

February 26, 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: REVIEW OF ADDITIONAL INFORMATION, PROVIDED BY THE U.S.
DEPARTMENT OF ENERGY, ASSOCIATED WITH KEY TECHNICAL ISSUE
IGNEOUS ACTIVITY AGREEMENT 2.11

Dear Mr. Williams:

In a letter dated September 26, 2006, the U.S. Department of Energy (DOE) transmitted a copy of the model report *Inhalation Exposure Input Parameters for the Biosphere Model* (ANL-MGR-MD-000001, Revision 04). The letter describes how the report contains information on the expected airborne mass loadings in the nominal and postvolcanic scenarios, which is relevant to additional information requested by the U.S. Nuclear Regulatory Commission (NRC) for Igneous Activity (IA) Agreement 2.11.

The initial staff concerns documented in IA 2.11 regarded the relationship between the airborne mass loads derived from static measurements and mass loads appropriate for surface-disturbing activities characteristic of the reasonably maximally exposed individual. Although staff agreed with the overall approach in the DOE Environmental Radiation Model for Yucca Mountain, staff had questions about specific aspects of the DOE approach as documented in letter Reamer to Ziegler dated 06/14/2004. The staff requested information on three aspects: (1) the relevance of the analog sites provided to support the parameter ranges used by the DOE to the location of the reasonably maximally exposed individual; (2) whether available data indicating that walking on tephra deposits can produce elevated airborne mass loads was adequately addressed; and (3) whether short term variations in airborne mass loads can be neglected when using 24-hr average data.

The results of the NRC staff evaluation of the DOE response to IA 2.11, Additional Information Needed, are provided in the enclosure to this letter. DOE has provided sufficient information to address staff questions about two of the aspects, the relevance of the analog sites provided to support the parameter ranges used by DOE to the location of the reasonably maximally exposed individual, and whether estimates of short-term airborne mass loads can be approximated using 24-hr average data. However, DOE has not provided sufficient information to address staff questions about data indicating that walking on tephra deposits can produce elevated airborne mass loads. DOE has therefore not provided sufficient information to close IA Agreement 2.11. The NRC staff believes that IA 2.11 needs additional information.

Please note that NRC staff review of the information presented was limited to a determination of

whether the information provided would be adequate to support a detailed technical review. NRC will make its final determination on any issues relevant to licensing during review of any potential license application.

NRC would also like to note that the DOE letter dated September 26, 2006, misquotes the NRC need for additional information. Staff does not expect "...DOE to evaluate the overall maximally exposed individual used in the performance analysis." The relevant statement from the enclosure to our letter of 6/14/2004 (Reamer to Ziegler) is..."Staff expects DOE to evaluate the overall effect of these sometimes offsetting processes on airborne mass loads to show a transparent linkage exists between potential analog sites and the characteristics of the reasonably maximally exposed individual used in the performance analysis."

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 component of NRC's document system Agencywide Documents Access and Management System (ADAMS). The ADAMS package accession number is ML070330252. 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 James Rubenstone, of my staff, at (301) 415-5019, or by e-mail, at 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 Responses
Related to the Potential Geologic
Repository at Yucca Mountain,
Nevada: Key Technical Issue
Agreements to Igneous Activity
2.11 Additional Information Need

cc: See attached list.

Letter to M. Williams from J. Davis dated: February 26, 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
I. Navis, Clark County, NV	W. Briggs, Ross, Dixon & Bell
E. von Tiesenhausen, Clark County, NV	R. Murray, DOE/OCRWM
G. McCorkell, Esmeralda County, NV	G. Runkle, DOE/Washington, D.C.
R. Damele, Eureka County, NV	S. Bokhari, DOE/RW
L. Marshall, Eureka County, NV	S. Gomberg, DOE/Washington, D.C.
A. Johnson, Eureka County, NV	D. Curran, Harmon, Curran, Spielberg & Eisenberg, L.L.P.
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E. Hiruo, Platts Nuclear Publications

G. Hernandez, Las Vegas Paiute Tribe

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J. Leeds, Las Vegas Indian Center

J. C. Saulque, Benton Paiute Indian Tribe

C. Bradley, Kaibab Band of Southern Paiutes

R. Joseph, Lone Pine Paiute-Shoshone Tribe

L. Tom, Paiute Indian Tribes of Utah

E. Smith, Chemehuevi Indian Tribe

D. Buckner, Ely Shoshone Tribe

V. Guzman, Walker River Paiute

D. Eddy, Jr., Colorado River Indian Tribes

M. Boyd, Public Citizen

J. Wells, Western Shoshone National Council

D. Crawford, Inter-Tribal Council of NV

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of whether the information provided would be adequate to support a detailed technical review. NRC will make its final determination on any issues relevant to licensing during review of any potential license application.

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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 Responses
 Related to the Potential Geologic
 Repository at Yucca Mountain,
 Nevada: Key Technical Issue
 Agreements to Igneous Activity
 2.11 Additional Information Need

cc: See attached list.

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