



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

MAY 06 1992

MEMORANDUM FOR: Joseph 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: PHASE I REVIEW OF STUDY PLAN 8.3.1.17.3.4 "EFFECTS OF  
LOCAL SITE GEOLOGY ON SURFACE AND SUBSURFACE MOTIONS"

As requested, (Note to P. Justus and K. Hook from C. Abrams, dated March 3, 1992) the Geology/Geophysics Section has completed the Phase I review of the Study Plan 8.3.1.17.3.4. This review was conducted using the Review Plan for NRC Staff Review of DOE Study Plans Revision 1 (December 6, 1990). Those criteria related to Quality Assurance were not addressed in our review in that they were addressed by the review of the QA Section.

This study plan describes activities that will be performed to determine local site effects on surface and subsurface ground motions resulting from natural and man-made seismic sources.

Based on the Phase I review of the study plan (see enclosure), the staff has determined that the material submitted in the study plan by the DOE is consistent with the agreement on content resulting from the NRC-DOE agreement made at the May 7-8, 1986 meeting on Level of Detail for Site Characterization Plans and Study Plans.

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. Based on our Phase I review, we find no objections with any of the activities proposed and a detailed review is not needed.

Meanwhile, the staff would recommend that non-linear soil behavior, non-vertical incident body waves, and at least two dimensional velocity structure be considered in modeling effects of local site geology.

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The review was conducted by A. K. Ibrahim, if you have any questions regarding this review, please contact Dr Ibrahim at 504-2523.

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

Enclosure:  
As stated

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