



UNITED STATES
NUCLEAR REGULATORY COMMISSION

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June 23, 1997

MEMORANDUM TO: N. King Stablein, Acting Chief
ENGB/DWM/NMSS

THRU: Richard A. Weller, Section Leader *Raw*
Engineering and Material Section
ENGB/DWM/NMSS

FROM: Mysore N. Nataraja, Sr. Geotechnical Engineer
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SUBJECT: YUCCA MOUNTAIN SITE VISIT/EXPLORATORY STUDIES FACILITY
QUARTERLY MEETING AND APPENDIX-7 MEETING
LAS VEGAS, NEVADA, JUNE 10-12, 1997

The following is a brief trip report for your information. Two items of interest have already been submitted on the activities covering my trip. In addition, a detailed meeting summary will be prepared to document the minutes of the Exploratory Studies Facility (ESF) quarterly meeting, and, therefore, many of the items that will be covered elsewhere will not be repeated here.

SITE VISIT

On June 10, 1997, I visited the Yucca Mountain site along with the On-Site Representatives (ORs) and Mr. Michael Lee of the Performance Assessment and High-Level Waste Integration Branch. After going through the necessary training and orientation for wearing a respirator, we visited the Northern Ghost Dance Fault Alcove (Alcove 6) and saw the location where the excavation crosses the fault. The geologic feature at the crossing is not very conspicuous to most lay persons and requires a trained geologist to identify it. If this is representative of how this feature expresses itself at the repository horizon, it does not appear to be a significant challenge to repository construction, nor a significant contributor to loss of useful emplacement space. It also does not appear to be a significant pathway in comparison to other major joints and fractures.

We then visited the Thermal Test Facility (Alcove 5) and watched the work in progress. The single heater test is now in the cool-down phase. We were told that the comparison between predicted and measured mechanical displacements and temperature showed good match. The excavation of the drift-scale heater test is now complete. About 75 percent of the holes have been drilled, and the concrete liner has been placed in certain sections of the heater drift.

We visited the South Portal and observed the Tunnel Boring Machine being pulled out of the excavation. The cutter-head is now completely outside the ESF, and the remaining attachments, such as the mapping platforms, etc., are literally inching their way out.

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As a final part of our site visit, we went to the Large Block Test Site. We were told that the measured temperature distributions and the saturation profiles in the block correlate very well with the model predictions. ESF

QUARTERLY MEETING

The staff held a technical meeting (video-conference) with the U.S. Department of Energy (DOE) on June 11, 1997, in Las Vegas. Many of the details of this meeting will be reported by me and Mr. Lee in a separate meeting summary. Two important items for the Repository Design/Thermo-Mechanical Effects Key Technical Issue are: (1) the plans for the so-called "east-west drift" are now being finalized (we should probably hear more from DOE on this issue); and (2) DOE will be preparing a bi-monthly design update in a document to be known as "Reference Design Description" (RDD). This is in response to our concern that staff cannot keep up with the changes to design concepts. RDD is meant to be for information only and to keep the staff and other interested parties up-to-date on the design concepts.

WEB-BASED INFORMATION SYSTEM

After the ESF meeting, I had an opportunity to attend an orientation session on DOE's Web-Based Information System (WBIS). I was able to go through an example (Seismic Topical Report # 2 (TR-2), Rev. 1), however, the example is a report that we have already reviewed. If DOE uses WBIS for the next revision of the TR-2, it might facilitate our review process.

APPENDIX-7 MEETING

On June 12, 1997, Mr. William Belke (OR) and I held an Appendix-7 Meeting with DOE and M&O representatives to discuss open items remaining from our in-field verification of April 1995. The State of Nevada representatives observed the meeting for the first half of the day. Based on the requests made by us prior to the meeting, M&O had made every effort to gather the necessary material for our review. I was able to look at the work completed by DOE in response to three recommendations of our in-field verification report of June 16, 1995. I was also provided detailed responses to some of the clarification questions I had posed on the DOE responses to our comments on its Regulatory Compliance Review Report. At the end of the day, we left with a distinct impression that most of the open items remaining from the in-field verification of April 1995 could now be closed (once the documentation of objective evidence can be completed), with perhaps one or two exceptions. In the future, the issue of design control process for the repository design will need to be carefully monitored on a continuous basis by the staff. The issue of integrating the ESF design with that of the Geologic Repository Operations Area, if the site is demonstrated to be suitable, will continue to be important. This is especially the case with respect to seismic design of the underground facility and quality classification of the roof support system. We felt that this Appendix-7 Meeting was very useful and productive. We were given similar feedback from the attendees from DOE and its contractors.

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N.K. Stablein

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