

DEC 06 1991

Mr. John P. Roberts, 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. Roberts:

SUBJECT: PHASE I REVIEW OF U.S. DEPARTMENT OF ENERGY (DOE) STUDY PLAN FOR CHARACTERIZATION OF THE SITE SATURATED-ZONE GROUND-WATER FLOW SYSTEM AND OF DOE STUDY PLAN FOR TESTING OF THE C-HOLE SITES WITH REACTIVE TRACERS

On April 6, 1990, DOE transmitted the study plan entitled "Study Plan for Testing of the C-Hole Sites with Reactive Tracers" (Study Plan for Study 8.3.1.2.3.1.7) to the U.S. Nuclear Regulatory Commission (NRC) for review and comment. On March 7, 1991, DOE transmitted the study plan entitled "Study Plan for Characterization of the Site Saturated-Zone Ground-Water Flow System" (Study Plan for Study 8.3.1.2.3.1.1-6). These two study plans describe the activities for one study as presented in DOE's Site Characterization Plan (SCP) for the Yucca Mountain, Nevada site. Because the two documents describe one study, NRC chose to review them together. The NRC has completed its Phase I Review of these documents using the Review Plan for NRC Review of DOE Study Plans, Revision 1 (December 6, 1990).

The material submitted in the study plans was considered to be consistent, to the extent possible at this time, with the agreement on content resulting from the NRC-DOE agreements made at the May 7-8, 1986 NRC-DOE meeting on Level of Detail for Site Characterization Plans and Study Plans. Many procedures remain to be developed, including ones covering key work activities at the site, such as the drilling and coring of wells, equipment calibration, and methods for conducting cross-hole hydraulic tests, large-scale pumping tests, and tracer tests. The NRC staff did not consider that the lack of availability of such information compromised its ability to conduct its Phase I Review of the material provided. However, we request that DOE provide us with a schedule for the development of the procedures and that DOE notify us when the procedures are available for review.

Among the references listed for these study plans are several which have not been provided to NRC and are not readily available in the public domain. We therefore request that DOE provide us with the documents listed in the enclosure to this letter.

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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 the 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.

There are two technical matters related to the study plans that the NRC staff wishes to call to the attention of DOE. First, there is considerable potential for interferences among the tests proposed, especially given the large number of hydrologic and tracer tests planned at multi-well sites like the C-hole cluster. If such interferences occur, they could cause disruptions of the site characterization schedules, which could subsequently have an adverse impact on schedules for licensing. Therefore, it is important for DOE to develop a timeline that shows all proposed work activities under the site saturated-zone investigations, including durations and start and finish dates. If it is not yet possible to identify actual start dates, the timeline could still show the relative starting times and durations for all related tests. If such a timeline exists now or is developed at some future time, we request that it be provided to NRC when available.

In addition to this first matter, the NRC staff notes that the connection between this study and the study concerned with Saturated Zone Synthesis and Modeling Activities (Study 8.3.1.2.3.3) is described as an iterative process whereby modeling may lead to additional data collection and refinement of a conceptual model. The staff considers the proposed process to be a positive step but is unclear as to how DOE plans to implement it. Although the study plan describes general relationships between this and other studies, there is no explicit discussion of an overall program of iterative performance assessment, or discussion of the timing of this study relative to such a program.

After completion of the Phase I 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, certain study plans are selected to receive a second level of review, called a Detailed Technical Review. The NRC staff considers the two subject study plans likely candidates

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for a Detailed Technical Review. However, until the important procedures and the test and activity timeline mentioned earlier in this letter are completed and available to the NRC staff, we cannot make a final determination regarding the need for a Detailed Technical Review of these study plans.

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

Sincerely,

*David Brooks*

(Original Signed by

*for*

Joseph J. Holonich, Director  
Repository Licensing and Quality  
Assurance Project Directorate  
Division of High-Level Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As Stated

- cc: R. Loux, State of Nevada
- C. Gertz, DOE/NV
- S. Bradhurst, Nye County, NV
- M. Baughman, Lincoln County, NV
- D. Bechtel, Clark County, NV
- D. Weigel, GAO
- P. Niedzielski-Eichner, Nye County, NV
- C. Thistlethwaite, Inyo County, CA
- V. Poe, Mineral County, NV
- F. Sperry, White Pine County, NV

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\* See previous concurrence

OFC :HLPD	:HLHP*	:HLPD	:HLHP*	:HLPD*	:
NAME: <i>KStablein</i>	:NColeman	:DBrooks	:MFederline	: <i>JHolonich</i>	:
Date: 12/06/91	:11/27/91	:12/ /91	:11/30/91	:12/06/91	:

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*Dave,  
See my  
suggestions.  
King*

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*make a final determination regarding the need for*

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Joseph J. Holonich, Director  
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NAME: <i>AS</i> Stablein	:NColeman	:DBrooks	:MFederline	:JHolonich	:
Date: 11/27/91	: 11/27/91	: 11/27/91	: 11/30/91	: 12/2/91	:

References for Study Plan 8.3.1.2.3.1  
(including Studies 8.3.1.2.3.1.1-6 and 8.3.1.2.3.1.7)  
Requested by NRC

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