

May 21, 2007

Mr. Mark H. Williams, Director  
Regulatory Authority Office  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy  
1551 Hillshire Drive  
North Las Vegas, NV 89134-6321

SUBJECT: PRE-LICENSING EVALUATION OF ADDITIONAL INFORMATION NEED ASSOCIATED WITH KEY TECHNICAL ISSUE AGREEMENTS RADIONUCLIDE TRANSPORT 3.05 ADDITIONAL INFORMATION NEED-1, COMMENT 8 ADDITIONAL INFORMATION NEED-1, AND STRUCTURAL DEFORMATION AND SEISMICITY 3.01 ADDITIONAL INFORMATION NEED-2

Dear Mr. Williams:

In a letter dated December 22, 2006, the U.S. Department of Energy (DOE) submitted additional information to the U.S. Nuclear Regulatory Commission (NRC), for Key Technical Issue (KTI) Agreements Radionuclide Transport (RT) 3.05 Additional Information Need (AIN)-1, Comment 8 AIN-1, and Structural Deformation and Seismicity (SDS) 3.01 AIN-2. The DOE letter responded to requests of AIN conveyed in an NRC letter dated April 8, 2005, (Kokajko, NRC, to Ziegler, DOE, "Pre-Licensing Evaluation of KTI Agreements SDS 3.01 AIN; RT 3.05; and Unsaturated and Saturated Flow Under Isothermal Conditions 6.03").

The results of the NRC staff's evaluation of DOE's responses to RT 3.05 AIN-1, Comment 8 AIN-1, and SDS 3.01 AIN-2 are provided in the Enclosure to this letter. NRC considers RT 3.05 AIN-1, and Comment 8 AIN-1 closed. However, the staff has technical concerns about the limited capability to predict flow and transport in fractured unsaturated rock, as evidenced by the necessity to recalibrate system parameters to fit field observations. Although these items are considered closed, please note that NRC will make its final determination on any issue relevant to licensing during review of any potential license application.

For SDS 3.01 AIN-2, the staff considers that no significant attempt was made to relate observed infiltration and seepage data in the fault test to observed fracture patterns (i.e., fracture-inform). This stands in contrast to the approach, implemented previously in the Technical Basis Document No. 3: "Water Seeping into Drifts," Appendix H (Bechtel SAIC Company, LLC, 2003a), to fracture-inform the large plot test. Consequently, the information presented by DOE is inadequate to address SDS 3.01 AIN-2, and the NRC staff considers this AIN open.

Finally, in accordance with 10 CFR 2.390 of NRC's "Rules of General Applicability," a copy of this letter and its enclosure will be available electronically in the NRC Public Document Room or from the Publicly Available Records System Laboratory, a component of NRC's Agencywide Documents Access and Management System (ADAMS). The ADAMS package accession

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number is ML071150064. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions about this matter, please contact Dr. James Rubenstone, of my staff, at (301) 415-5019, or by e-mail, at [jxr5@nrc.gov](mailto:jxr5@nrc.gov).

Sincerely,

**/RA/**

Jack R. Davis, Deputy Director  
Technical Review Directorate  
Division of High-Level Waste Repository Safety  
Office of Nuclear Material Safety  
and Safeguards

Enclosure:  
NRC, NMSS, Review of the DOE Agreement  
Response Related to the Potential Geologic  
Repository at Yucca Mountain, Nevada: KTI  
Agreement to RT 3.05 AIN-1, Comment 8 AIN-1,  
and SDS 3.01 AIN-2

cc: See attached list.

Letter to M. Williams from J. Davis dated: May 21, 2007

cc:

A. Kalt, Churchill County, NV	A. Elzeftawy, Las Vegas Paiute Tribe
R. Massey, Churchill/Lander County, NV	J. Treichel, Nuclear Waste Task Force
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E. von Tiesenhausen, Clark County, NV	R. Murray, DOE/OCRWM
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P. Thompson, Duckwater Shoshone Tribe

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<http://www.nrc.gov/reading-rm/adams.html>.

If you have any questions about this matter, please contact James Rubenstone, of my staff, at (301) 415-5019, or by e-mail, at [jxr5@nrc.gov](mailto:jxr5@nrc.gov).

Sincerely,

**/RA/**

Jack R. Davis, Deputy Director  
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Enclosure:

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cc: See attached list.

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