

August 4, 2004

Mr. Joseph Ziegler, Director
Office of License Application and Strategy
U.S. Department of Energy
Office of Repository Development
1551 Hillshire Drive
North Las Vegas, NV 89134-6321

SUBJECT: PRE-LICENSING EVALUATION OF PRECLOSURE KEY TECHNICAL ISSUE
AGREEMENT 7.02 RELATED TO THE WASTE PACKAGE FINITE ELEMENT
ANALYSIS

Dear Mr. Ziegler:

In a letter dated December 10, 2003, the U.S. Department of Energy (DOE) submitted information to address Preclosure (PRE) Key Technical Issue (KTI) Agreement 7.02. The agreement between DOE and the U.S. Nuclear Regulatory Commission (NRC) was reached during the Preclosure Safety Technical Exchange and Management Meeting held from July 24-26, 2001. DOE's transmittal letter requested NRC to close PRE 7.02 based upon the information provided in the transmittal.

The agreement states:

“Provide the waste package finite element analysis based numerical simulations that represent a significant contribution to DOE's safety case. Provide documentation demonstrating that a sufficient finite element model mesh discretization has been used and the failure criterion adequately bounds the uncertainties associated with effects not explicitly considered in the analysis. These uncertainties include but are not limited to: (1) residual and differential thermal expansion stresses, (2) strain rate effects, (3) dimensional and material variability, (4) seismic effects on ground motion, (5) initial tip-over velocities, and (6) sliding and inertial effects of the waste package contents, etc. In addition, document the loads and boundary conditions used in the models and provide the technical bases and/or rationale for them. DOE agreed to provide the information. The information will be available in FY03 and documented in the Waste Package Design Methodology Report.”

The NRC determined that DOE's response contained sufficient information for NRC to close PRE 7.02, and it is therefore now closed. Additionally, NRC identified information pertaining to the implementation of the finite element analysis methodologies not originally contemplated during the preclosure safety technical discussions. This information may be needed during the review of a potential license application to gain reasonable assurance that the waste package

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will perform its intended function. NRC staff comments related to the implementation of DOE's finite element analysis within the response to PRE 7.02 are enclosed.

If you have any questions regarding this matter, please contact Tim Kobetz, at (301) 415-5170 or by e-mail to TJK1@nrc.gov.

Sincerely,

/RA/

C. William Reamer, Director
Division of High-Level Waste Repository Safety
Office of Nuclear Material Safety
and Safeguards

Enclosure:

NMSS Review of DOE KTI Agreement Response to PRE 7.02 for a Potential Geologic Repository at Yucca Mountain, NV, Project No. WM-00011

cc: See attached list

Letter to J. Ziegler from C.W. Reamer, dated: August 4, 2004

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	M. Chu, DOE/Washington, D.C.
G. McCorkell, Esmeralda County, NV	G. Runkle, DOE/Washington, D.C.
L. Fiorenzi, Eureka County, NV	C. Einberg, DOE/Washington, D.C.
A. Johnson, Eureka County, NV	S. Gomberg, DOE/Washington, D.C.
A. Remus, Inyo County, CA	W. J. Arthur, III , DOE/ORD
M. Yarbro, Lander County, NV	R. Dyer, DOE/ORD
S. Hafen, Lincoln County, NV	J. Ziegler, DOE/ORD
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J. Pegues, City of Las Vegas, NV	J. Birchim, Yomba Shoshone Tribe
M. Murphy, Nye County, NV	R. Holden, NCAE

cc: (Continued)

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C. Marden, BNFL, Inc.

J. Bacoeh, Big Pine Paiute Tribe of the Owens Valley

P. Thompson, Duckwater Shoshone Tribe

T. Kingham, GAO

D. Feehan, GAO

E. Hiruo, Platts Nuclear Publications

G. Hernandez, Las Vegas Paiute Tribe

K. Finrock, NV Congressional Delegation

P. Johnson, Citizen Alert

A. Capoferri, DOE/ Washington, DC

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D. Vega, Bishop Paiute Indian Tribe

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J. Leeds, Las Vegas Indian Center

J. C. Saulque, Benton Paiute Indian Tribe

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D. Crawford, Inter-Tribal Council of NV

I. Zabarte, Western Shoshone National Council

S. Devlin

G. Hudlow

D. Irwin, Hunton & Williams

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