

SURFACE-WATER/STREAMFLOW SP

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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: PHASE I REVIEW OF U.S. DEPARTMENT OF ENERGY (DOE) STUDY PLAN FOR
CHARACTERIZATION OF THE YUCCA MOUNTAIN REGIONAL SURFACE-WATER RUNOFF
AND STREAMFLOW

On October 4, 1990, the DOE transmitted the study plan entitled "Characterization of the Yucca Mountain Surface-Water Runoff and Streamflow" (Study Plan for Study 8.3.1.2.1.2) 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 Staff Review of DOE Study Plans, Revision I (December 6, 1990).

The material submitted in the study plan was determined to be for the most part 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. However, the NRC staff considers Activity 8.3.1.2.1.2.2, transport of debris by severe runoff, to involve undeveloped methodologies. As stated in section 3.2.3 of the study plan, no known standard methods exist to investigate fluvial-debris transport and its hazard potential. Procedures are to be developed as methodologies are proven. Consequently, this study plan is incomplete with respect to the level of detail ordinarily expected in study plans. The NRC staff expects that, consistent with the Level of Detail agreements, the appropriate information will, once developed, be provided to NRC for its review. However, in view of the need to begin accumulating a historical record of flooding phenomena in the Yucca Mountain area as soon as possible, the work described in this study plan should not be delayed pending transmittal of the yet-to-be-developed procedures.

Most of the references for the study plan either are readily available in the public domain or have been provided to NRC. However, there are three hard-to-obtain references which we are requesting DOE to provide to us:

- o Beaty, C.B., 1974, Debris flow, alluvial fans, and a revitalized catastrophism: Zeitschrift fur Geomorphologie Supplement, v. 21, p. 38-51.
- o Bergstrom, F.W., and Schumm, S.A., 1981, Episodic behavior in badlands, in Davies, T.R.H., and Pearce, A.J., (eds.), Symposium, Erosion and sediment transport in Pacific Rim steeplands: Christchurch, January 1981, International Association of Hydrological Sciences Pub. No. 132, p. 478-492.

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- o International Geographical Union, 1967, Field methods for the study of slope and fluvial processes: Revue de Geomorphologie Dynamique, v. 17, No. 4, p. 146-188.

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 for the Yucca Mountain site). The Phase I Review of this study plan identified no objections with any of the activities proposed.

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. We have decided to proceed with a Detailed Technical Review of this study plan and will provide DOE with staff comments as soon as that review is completed.

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

Sincerely,

for ORIGINAL SIGNED BY *John J. Linehan*
 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

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*See previous concurrence

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