted on or before June 29, 2009.

Most of the DOE references cited in the RAI responses have previously been provided with the License Application (LA), the LA update, or as part of previous RAI responses. The references provided with previous RAI responses are identified within the enclosed response reference sections. Any DOE references cited in the RAI responses, which have not been previously provided to the NRC, are included with this submittal.

There are no commitments in the enclosed RAI responses. If you have any questions regarding this letter, please contact me at (202) 586-9620, or by email to jeff.williams@rw.doe.gov.

Steven E Hombrey (for)

Jeffrey R. Williams, Supervisor
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Office of Technical Management

OTM: CJM-0764

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Enclosures (11):

1. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 2
2. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 4
3. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 5
4. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 6
5. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 7
6. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 8
7. Response to RAI Volume 3, Chapter 2.2.1.3.6, Set 1, Number 3
8. Lin, W.; Blair, S.C.; Wilder, D.; Carlson, S.; Wagoner, J.; DeLoach, L.; Danko, G.; Ramirez, A.L.; and Lee, K. 2001. *Large Block Test Final Report*. Rev. 2. UCRL-ID-132246. Livermore, California: Lawrence Livermore National Laboratory.
9. Sass, J.H.; Lachenbruch, A.H.; Dudley, W.W., Jr.; Priest, S.S.; and Munroe, R.J. 1988. *Temperature, Thermal Conductivity, and Heat Flow Near Yucca Mountain, Nevada: Some Tectonic and Hydrologic Implications.* Open-File Report 87-649. [Denver, Colorado]: U.S. Geological Survey.
10. SNL (Sandia National Laboratories) 2007. *UZ Flow Models and Submodels.* MDL-NBS-HS-000006 REV 03 AD 01 ERD 04. Las Vegas, Nevada: Sandia National Laboratories. ACC: DOC.20090330.0026.
11. Wilder, D.G.; Lin, W.; Blair, S.C.; Buscheck, T.; Carlson, R.C.; Lee, K.; Meike, A.; Ramirez, A.L.; Wagoner, J.L.; and Wang, J. 1997. *Large Block Test Status Report*. UCRL–ID–128776. Livermore, California: Lawrence Livermore National Laboratory.

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Charles Fitzpatrick, Egan, Fitzpatrick, Malsch, PLLC

EIE Document Components:

Enclosure #	File Name	File Size, kB
N/A	001_NRC_Tran_Ltr_3.2.2.1.3.6_Set_1_No_1.pdf	
1 through 7	002_Encls_RAI_2_thru_8_3.2.2.1.3.6_Set_1.pdf	16,141
8	003_1of5_MOL.20080229.0091_UCRL-ID-132246.pdf	21,891
9	004_2of5_MOL.20080229.0091_UCRL-ID-132246.pdf	22,309
10	005_3of5_MOL.20080229.0091_UCRL-ID-132246.pdf	22,104
11	006_4of5_MOL.20080229.0091_UCRL-ID-132246.pdf	24,017
12	007_5of5_MOL.20080229.0091_UCRL-ID-132246.pdf	15,798
13	008_NNA.19890123.0010_USGS_OFR_87-649.pdf	6,361
14	009_DOC.20090330.0026_MDLNBSHS000006_R3A1E4.pdf	2,891
15	010_MOL.19980508.0727_UCRL-ID-128776.pdf	8,295