

Mr. Dwight E. Shelor, Associate Director
for Systems and Compliance
Office of Civilian Radioactive Waste Management
U. S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585

MAR 11 1994

0175

Dear Mr. Shelor:

SUBJECT: SUMMARY OF THE FEBRUARY 1-2, 1994, SITE VISIT ON THE EROSION TOPICAL REPORT

The purpose of this letter is to transmit the summary for the February 1-2, 1994, U.S. Nuclear Regulatory Commission/U.S. Department of Energy (DOE) site visit on the "Evaluation of the Potentially Adverse Condition 'Evidence of Extreme Erosion During the Quaternary Period' at Yucca Mountain, Nevada" (Erosion Topical Report). The site visit was also attended by representatives of the State of Nevada and Nye and Clark Counties, Nevada. The purpose of the site visit was to discuss the NRC staff's preliminary questions related to the topical report and to visit specific locations/features relevant to the staff's preliminary concerns.

If you have any questions regarding this letter or the site visit summary, please contact Ms. Charlotte Abrams of my staff at (301) 504-3403.

Sincerely,

Original Signed by *Kenneth R. Holonich*
for Joseph J. Holonich, Director
Repository Licensing and Quality Assurance
Project Directorate
Division of High-Level Waste Management
Office of Nuclear Material Safety
and Safeguards

Enclosure: As stated

cc: R. Loux, State of Nevada
T. J. Hickey, Nevada Legislative Committee
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
L. Schank, Churchill County, NV
L. Bradshaw, Nye County, NV

See next page for distribution.

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| OFC | HLPD | HLPD | E | | | | |
| NAME | CAbrams/wd | JHolonich | | | | | |
| DATE | 3/6/94 | 3/11/94 | | | | | |

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DISTRIBUTION FOR LETTER TO DWIGHT E. SHELOR FROM JOSEPH J. HOLONICH, SUBJECT:
"SUMMARY OF THE FEBRUARY 1-2, 1994, SITE VISIT ON THE EROSION TOPICAL REPORT"

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SUMMARY OF U.S. NUCLEAR REGULATORY COMMISSION AND
U.S. DEPARTMENT OF ENERGY SITE VISIT ON THE
EROSION TOPICAL REPORT

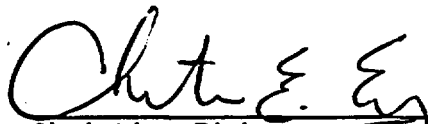
On February 1-2, 1994, representatives of the Nuclear Regulatory Commission, U.S. Department of Energy (DOE), State of Nevada Nuclear Waste Project Office, City of Las Vegas, and Nye and Clark Counties, Nevada, participated in a site visit on the topic of the report, "Evaluation of the Potentially Adverse Condition 'Evidence of Extreme Erosion During the Quaternary Period' at Yucca Mountain, Nevada" (Erosion Topical Report). The purpose of the site visit was to discuss the contents of the DOE topical report and the NRC staff's preliminary questions developed during its review of the topical report, and to visit relevant sample locations in the field. The site visit agenda is included as Attachment 1 and the list of attendees is Attachment 2 to this summary.

The site visit featured discussions at specific locations and/or features relevant to the NRC staff's preliminary review concerns. Participants visited various locations at Yucca Mountain and in its vicinity where authors of the DOE topical report discussed dating methods, calibration methods, mapping, and sampling of deposits of tuff and basalt. Presentations were focused on areas discussed in the report that NRC staff had requested to examine. Technical presenters representing DOE included Principal Investigators from the U.S. Geological Survey and Los Alamos National Laboratory. During the presentations, all attendees were provided an opportunity to ask questions.

Closing comments were provided by representatives of the State of Nevada, Nye County, and NRC. The State commented that it believed DOE had failed to fully understand how to evaluate extreme erosion from a regulatory perspective and found the report to be short of data. Representatives of the State and Nye County agreed with comments made by the NRC staff in its letter of December 30, 1993 (Youngblood to Shelor), which was transmitted to DOE prior to the site visit. NRC staff stated that the surficial deposits map discussed on the site visit represented the type of map necessary to support the topical report. The NRC staff also requested that data used in support of conclusions made in the report be transmitted to the NRC.

After the requested data is received and has been reviewed, the NRC staff plans to follow-up the site visit with a letter presenting the results of the review of the Erosion Topical Report.

 3/8/94
Charlotte Abrams, Sr. Proj. Mgr.
Repository Licensing and Quality
Division of High-Level Waste
Management
Office of Nuclear Material
Safety and Safeguards
U.S. Nuclear Regulatory Commission

 3/8/94
Christian Einberg
Regulatory Integration Branch
Office of Civilian Radioactive
Waste Management
U.S. Department of Energy

**ITINERARY
SITE VISIT FOR EROSION TOPICAL REPORT TOPICS
FEBRUARY 1-2, 1994#**

Tuesday, February 1, 1994

| | |
|------------------|--|
| 6:00 a.m. | Depart Beatty, Nevada |
| 6:35 | Arrive at Steve's Pass for overview of visit introduction of trip organizers and opening remarks |
| 7:00 | Depart for Solitario Canyon through Crater Flat |
| 7:45 | Solitario Canyon to visit and discuss: Oldest dated boulder deposit on west slope of Yucca Mountain (YMW-3); Reference Figure 4 of Topical Report (TR) [requires 1-1.5 hour hike from vehicles to deposit and back; moderately strenuous] |
| 10:45 | Drive to Trench through Solitario Canyon fault (SCFT-2) |
| 11:05 | Discuss thick carbonate deposits and pediment surface at SCFT-1 (also carbonate deposits and pediment surface, if time allows) |
| 11:45 | Drive to Trench CF-1 |
| 11:55 | Discuss exposure of alluvium at CF-1 |
| 12:15 | Drive to NTS Gate 510, via Steve's Pass (LUNCH will be during drive to Gate 510 or as opportunity allows) |
| 1:00 | Badging at NTS Gate 510 |
| 1:15 | Drive to Field Operations Center (FOC) |
| 1:30 | Break at FOC |
| 1:45 | Drive to Yucca Mountain |
| 2:15 | East Flank of YM to visit and discuss: - Hillslope boulder deposits on Boundary Ridge (YME-2); Reference Figure 5 of TR |

- 2:50 - Hillslope boulder deposit at head of Abandon Wash (YME-1) Reference figures 3 and 5 of TR; [1 hour hike to deposit and back]
- 4:15 - Discussion of Sand Ramp History in area
- 4:30 Drive to Mercury or Gate 510
- 5:15 Exit Gate 510

Participants will be expected to provide their own lunches and beverages on both days of the visit. Water will be available.

**ITINERARY
DOE/NRC SITE VISIT FOR EROSION TOPICAL REPORT TOPICS
FEBRUARY 1-2, 1994**

Wednesday, February 2, 1994

| | |
|--------------|--|
| 6:00 | Breakfast at Mercury Cafeteria (for those persons lodging in Mercury) |
| 6:15 | Badging at Gate 510 for those traveling from Beatty |
| 6:30 | Drive to Skull Mountain |
| 7:00 | Meet at Skull Mountain, SKM 1 and SKM 3 for overview of varnish deposits from road; Reference Figure 6 in TR. |
| 7:30 | Drive to Little Skull Mountain |
| 7:40 | Little Skull Mountain Pass to visit and discuss cross section of hillslope colluvial boulder deposit (LSM-1); reference Figure 5 of TR |
| 8:20 | Drive to Forty Mile Wash vista |
| 8:40 | Forty Mile Wash to discuss Tertiary and Quaternary geologic history |
| 8:55 | Drive to Forty Mile Wash rim |
| 9:05 | Forty Mile Wash to discuss Tertiary and Quaternary geologic history [10 minute walk]; Reference Figure 13 in TR |
| 9:50 | Drive to Coyote Wash |
| 10:00 | Coyote Wash to visit and discuss canyon cutting and Holocene geologic history |
| 10:50 | Drive to Jake Ridge |
| 11:15 | Jake Ridge to visit and discuss 1984 erosion event and role of infrequent erosion events on landscape |
| 11:45 | Drive to Buckboard Mesa [LUNCH will be eaten during drive to Buckboard Mesa or as opportunity allows.] |
| 1:20 | Buckboard Mesa to visit and discuss oldest dated hillslope colluvial boulder deposits in Yucca Mountain area (BM-1) and upper Forty Mile Canyon History (1 hour hike to deposit and back); Reference Figures 5 and 10 from TR |
| 3:20 | Depart for wrap-up session in Mercury or TBD |

- 4:10 Wrap-up Session (location TBD)
- NRC staff available to answer questions related to preliminary comments on the TR.
 - Questions and comments from State and affected Counties
 - DOE closing remarks
- 5:15 Depart for Mercury Gate 100, return NTS badges, and return to Las Vegas, NV

Notes:

1. A block of rooms has been reserved in Mercury for trip participants.
 - Reserved block of 50 rooms in Mercury for night of Feb 1: \$10.00 per night.
 - Reserved block of 15 rooms in Mercury for night of Feb 2 for those attending Nye County field trip on Feb 3.
2. Security arrangements:
 - Feb 1; Enter Gate 510 at 1:00 p.m. and exit Gate 510 at 5:15
 - Feb 2; Enter Gate 510 at 6:15 a.m. and exit Mercury Gate 100 at 5:15
3. Everyone should bring their own lunches and ice-coolers as we will be eating on the fly.
4. Security Information should be received no later than January 21, 1994. Send it to Ms. Carlene Hill via facsimile at 702-794-5348 (see form, Enclosure 2), or by mail to:

 TMSS
 Institutional and External Affairs
 101 Convention Center Drive
 Suite 407
 Las Vegas, NV 89109
5. No foreign nationals are allowed to spend the night on NTS.
6. Fuel is available in Mercury. It is cash only for non-government and non-test site assigned government vehicles.
7. Please plan for cold temperatures.
8. Four days prior to the site visit, DOE will assess weather conditions and make a call if conditions warrant postponing the interaction. If weather is bad, attendees or their organizations will be notified (via NTS badging list) of postponement. Only those that have submitted security information will be notified initially, and a follow-up letter would be sent to NRC with the new dates for the visit.
9. An informal fieldtrip will be lead by Nye County Nuclear Waste Repository Project Office Consultant Marty Mifflin on February 3. Persons wishing to participate should provide their own transportation. An itinerary will be available from the Nye County Project Office after January 20.

Attachment 2

SIGN UP SHEET

DOE/NRC SITE VISIT 2/1-2/94

EXTREME EROSION TOPICAL REPORT

| | | |
|-------------------|--------------------------------|----------------|
| THOMAS STROTT | YIMPO | 702-794-7570 |
| ALI HAGHI | MFO | 703-204-8867 |
| Bill Hume | ACWA | 817-583-2530 |
| Steve L. Roy | MFO/State Eng. | 702-714-7836 |
| EV Tiedeman | Co. MFO | 702 455-5175 |
| Sgt. Denny | ACNW | 301 992 4737 |
| NORMAN T. STARRS | MFO | 702 794-7314 |
| LARRY McKEAGUE | CNWRA | 210 522 5183 |
| K.A. Foland | ACNW | 614 292-1357 |
| Brian E. Hill | CNWRA | 210 522-6087 |
| JOHN TRAPP | NRC | 301-504-2609 |
| John Bradbury | NRC | 301-504-2535 |
| Dave Kinsley | Las Vegas, NV | 503-265-8174 |
| M.P. Miffin | NRC/State of Nev | 702 434 9733 |
| Chris Einberg | DOE/HQ | 202 586-8864 |
| Jay Dade | Geosciences / Univ. of Arizona | 602-742-0454 |
| MAOMY MORGENSTEIN | G.M.F., Inc / STATE/NV | (702) 294-3064 |
| ANDREW WATSON | CNWRA | (508) 429-5698 |
| PHILIP S. JUSTUS | U.S. NRC | 702-388-6120 |
| Carol Johnson | Nevada | 702 687-3744 |
| A C Douglas | City of Las Vegas | 702 229 6469 |
| DAVID TILSON | Nevada | 301-236-7889 |
| John S. Stuckless | USGS | 302-236-7889 |
| Harold Lefevre | NRC | 301 504-5464 |

Charlotte Abrams
Charles Harrington
John Whitney
Michael P. Miklas, Jr.
Terry Crum
Jim York

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