

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

DISTRIBUTION: *w/enc1
Central File* DWM r/f* JGreeves JSurmeier* JAustin
MFederline JHolonich NMSS r/f* ENGB r/f* JThoma
On-Site Rep PUBLIC LSS CNWRA MDelligatti
DOCUMENT NAME: S:\DWM\ENGB\AKI\SPI * See Previous Concurrence

OFC	ENGB*		ENGB*		ENGB		
NAME	AIbrahim/wd		KMcConnell		MBell		
DATE	12/08/94		12/08/94		12/12/94		

OFFICIAL RECORD COPY

ACNW: YES NO
IG : YES NO Delete file after distribution: Yes No
LSS : YES NO

1400
9412140166 941212
PDR WASTE
WM-11 PDR

102.8
wm-11
N/A/16/1

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

DISTRIBUTION: *w/enc1
 Central File* DWM r/f* JGreeves JSurmeier* JAustin
 MFederline JHolonich NMSS r/f* ENGB r/f* JThoma
 On-Site Rep PUBLIC LSS CNWRA MDelegatti
 DOCUMENT NAME: S:\DWM\ENGB\AKI\SPI * See Previous Concurrence

OFC	ENGB*		ENGB*		ENGB			
NAME	AIbrahim/wd		KMcConnell		MBell			
DATE	12/08/94		12/08/94		/ /94			

OFFICIAL RECORD COPY

ACNW: YES NO
 IG : YES NO Delete file after distribution: Yes No
 LSS : YES NO

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
 V. Poe, Mineral County, NV
 F. Mariani, White Pine County, NV
 R. Williams, Lander County, NV
 L. Fiorenzi, Eureka County, NV
 J. Hoffman, Esmeralda County, NV
 C. Schank, Churchill County, NV
 L. Bradshaw, Nye County, NV
 W. Barnard, NWTRB
 R. Holden, NCAI
 E. Lowery, NIEC
 S. Brocoum, YMPO

DISTRIBUTION: *w/enc1
 Central File* DWM r/f* JGreeves JSurmeier* JAustin
 MFederline JHolonich NMSS r/f* ENGB r/f* JThoma

DOCUMENT NAME:s:\dwm\engb\aki\spi

OFC	ENGB	ENGB	ENGB				
NAME	Aibrahm/wd	KMcConnell	MBETT				
DATE	12/8/94	12/08/94	12/08/94				

OFFICIAL RECORD COPY

ACNW: YES NO
 IG : YES NO Delete file after distribution: Yes No
 LSS : YES NO

CC List for R. Milner letter, dated December 12, 1994.

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
V. Poe, Mineral County, NV
F. Mariani, White Pine County, NV
R. Williams, Lander County, NV
L. Fiorenzi, Eureka County, NV
J. Hoffman, Esmeralda County, NV
C. Schank, Churchill County, NV
L. Bradshaw, Nye County, NV
W. Barnard, NWTRB
R. Holden, NCAI
E. Lowery, NIEC
S. Brocoum, YMPO

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:

- o 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.
- o 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.

Enclosure

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:

- o 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:

- o 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.