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JUN 19 1991

Mr. Dwight E. Shelor, Acting Associate Director  
for Systems and Compliance  
Office of Civilian Radioactive Waste Management  
U. S. Department of Energy, RW 30  
Washington, D.C. 20585

Dear Mr. Shelor:

SUBJECT: UPCOMING WORKSHOP ON THE ROLE OF NATURAL ANALOGS IN GEOLOGIC DISPOSAL  
OF HIGH-LEVEL NUCLEAR WASTE

The U.S. Nuclear Regulatory Commission (NRC) and the Center for Nuclear Waste  
Regulatory Analyses (CNWRA) will be holding a workshop to address technical  
issues related to the application of natural analog studies to geologic disposal  
of high-level nuclear waste. A copy of the draft agenda for this workshop is  
enclosed for your information. It will be held in San Antonio, Texas on July  
23-25, 1991 at:

La Mansion Del Rio Hotel  
112 College Street  
San Antonio, Texas 78205  
(512) 225-2581

Although some U.S. Department of Energy (DOE) contractors are planning on  
making presentations, this workshop is not a formal licensing meeting or  
technical exchange between NRC and DOE dealing with the Yucca Mountain site.  
However, you are welcome to send an observer. Yucca Mountain licensing items  
will not be discussed at this workshop.

A block of rooms has been reserved at the hotel for workshop participants.  
Any questions regarding the details of this meeting should be directed to  
Dr. William Ott, of the NRC's Office of Nuclear Regulatory Research, at  
(301)-492-3882 or Dr. William Murphy, of the CNWRA, at (512)-522-5263.

Sincerely,

(Original Signed by *Joseph J. Linehan* for

*for*

John J. Linehan, Acting Director  
Repository Licensing and Quality  
Assurance Project Directorate  
Division of High-Level Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: Workshop Agenda

cc: See next page Identical letter sent to: r. Loux, G. Gertz, S. Bradhurst  
M. Baughman, D. Bechtel, D. Weigel, M. Phistletwaite

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Dwight E. Shelor

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cc: R. Loux, State of Nevada  
S. Bradhurst, Nye County, NV  
M. Baughman, Lincoln County, NV  
D. Bechtel, Clark County, NV  
~~D. Weigel, GAO~~  
C. Thistlethwaite, Inyo County

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**Workshop on the Role of Natural Analogs in  
Geologic Disposal of High-Level Nuclear Waste**

**Second Preliminary Program, June 1991**

**To be held in San Antonio, Texas, July 23-25, 1991**

**OBJECTIVES.** This workshop is being organized by the Nuclear Regulatory Commission and the Center for Nuclear Waste Regulatory Analyses as a forum to address technical issues related to the application of natural analog studies to geologic disposal of high-level nuclear waste. A program of introductory presentations on the philosophy and applications of natural analog studies is to be followed by working group discussions oriented to specific technical fields. The objective of the working groups is to define how natural analog studies can contribute to site characterization, performance assessment, and the definition of research priorities for geologic disposal of high-level nuclear waste. Questions of the feasibility and extent of model validation, qualitative and quantitative applications of geologic (and archaeologic) analogs, use of analogs as subjects for interdisciplinary modeling exercises, and analog site research methodology are to be addressed. Each working group will be asked to provide specific recommendations for the conduct and application of natural analog studies related to geologic disposal of nuclear waste. Working group coordinators will meet prior to the workshop to develop a detailed structure to achieve these objectives. Proceedings of the workshop will be published to include papers by lead speakers and reports of observations and recommendations generated in each topical working group. For this technical workshop, discussion of licensing and policy matters is strictly absent from the program, and the workshop is not exclusively devoted to issues related to the repository proposed for Yucca Mountain, Nevada.

**Monday, July 22**

- I. Advance meeting of working group coordinators and specialists, 4 to 6 PM.
- II. Informal icebreaker at La Mansión Del Rio, 6 to 7 PM.

**Tuesday, July 23**

**First Plenary Session: Philosophy and Applications of Natural Analog Studies**

**I. Invited Papers.**

- A. Introduction. Wesley C. Patrick (CNWRA)
- B. The role of natural analogs in performance assessments. Budhi Sagar (CNWRA)
- C. Applications of natural analog studies in international nuclear waste disposal programs.
- D. Long-term predictions using natural analogs. Rodney Ewing (UNM)
- E. Successes (and failures) of natural analog applications in other fields:
  1. Seismic applications to reactor safety.
  2. Ore exploration and mining. Donald Gustafson
  3. Petroleum exploration and production. James Wood (MTU)
  4. Large systems analog test cases for modeling exercises.

## II. Presentations by Specialists of Working Groups: Technical Applications of Natural Analogs in Geologic Disposal of High-Level Nuclear Waste

- A. Waste Package/Waste Form Working Group. Rodney Ewing (UNM)
- B. Near-Field Processes/Environment Working Group. John Apps (LBL)
- C. Far-Field Processes/Environment Working Group.
- D. Tectonics/Volcanism Working Group.

## III. Workshop banquet at Southwest Research Institute

Wednesday, July 24

### Working Group Sessions.

Workshop participants will divide in the four working groups. Interactive technical discussions with participation by all workshop attendees will address issues of the state of the art in the application of natural analogs to geologic disposal of high-level nuclear waste, with emphasis on the individual workshop-technical areas. Working groups will evaluate the effective use of natural analog studies in site characterization, and performance assessment, and will prioritize natural analog research activities. Structure will be provided by working group coordinators and specialists, and participants will be advised of working group organization in advance of the meeting.

Thursday morning, July 25

### Second Plenary Session.

- I. Summaries of working group results by coordinators or designees.
- II. General discussion led by a panel composed of coordinators and/or designees.
- III. Concluding statements.