



Department of Energy  
Washington, DC 20585

FEB 2 1993

Dr. Dade Moeller  
Chairman  
Advisory Committee on Nuclear Waste  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Dear Dr. Moeller:

On October 22 and 23, 1992, the Yucca Mountain Site Characterization Project Office staff was pleased to have the opportunity to provide the Advisory Committee on Nuclear Waste (ACNW) with a tour of the Geographic Information System and Remote Sensing Laboratory facility, demonstrate the use of the technical databases, and escort the ACNW and their staff members on a field trip to Yucca Mountain, Nevada. The field trip included a briefing and discussion at the proposed location of the Exploratory Studies Facility (ESF) north portal. During the field trip, questions were raised regarding a fault exposed in bedrock at the drill pad west of Trench MWV-T5 (the long trench). These questions included the recency of movement and the age of the pad fault, its effect on the proposed location of surface facilities in Midway Valley, and the status of investigations to determine potential seismic hazards related to the pad fault. This letter is in response to those concerns.

ESF Design for Strong Ground Motion:

A preliminary analysis of the ground support components and portal opening was completed for the Phase IA ESF design package. The results suggested that only minimal damage will occur with ground motions up to 0.75g. This value is probably conservative for expected future earthquakes in any of the faults in and adjacent to Yucca Mountain. Investigations are currently underway to determine the design basis earthquake for an engineered structure at Yucca Mountain. For your reference, a copy of the design analysis for seismic considerations from the Phase IA ESF design package is enclosed.

Potential for Surface Faulting at ESF North Access Area:

There is no topographic expression of the fault on the hillslope nor any other direct evidence (e.g., offset colluvium) for recent displacements on the fault near the pad. In addition, the referenced pad fault projects toward trench MWV-T5, but is nowhere expressed in the upper Quaternary colluvial deposits exposed in the trench. This is evidence that the most recent movement on the fault occurred more than several hundreds of thousands of years ago. Thus, the likelihood of movement during the operational phase of the proposed repository is extremely low.

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Surface Facilities for the ESF

The facilities are all considered temporary at this time and will be redesigned, if necessary, to meet repository requirements. Any damage from an earthquake would be expected to be minimal.

We look forward to the opportunity to discuss this matter in more detail with the ACNW and their staff.

If you have any questions in this regard, please contact either April V. Gil at (702) 794-7622 or Sharon Skuchko of my office at (202) 586-4590.

Sincerely,



John P. Roberts  
Acting Associate Director for  
Systems and Compliance  
Office of Civilian Radioactive  
Waste Management

Enclosure:

Raytheon Services Nevada Report,  
ST-MN-216, Revision 0, "Seismic  
Effects on Stability of Portal  
Opening"

cc w/Enclosure: *on the shelf*  
C. Gertz, YMPO  
T. J. Hickey, Nevada Legislative Committee  
R. Loux, State of Nevada  
M. Baughman, Lincoln County, NV  
J. Bingham, Clark County, NV  
B. Raper, Nye County, NV  
P. Niedzielski-Eichner, Nye County, NV  
G. Derby, Lander County, NV  
P. Goicoechea, Eureka, NV  
C. Schank, Churchill County, NV  
F. Mariani, White Pine County, NV  
V. Poe, Mineral County, NV  
E. Wright, Lincoln County, NV  
J. Pitts, Lincoln County, NV  
R. Williams, Lander County, NV  
J. Hayes, Esmeralda County, NV  
B. Mettam, Inyo County, CA  
J. J. Holonich, NRC  
H. J. Larson, ACNW  
G. N. Gnugnoli, ACNW