



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

JUL 06 1993

MEMORANDUM FOR: Joseph J. Holonich, Director
Repository Licensing and Quality Assurance Project
Directorate
Division of High-Level Waste Management, NMSS

FROM: Ronald L. Ballard, Chief
Geology and Engineering Branch
Division of High-Level Waste Management, NMSS

SUBJECT: REVIEW OF DOE STUDY PLAN 8.3.1.17.4.4, "QUATERNARY STRIKE-
SLIP FAULTS PROXIMAL TO THE SITE WITHIN NORTHEAST-TRENDING
ZONES," REV. 0

The Geology and Engineering Branch has conducted a review of the subject Study Plan in accordance with the guidance provided in the "Review Plan for NRC Staff Review of DOE study Plans," Rev. 2, 1993. The technical portion of this review was conducted by John Trapp, while John G. Spraul of HLPD reviewed the Quality Assurance aspects of the plan. As a result of this review we have the following observations:

1. As written, this study plan has a slightly different organization to that described in the Site Characterization Plan. This has come about as a result of transfer of the studies related to the Stagecoach Road fault from this study plan to 8.3.1.17.4.6, Quaternary Faulting Within the Site Area. The technical reason for this transfer is the proposed relationship of the Stagecoach Road fault with the Paintbrush Canyon fault. While study plan 8.3.1.17.4.6 is designed to provide detailed information of Quaternary faults within the site area, section 1.1 states that the study will also gather information on the surface location, orientation, length, width, segmentation and possible interconnections of all faults that can be identified within the site area and the location, amount, direction and time of Quaternary movement on these faults. In order to gather this information, it is the HLG staff's understanding that the studies are, and will continue to be, conducted outside the site area as specified in study plan 8.3.1.17.4.6. As study 8.3.1.17.4.6 is evaluating the Stagecoach Road fault, the required information for site characterization will be provided, and as this appears to be a more logical organization, we have no concern with this modification. In addition, as the Stagecoach Road fault is being studied as an interconnection with the Paintbrush Canyon fault it is probably not necessary to request a revision of study plan 8.3.1.17.4.6.
2. This study plan is substantially in agreement with the revised Level of Detail Agreement for Study Plans and there are no open items related to the Quality Assurance Program that could call into question the quality of this study plan.

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3. No objections to the activities described were identified. The location of the activities is sufficiently removed from the site area that there should be no adverse effects on repository performance and no significant irreversible/unmitigable effects on characterization could be identified. The work on this study will require close coordination and integration with other studies, such as 8.3.1.17.4.7 (Subsurface Geometry and Concealed Extension of Quaternary Faults at Yucca Mountain), however, the planning and integration appears to be sufficient to preclude any significant disruption of schedules.
4. There are no tests which propose the use of radioactive materials.
5. There are no existing open items which are to be resolved by this study plan.
6. The activities proposed are, by themselves, considered to be necessary, but not sufficient, components of the site characterization program, specifically the preclosure tectonics program (8.3.1.17). No comments or questions have been identified and the HLGE staff does not believe a detailed review of this study plan is necessary.
7. The HLGE staff notes that the study plan specifically lists the seismic surveys, and possible microwave/IR and gamma-ray surveys, in section 3.1 and 3.1.3. The staff consider that the DOE might wish to expand the suite of tests to include some of the other geophysical methods listed in study plan 8.3.1.17.4.7. As there is already the recognized need to coordinate/integrate with study 8.3.1.17.4.7, it might be beneficial to be more open ended in potential geophysical tests within this study plan. While the HLGE staff would offer this as a suggestion, they do not wish to have the suggestion elevated to an open item.

If there are any questions on the review, Please contact John Trapp at 504-2905.

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cc: C. Abrams

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