December 12, 1994

0294

Mr. Ronald A. Milner, Associate Director
for Program Management and Integration
Office of Civilian Radioactive
Waste Management
U.S. Department of Energy, RW 30
1000 Independence Avenue
Washington, DC 20585

SUBJECT: NRC EVALUATIONS OF DOE RESPONSES TO NRC COMMENT AND QUESTIONS ON STUDY PLAN 8.3.1.17.4.3, "QUATERNARY FAULTING WITHIN 100 KM OF YUCCA MOUNTAIN, INCLUDING THE WALKER LANE"

Dear Mr. Milner:

The NRC staff have reviewed the DOE responses, dated August 10, 1994, to the NRC comment and the two questions on Study Plan 8.3.1.17.4.3.

The staff found that the DOE responses were not complete and did not address the observations stated in the cover letter to Mr. D. Shelor, dated, September 2, 1993.

With respect to Comment 1, dealing with the geophysical survey, our evaluation of the DOE response is enclosed. Regarding the DOE responses to the two questions, the staff considers that the DOE responses are adequate and the evaluations are also enclosed.

If you have any questions, please contact Abou-Bakr Ibrahim at (301) 415-6651.

Sincerely,

Michael J. Bell, Chief
Engineering and Geosciences Branch
Division of Nuclear Material Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Enclosures: As stated

cc: See Attached List

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CC List for R. Milner letter, dated _____.

cc: R. Loux, State of Nevada
J. Meder, Nevada Legislative Counsel Bureau
R. Nelson, YMPO
M. Murphy, Nye County, NV
M. Baughman, Lincoln County, NV
D. Bechtel, Clark County, NV
D. Weigel, GAO
P. Niedzielski-Eichner, Nye County, NV
B. Mettam, Inyo County, CA
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Comment 1:

The June 29, 1992, Magnitude 5.6 Little Skull Mountain Earthquake was approximately 20 km southeast of the center of the proposed perimeter drift outline. The areal extent of the geophysical surveys shown on Figure 2.2-1, does not appear to be sufficient to encompass the Little Skull Mountain Region.

Evaluation of DOE Response:

- DOE stated that because there was no surface rupture associated with this earthquake, it is unlikely that shallow-looking geophysical methods would identify and characterize the responsible fault. On the contrary, one of the major objectives of high resolution seismic reflection methods is to identify buried faults. Aftershock studies combined with reflection data would provide the necessary information for characterizing the geologic structure responsible for this earthquake. A good knowledge about the length of this fault will reduce the uncertainty and enhance our understanding of the seismic hazards at Yucca Mountain.

- Recently, DOE acquired seismic reflection data at Yucca Mountain. Preliminary processing of the data showed good reflections in the first few seconds of the section. A well designed experiment like that would provide the information needed at Little Skull Mountain area.

Recommendation:

The staff recommends that DOE should consider extending the areal extent of the geophysical surveys to cover the Little Skull Mountain area.

Question 1:

What are the criteria for identifying faults or lineaments that have the potential for producing significant ground motion at the site?

Evaluation of DOE Response:

- DOE states that it will examine faults and lineaments data that will produce significant ground motion, and will provide an estimate of their recurrence interval. Seismic hazard analysis will also provide a means to identify those specific lineaments and faults that will contribute significantly to the hazard.

Status:

The NRC staff considers that this question has been resolved.

Question 2:

Why haven't there been any previous shallow seismic reflection (mini-sosie) surveys referenced in the Study Plan, and how will the new lines, described in the Study Plan, be correlated with existing information?

Evaluation of DOE Response:

- The staff agrees with DOE that Harding (1988), was referenced on page 3-5; this reference should have also been mentioned under Section 3.2.1.5, "Evaluate nature of Betty Scarp", page 3-11.

Status:

The NRC staff considers that this question has been resolved.