



Department of Energy
Office of Civilian Radioactive Waste Management
Yucca Mountain Site Characterization Office
P.O. Box 364629
North Las Vegas, NV 89036-8629

QA: N/A

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OVERNIGHT MAIL

Janet R. Schlueter, Chief
High-Level Waste Branch
Division of Waste Management
Office of Nuclear Materials Safety
and Safeguards
U.S. Nuclear Regulatory Commission
Two White Flint North
Rockville, MD 20852

TRANSMITTAL OF INFORMATION ADDRESSING KEY TECHNICAL ISSUE (KTI)
AGREEMENT ITEM STRUCTURAL DEFORMATION AND SEISMICITY (SDS) 3.01

References: (1) Ltr, Schlueter to Ziegler, dtd 5/21/02
(2) Ltr, Williams to Brocoum, dtd 11/19/01

This letter is the response to the U.S. Nuclear Regulatory Commission's (NRC) request for additional information (RAI) in Reference 1 concerning the subject KTI agreement.

SDS 3.01 reads as follows: "DOE responded that for the passive test, any observed seepage will be related to full periphery maps and other fracture data in testing documentation. The documentation will be available by any potential LA. For Niche 3, fracture characterization is complete and a 3-D representation will be included in testing documentation. The documentation will be available August 2001."

Reference 1 states that "The NRC staff requests the documentation to show how, or the methodology to ensure that, actual or expected hydrologic and transport test results were or will be interpreted in light of fracture-fault patterns and lithostratigraphic information in the test volume vicinity."

In a teleconference on June 10, 2002, to discuss this RAI, the U.S. Department of Energy (DOE) and NRC clarified and confirmed the following aspects of the agreement:

1. The NRC staff considers the part of the agreement pertaining to the 3-D representation of Alcove 8 – Niche 3 fracture data "satisfied."

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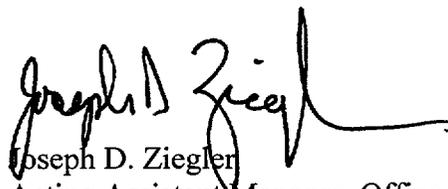
2. DOE will provide the other part of the agreement pertaining to the documentation of seepage observations and fracture data before submittal of the License Application (LA) as originally agreed upon. SDS 3.01, as a whole, would remain as "partially received" until the documentation is delivered and reviewed by the NRC. In this documentation, DOE will consider NRC's recommendation for fracture-informing the Alcove 8 – Niche 3 test, although this is not a requirement by the NRC for a successful LA. If DOE decides to incorporate the fracture data into the Alcove 8 – Niche 3 test model, it will consider using the methodology as follows:

Alcove 8 – Niche 3 tests are being conducted in a series of phases for both the fault (near the small plot) and the large plot. The initial test predictions were conducted using properties from the site-scale unsaturated zone (UZ) flow and transport model. Fracture mapping information for Alcove 8 – Niche 3 is now available (reference 2). The fracture mapping information contains some, but not all, of the information needed to establish hydrogeologic properties of fractures in a fractured rock. The first set of tests is being conducted on the fault. Results from the fault test may be used in combination with the Alcove 8 – Niche 3 fracture mapping data to develop site-specific, calibrated flow and transport models that are fracture-informed. The models calibrated to Alcove 8 – Niche 3 site-specific data may be used to make predictions for subsequent phases of the test. Model calibrations may continue to be updated upon completion of the different test phases.

The results of the Alcove 8 – Niche 3 experiments and modeling may be used to:
(a) validate the Alcove 8 – Niche 3 flow and transport models; i.e., that the general modeling approach is consistent with the results in Alcove 8 – Niche 3 when calibrated to site-specific information; and (b) examine the site-specific model results relative to the range of results based on the uncertainty in site-scale hydrogeologic properties; thus, the use of these data at the site scale may be used to validate the uncertainty in the site-scale UZ flow and transport model.

3. Items 1 through 6 listed on page 2 of the enclosure to Reference 1 are intended to be a checklist to be used by the NRC during its final review of the documentation pertaining to the remaining part of SDS 3.01. They are not specific to the methodology used by DOE to develop the 3-D depiction provided in Reference 2.

This letter contains no new regulatory commitments. Please direct any questions concerning this letter to Eric T. Smistad at (702) 794-5073 or Timothy C. Gunter at (702) 794-1343.



Joseph D. Ziegler
Acting Assistant Manager, Office of Licensing
and Regulatory Compliance

cc:

J. W. Andersen, NRC, Rockville, MD
P. S. Justus, NRC, Rockville, MD
N. K. Stablein, NRC, Rockville, MD
L. L. Campbell, NRC, Rockville, MD
C. W. Reamer, NRC, Rockville, MD
S. L. Wastler, NRC, Rockville, MD
D. D. Chamberlain, NRC, Arlington, TX
R. M. Latta, NRC, Las Vegas, NV
Margaret Chu, DOE/HQ (RW-1), FORS
R. A. Milner, DOE/HQ (RW-2), FORS
S. E. Gomberg, DOE/HQ (RW-2), FORS
A. B. Brownstein, DOE/HQ (RW-52), FORS
N. H. Slater-Thompson, DOE/HQ (RW-52), FORS
R. B. Murthy, DOE/OQA (RW-3), Las Vegas, NV
S. H. Hanauer, DOE/HQ (RW-2), Las Vegas, NV
B. J. Garrick, ACNW, Rockville, MD
Richard Major, ACNW, Rockville, MD
W. D. Barnard, NWTRB, Arlington, VA
Budhi Sagar, CNWRA, San Antonio, TX
W. C. Patrick, CNWRA, San Antonio, TX
Steve Kraft, NEI, Washington, DC
J. H. Kessler, EPRI, Palo Alto, CA
J. R. Egan, Egan & Associates, McLean, VA
R. R. Loux, State of Nevada, Carson City, NV
John Meder, State of Nevada, Carson City, NV
Alan Kalt, Churchill County, Fallon, NV
Irene Navis, Clark County, Las Vegas, NV
George McCorkell, Esmeralda County, Goldfield, NV
Leonard Fiorenzi, Eureka County, Eureka, NV
Andrew Remus, Inyo County, Independence, CA
Michael King, Inyo County, Edmonds, WA
Mickey Yarbrow, Lander County, Battle Mountain, NV
Lola Stark, Lincoln County, Caliente, NV
L. W. Bradshaw, Nye County, Pahrump, NV
David Chavez, Nye County, Tonopah, NV
Josie Larson, White Pine County, Ely, NV
Arlo Funk, Mineral County, Hawthorne, NV
R. I. Holden, National Congress of American Indians, Washington, DC
Allen Ambler, Nevada Indian Environmental Coalition, Fallon, NV
E. P. Opelski, NQS, Las Vegas, NV
N. H. Williams, BSC, Las Vegas, NV
S. J. Cereghino, BSC, Las Vegas, NV
Donald Beckman, BSC, Las Vegas, NV

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cc: (continued)

CMS Coordinator, BSC, Las Vegas, NV
K. M. Cline, MTS, Las Vegas, NV
R. B. Bradbury, MTS, Las Vegas, NV
R. P. Gamble, MTS, Las Vegas, NV
R. C. Murray, MTS, Las Vegas, NV
R. D. Rogers, MTS, Las Vegas, NV
Richard Goffi, BAH, Washington, DC
J. R. Dyer, DOE/YMSCO, Las Vegas, NV
D. G. Horton, DOE/YMSCO, Las Vegas, NV
G. W. Hellstrom, DOE/YMSCO, Las Vegas, NV
S. P. Mellington, DOE/YMSCO, Las Vegas, NV
R. E. Spence, DOE/YMSCO, Las Vegas, NV
J. D. Ziegler, DOE/YMSCO, Las Vegas, NV
W. J. Boyle, DOE/YMSCO, Las Vegas, NV
C. M. Newbury, DOE/YMSCO, Las Vegas, NV
T. C. Gunter, DOE/YMSCO, Las Vegas, NV
E. T. Smistad, DOE/YMSCO, Las Vegas, NV
D. H. Coleman, DOE/YMSCO, Las Vegas, NV
C. L. Hanlon, DOE/YMSCO, Las Vegas, NV
M. C. Tynan, DOE/YMSCO, Las Vegas, NV
J. T. Sullivan, DOE/YMSCO, Las Vegas, NV
G. L. Smith, DOE/YMSCO, Las Vegas, NV
C. A. Kouts, DOE/YMSCO, (RW-2), FORS
R. N. Wells, DOE/YMSCO (RW-60), Las Vegas, NV
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