

**MINUTES OF THE OCTOBER 7, 1994, TECHNICAL MEETING/VIDEO-  
CONFERENCE RELATIVE TO TOPICAL REPORTS**

A technical meeting/video-conference (hereafter "meeting") was held on October 7, 1994, at two Department of Energy (DOE) facilities concurrently - DOE Headquarters at the Forrestal Building in Washington, D.C. and the Bank of America Building in Las Vegas, Nevada. Participating organizations included the U.S. Nuclear Regulatory Commission (NRC), the U.S. Department of Energy (DOE), NRC's technical assistance contractor - the Center for Nuclear Waste Regulatory Analyses (CNWRA), DOE's Office of Civilian Radioactive Waste Management's (OCRWM's) Management and Operating Contractor (M&O), and the U.S. Geological Survey. Other organizations represented included the State of Nevada, the Nevada Nuclear Waste Task Force, the Nevada counties of Clark and Nye, and the Radioactive Exchange Publication. The purpose of the meeting was twofold: (1) to discuss NRC comments on two DOE Topical Reports (Extreme Erosion and Seismic Hazard Assessment Methodology) that had been recently reviewed by the staff and transmitted to the DOE for further action and (2) to discuss the Topical Report review process. An attendance list is included as Attachment 1.

Additional attachments include the agenda (Attachment 2) and the "handouts" of the three NRC staff presentations (Attachment 3).

Following summary presentations by NRC staff relative to the results of the reviews of each topical report, detailed questions were asked by DOE and its contractors in order to gain an understanding of what, in the staff's mind, would be required of DOE in order to resolve the NRC's concerns. Although DOE indicated that it had not yet determined the manner in which they would respond to the staff's concerns, DOE did indicate that the information and suggestions offered by the staff would be useful to the DOE in reaching that conclusion.

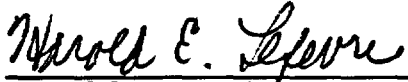
A general discussion followed the NRC staff's presentation on the topical report review process. Highlighted discussion topics included: (1) the importance of a scoping review in reaching agreement on the content of a topical report before DOE expends considerable resources on the preparation of the document, (2) acceptance review criteria with the seismic hazard assessment methodology topical report being a good example of a topic meeting the criteria and (3) the need for submittal of data underlying conclusions reached in the topical report concurrent with submittal of the topical report itself. With respect to Item (1), the staff made the point that there is inherent danger in DOE's proceeding with the finalization of a topical report the scope of which had not been reviewed by the staff. In the case of the two topical reports discussed above, the scope of the annotated outlines reviewed by the staff differed substantially from the scope of the final topical report.

Enclosure

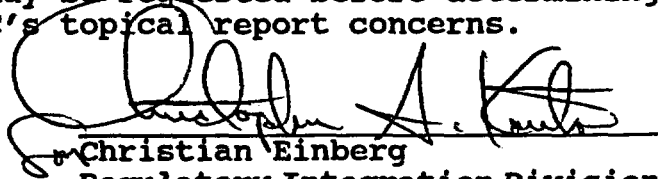
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Both DOE headquarters and Yucca Mountain Project staff stated that the meeting served as a valuable interchange providing better insight on: (1) NRC's concerns with each of the topical reports and (2) the topical report review process,

Prior to adjourning, the DOE indicated that further discussion with the NRC staff on these topics may be requested before determining the manner of responding to NRC's topical report concerns.



Harold E. Lefevre  
Engineering and Geosciences  
Branch  
Division of Waste Management  
Office of Nuclear Material  
Safety and Safeguards  
U.S. Nuclear Regulatory  
Commission



Christian Einberg  
Regulatory Integration Division  
Office of Program Management  
and Integration  
Office of Civilian Radioactive  
Waste Management  
U.S. Department of Energy

DOE/NRC TECHNICAL MEETING ON  
NRC COMMENTS ON DOE TOPICAL REPORTS  
(Via Videoconference, DOE FORS Room 1E-267)

October 7, 1994

Name:	Organization:	Phone Number:
1 Chris Einberg	DOE/HA RW-36	(202) 586-8869
2. Hemi MINWALLA	WESTON TST	202-646-6710
3. Ray Wallace	U.S. Geological Surv	202-586-1244
4. Philip M Dunn	TRW/MRO	202 488-2315
5. LESTER BERKOWITZ	M&O/TRW	202 488 8309
6. PHILIP JUSTIS	USNRC	301 415 6745
7. Mike Miklai, Jr.	CNWRRA	210-522-5207
8. JOHN TRAPP	NRC	301-415-8063
9. MYSORE NATARAJA	NRC	301-415-6145
10. HAROLD LEFEVRE	NRC	301-415-6678
11. Paul Krishna	M&O/TRW	202-488-2307
12. MICHAEL BOLL	NRC / DWM / ENGR	301-415-7286
13. John Bradbury	NRC / DWM / PAHB	301-415-6597
14. PRISCILLA BUNBUN	DOE RW-36	202 586-8365
15. David Foxster	M&O / WCF5	8703 204 8866
16. <del>SPARK FERRIS</del>	<del>DOE</del>	<del>6-9274</del>
17. John Russell	CNWRRA	702/416-1129
18. Bob Waxman	DOE-CG	202 586-6979
19. Karen Younisk	Exchange Publication	202-586-223-8849
20. Sylvia Angel...	DOE / CG - 52	(202) 586-0319
21. CHRISTOPHER A. KORTS	DOE/HA RW-36	(202) 586-9761
22. PAM B. MURPHY	DOE / RW3-1	202-586-1239
23. Keith McConnell	USNRC DWM	301-504-1750
24. Bernard Jasanyich	USNRC DWM	301-415-6653

10/7/94 Video Technical Meeting  
Las Vegas

<u>Name</u>	<u>Organization</u>	<u>Telephone</u>
Thomas L. Gierstead	YMP/AMSL	702-794-1590
Stephan Brown	VMC/AMSL	702 794-7971
John Whitham	USGS-YMP	303 236 0516 x 275
TERRY CRUMP	YMP/MFO	702 794-1859
Phil HAMMOND	YMP/MFO	702 794 8853
Bob Gamble	YMP/MFO	702 794-7880
FAN DOCK	YMP/MFO	702 794-7450
SUSAN JONES	YMP/DOE	702 794-7613
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Steve Frishman	State of NV	702-687-3744
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E.J. TISSERANDUSAN	CLARK COUNTY	702 455-5175
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Jerry L King

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 23, 1994

MEMORANDUM TO: Joseph J. Holonich, Chief  
High-Level Waste and Uranium  
Recovery Projects Branch  
Division of Waste Management/NMSS

FROM: Anne Garcia, Licensing Assistant  
High-Level Waste and Uranium  
Recovery Projects Branch  
Division of Waste Management

SUBJECT: FORTHCOMING DOE/NRC TECHNICAL MEETING VIA VIDEO-CONFERENCE

DATE & TIME: October 7, 1994  
11:00 a.m. - 4:00 p.m. (Eastern Standard Time)

LOCATIONS: Conference Room No. 7, 2nd Floor  
Bank of America Building  
101 Convention Center Drive  
Las Vegas, NV 89109

Room 1E-267  
Forrestal Building  
1000 Independence Avenue, S.W.  
Washington, DC 20585

PURPOSE: To discuss NRC comments on DOE Topical Reports related to  
Extreme Erosion and Seismic Hazard Assessment Methodology

PARTICIPANTS: NRC M. Bell, et. al      DOE T. Bjerstedt  
T. Sullivan et.al      STATE OF NEVADA T. Hickey  
R. Loux  
S. Zimmerman

AFFECTED LOCAL GOVERNMENTS

M. Murphy, Nye County      M. Baughman, Lincoln County  
D. Bechtel, Clark County      B. Mettam, Inyo County  
V. Poe, Mineral County      F. Mariani, White Pine County  
R. Williams, Lander County      L. Fiorenzi, Eureka County  
C. Schank, Churchill County      J. Hoffman, Esmeralda County  
L. Bradshaw, Nye County      P. Niedzielski-Eichner, Nye Cty.

CONTACT: M. Bell, NMSS  
(301) 415-7286

Meeting Notice

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Meetings between NRC technical staff and the Department of Energy are open for interested members of the public, petitioners, intervenors, or any parties to attend as observers pursuant to the spirit of "Open Meeting Statement of NRC Staff Policy", 43 Federal Register 28058, 06/28/78 which details the open meeting policy for applicants and licensees.

Attachment: Meeting Agenda

cc: w/attachment  
T. Hickey, NEV  
S. Goldberg, OMB  
D. Weigel, GAO  
J. Meder, NEV  
F. Parker, NAS  
W. Barnard, NWTRB  
A. Kadak, YAEC  
R. "Jlden, NCAI  
E. Lowrey, NIEC

AGENDA

NRC/DOE Technical Meeting/Video-Conference

October 7, 1994

11:00 a.m.	NRC comments on Extreme Erosion Topical Report	NRC
11:30 a.m.	Discussion of NRC concerns	DOE
12:30 p.m.	Lunch	
1:30 p.m.	NRC comments on Seismic Hazard Methodology Topical Report	NRC
2:00 p.m.	Discussion of NRC concerns	DOE
3:00 p.m.	General Discussion of Topical Report Process	NRC
3:30 p.m.	Items of Concern to State of Nevada	NV
3:45 p.m.	Items of Concern to Local Governments	LG
4:00 p.m.	Adjourn	



**RESULTS OF NRC STAFF REVIEW OF  
TOPICAL REPORT ON EXTREME EROSION**

**NRC/DOE TECHNICAL MEETING/VIDEO-CONFERENCE  
DEPARTMENT OF ENERGY HEADQUARTERS  
FORRESTAL BUILDING, WASHINGTON, D.C.**

**OCTOBER 7, 1994**

**Harold E. Lefevre  
United States Nuclear Regulatory Commission  
Office of Nuclear Material Safety and Safeguards  
Division of Waste Management**

## **PURPOSE OF TECHNICAL MEETING**

- **REPORT ON THE RESULTS OF THE STAFF'S REVIEW OF THE DOE'S TOPICAL REPORT "EVALUATION OF THE POTENTIALLY ADVERSE CONDITION 'EVIDENCE OF EXTREME EROSION DURING THE QUATERNARY PERIOD' AT YUCCA MOUNTAIN, NEVADA"**

# **STAFF REVIEW**

- **RESULTS OF STAFF REVIEW SENT TO DOE BY LETTER DATED AUGUST 22, 1994**
- **REVIEW IDENTIFIED NINE COMMENTS**
- **ACNW PRESENTATION OF AUGUST 16, 1994 FOCUSED ON THREE TOPICS CONSIDERED MOST SIGNIFICANT**
  - **SCOPE OF THE TOPICAL REPORT**
  - **DATING METHOD ADEQUACY (TWO COMMENTS)**
  - **QUALIFICATION PROCESS**

**SUBJECT MATTER NOT ADDRESSED AT  
ACNW PRESENTATION**

- **CANYON CUTTING UNDERESTIMATES EROSION RATES**
- **HILLSLOPE DEGRADATION RATES UNDERESTIMATE EROSION RATES**
- **GEOMORPHIC MAP**
- **MAXIMUM INCISION SCENARIO AT 40 MILE WASH**
- **EXTENT OF THE QUATERNARY PERIOD**

## STAFF SUMMARY CONCLUSION

- **NRC STAFF REVIEW FINDS THE TOPICAL REPORT DOES NOT PROVIDE INFORMATION SUFFICIENT TO DEMONSTRATE THE ABSENCE OF THE PAC AT YUCCA MOUNTAIN**

**RESULTS OF NRC STAFF REVIEW OF  
TOPICAL REPORT ON SEISMIC HAZARD  
ASSESSMENT METHODOLOGY**

**NRC/DOE TECHNICAL MEETING/VIDEO-CONFERENCE  
DEPARTMENT OF ENERGY HEADQUARTERS  
FORRESTAL BUILDING, WASHINGTON, DC**

**OCTOBER 7, 1994**

**A. K. Ibrahim, J. S. Trapp, K. I. McConnell  
United States Nuclear Regulatory Commission  
Office of Nuclear Material Safety and Safeguards  
Division of Waste Management**

**NRC'S CONCERNS WITH THE TOPICAL REPORT  
METHODOLOGY TO ASSESS  
FAULT DISPLACEMENT AND VIBRATORY GROUND  
MOTION HAZARDS AT YUCCA MOUNTAIN**

- **THE METHODOLOGY SHOULD INCLUDE DETERMINISTIC APPROACH**
- **THE METHODOLOGY SHOULD ADDRESS HOW STRUCTURES, SYSTEMS, AND COMPONENTS IMPORTANT TO SAFETY AND WASTE ISOLATION WILL BE LOCATED WITH RESPECT TO TYPE I FAULTS**
- **THE METHODOLOGY SHOULD DESCRIBE THE EXPERT ELICITATION APPROACH THAT WILL BE USED IN THE METHODOLOGY**

- **THE METHODOLOGY SHOULD INCLUDE DETERMINISTIC APPROACH**

- **DOE'S ANNOTATED OUTLINE STATED:**

**THIS SECTION "HAZARD ASSESSMENT METHODOLOGY" WILL PROVIDE A SUCCINCT DESCRIPTION OF THE METHODOLOGY, INCLUDING HOW PROBABILISTIC AND DETERMINISTIC COMPONENTS WILL BE USED FOR VIBRATORY GROUND MOTION AND FAULT DISPLACEMENT**

- **THE NRC HAD THEREFORE BEEN EXPECTING THIS INFORMATION IN THE REPORT**



## **METHODOLOGY (CONTINUED)**

- **COMBINED PROBABILISTIC-DETERMINISTIC METHODOLOGY HAS BEEN RECOMMENDED BY ASCE SUBCOMMITTEE**
- **IN ORDER TO PERFORM A PROBABILISTIC ANALYSIS IT IS NECESSARY TO GATHER AND TABULATE THE INFORMATION ON SEISMICITY AND FAULT DISPLACEMENT**
- **THEREFORE THE INFORMATION REQUESTED BY NRC AND AGREED UPON BY DOE WILL BE READILY AVAILABLE**
- **THE NRC CONSIDERS IT NECESSARY THAT THE INFORMATION THAT IS USED IN THE PROBABILISTIC ANALYSIS BE PRESENTED**

- **THE METHODOLOGY SHOULD ADDRESS HOW SSC WILL BE LOCATED WITH RESPECT TO TYPE I FAULTS**
  - **STAFF HAS PREVIOUSLY INDICATED THAT:**
    - 1) **DOE SEEK EARLY RESOLUTION OF FAULT-RELATED DESIGN/PERFORMANCE ISSUES**
    - 2) **AREAS CONTAINING TYPE I FAULTS SHOULD BE AVOIDED WHERE IT IS REASONABLY ACHIEVABLE**
  - **OVERALL SITING/DESIGN APPROACH TO MITIGATE FAULT DISPLACEMENT (INCLUDING AVOIDANCE) COULD BE A MAJOR COMPONENT OF THE METHODOLOGY**
  - **THEREFORE, DOE'S APPROACH TO MITIGATING FAULT DISPLACEMENT HAZARD SHOULD BE PROVIDED IN THE METHODOLOGY TOPICAL REPORT**

- **THE METHODOLOGY SHOULD DESCRIBE THE EXPERT ELICITATION APPROACH THAT WILL BE USED IN THE METHODOLOGY**
  
- **IT HAS BEEN SHOWN THAT THE RESULTS OF A PROBABILISTIC SEISMIC HAZARD STUDY DEPEND ON THE PROCEDURES USED IN EXPERT ELICITATION. FOR EXAMPLE, SOME OF THE DIFFERENCES IN THE LLNL AND EPRI HAZARD ESTIMATES RESULTED FROM USING DIFFERENT ELICITATION APPROACHES**
  
- **NRC CONCERNS RELATED TO DOE'S IMPLEMENTATION OF EXPERT ELICITATION HAVE BEEN RAISED PREVIOUSLY (SCP COMMENTS 3, 7, 93, AND 98)**
  
- **THEREFORE, DOE SHOULD DESCRIBE THE EXPERT ELICITATION APPROACH THAT WILL BE UTILIZED TO DEVELOP THE PROBABILISTIC HAZARD CURVES AND ADDRESS THE CONCERNS RAISED BY NRC**

## **OTHER ISSUES**

- **PERFORMANCE GOAL-BASED APPROACH APPEARS TO COMPLICATE THE LICENSING PROCESS AND WOULD REQUIRE EXTENDED CONSIDERATION BY THE STAFF**
  - **PERFORMANCE GOAL-BASED APPROACH PROPOSED BY DOE YUCCA MOUNTAIN PROJECT IS BASED ON DOE-STD-1020-94.**
  - **THE PROPOSED APPROACH HAS NOT BEEN USED IN LICENSING NUCLEAR FACILITIES**
  - **THEREFORE, THE STAFF MAY REQUIRE A LENGTHY REVIEW PERIOD**

# **TOPICAL REPORT REVIEW PROCESS**

**NRC/DOE TECHNICAL MEETING/VIDEO-CONFERENCE  
DEPARTMENT OF ENERGY HEADQUARTERS  
FORRESTAL BUILDING, WASHINGTON, DC**

**October 7, 1994**

**Michael J. Bell  
United States Nuclear Regulatory Commission  
Office of Nuclear Material Safety and Safeguards  
Division of Waste Management**

## **STEPS IN TOPICAL REPORT REVIEWS**

- **SCOPING REVIEW**
- **ACCEPTANCE REVIEW**
- **TECHNICAL REVIEW OF TOPICAL REPORT**
- **REQUESTS FOR ADDITIONAL INFORMATION**
- **DRAFT SAFETY EVALUATION REPORT**
- **FINAL SAFETY EVALUATION REPORT**

## **SCOPING REVIEW**

- **DOE SUBMITS ANNOTATED OUTLINE**
- **PURPOSE IS TO GET AGREEMENT ON SCOPE AND CONTENT OF TOPICAL REPORT BEFORE DOE SPENDS SIGNIFICANT RESOURCES**
- **A MEETING MAY BE NEEDED TO CLARIFY INTENT AND UNDERSTAND CONCERNS**
- **HAS NOT WORKED WELL TO DATE**

## **ACCEPTANCE REVIEW**

- **FIRST STEP ON SUBMITTAL OF TOPICAL REPORT**
- **EVALUATED AGAINST FOUR CRITERIA (NEXT SLIDE)**



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**NRC TOPICAL REPORT**

**ACCEPTANCE REVIEW CRITERIA**

- 1) **THE REPORT DEALS WITH IMPORTANT TO SAFETY OR WASTE ISOLATION SUBJECT**
- 2) **THE SUBJECT OF THE REPORT COULD BE REFERENCED IN DOE'S LA FOR THE HLW REPOSITORY**
- 3) **THE REPORT CONTAINS COMPLETE AND DETAILED INFORMATION ON THE SUBJECT MATTER**
- 4) **NRC'S ACCEPTANCE OF THE REPORT WILL RESULT IN INCREASED EFFICIENCY OF THE REVIEW PROCESS FOR THE HLW REPOSITORY APPLICATION**

## **TECHNICAL REVIEW**

- **NRC WILL INDEPENDENTLY REVIEW DOE'S ANALYSIS**
- **NRC NEEDS ACCESS TO UNDERLYING DATA**
- **SINCE PURPOSE OF REPORT IS TO REFERENCE IN LICENSE APPLICATION, SAME QA STANDARDS APPLY**

## **SAFETY EVALUATION REPORT (SER)**

- **DRAFT SER MADE PUBLICLY AVAILABLE**
- **COPIES PROVIDED TO STATE, AULGS AND AFFECTED INDIAN TRIBES**
- **PUBLIC TECHNICAL INTERACTION**
- **FINAL SER PUBLISHED**