

OCT 0 3 1991

## PHASE I LETTER--QUAT FAULTING

- 1 -

Mr. Dwight E. Shelor, 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: PHASE I REVIEW OF U.S. DEPARTMENT OF ENERGY (DOE) STUDY PLAN  
8.3.1.17.4.6, QUATERNARY FAULTING WITHIN THE SITE AREA

On February 19, 1991, DOE transmitted the study plan entitled "Quaternary Faulting within the Site Area" (Study Plan for Study 8.3.1.17.4.6) to the U.S. Nuclear Regulatory Commission (NRC) for review and comment. The NRC has completed its Phase I Review of this document using the Review Plan for NRC Review of DOE Study Plans, Revision 1 (December 6, 1990).

The material submitted in the study plan was considered substantively consistent with the agreement on content resulting from the NRC-DOE agreements made at the May 7-8, 1986 meeting on Level of Detail for Site Characterization Plans and Study Plans. In addition, the references for the study plan have, for the most part, been provided to NRC or are readily available in the public domain.

A major purpose of the Phase I Review is to identify concerns with studies, tests, or analyses that if started could cause significant and irreparable adverse effects on the site, the site characterization program, or the eventual usability of the data for licensing. Such concerns would constitute objections, as that term has been used in earlier NRC staff reviews of DOE's documents related to site characterization (Consultation Draft Site Characterization Plan and Site Characterization Plan [SCP] for the Yucca Mountain site). The Phase I Review of this study plan identified no objections with any of the activities proposed.

There is one technical concern--previously raised with respect to the SCP in general as Question 1 in NRC's Site Characterization Analysis (SCA) of DOE's SCP--that the NRC staff wishes to call to the particular attention of DOE. In the study plan, DOE indicates that the scale of the maps to be produced by this study will be 1:24,000. The location of faults is a key component of this study, and the plotting of faults at a scale of 1:24,000 may be inadequate to provide the needed accuracy of fault locations. Other geologic maps of the Yucca Mountain area, such as surficial deposits maps, are planned by DOE to be at a scale of 1:12,000. DOE should consider compiling the results of this study on similar scale maps.

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PHASE I LETTER--QUAT FAULTING

- 2 -

After completion of the Phase I Review, selected study plans are to receive a second level of review, called a Detailed Technical Review, based on the relationship of a given study plan to key site-specific issues or NRC open items, or its reliance on unique, state-of-the-art test or analysis methods. During the Phase I Review, the NRC staff observed that several SCA open items--namely SCA Comments 47, 48, 59, 60, 64, 68, and 71, and the aforementioned SCA Question 1--are related to this study plan, and that the aspects of the SCP that generated those concerns in the SCA are reiterated in this study plan. The NRC staff wishes to call DOE's attention to these open items which have not been addressed in this study plan. However, we have decided not to proceed with a Detailed Technical Review of this study plan because the NRC staff considers that such a review would only serve to restate the concerns already expressed in the SCA as listed above.

If you have any questions concerning this letter, please contact King Stablein (FTS/[301]-492-0446) of my staff.

Sincerely,

(Original Signed by )

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

cc: R. Loux, State of Nevada  
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