



Department of Energy  
Washington, DC 20585

JUL 23 1992

Mr. Joseph J. Holonich, Director  
Repository Licensing & Quality Assurance  
Project Directorate  
Division of High-Level Waste Management  
Office of Nuclear Material Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Holonich:

The NRC commented in their Phase I review letter of Study Plan 8.3.1.2.1.4, "Regional Hydrologic System Synthesis and Modeling," (enclosure 1) that it did not appear that appropriate Site Characterization Analysis (SCA) open items (specifically, comments 6, 9, 10, and 95) had been addressed in the approved subject study plan. It appears appropriate to assess the applicability of this study plan to the cited open items.

None of the U.S. Department of Energy's (DOE) responses to these SCA open items forward-referenced Study Plan 8.3.1.2.4. as a means to explicitly address these concerns. These open items, for the most part, focus on technical concerns that cross-cut the site characterization program and are best addressed from that perspective. NRC has indicated their intent to perform a more detailed Phase II review on this study plan. DOE would regard it as helpful if the NRC staff indicated how they believe the subject study plan relates to the four SCA open items at issue.

DOE is aware of the open items remaining from the NRC staff's evaluation of DOE's SCA responses (enclosure 2). Resolution of concerns has been explored with respect to comment 95. The DOE discussed this open item (and others) with NRC staff at the Technical Exchange on Scenario Development and Construction of Complimentary Cumulative Distribution Functions held in Albuquerque, New Mexico, on April 28, 1992. DOE used the technical exchanges to better understand SCA concerns and to help determine whether or not resolution of specific open items can be accomplished in the near-term. At this time, DOE has determined that Comment 95 could not be resolved in the near-term. When DOE believes that an adequate basis has been developed to resolve an open item, a letter will be sent to the NRC to document this basis. Progress in resolving open items will be reported in site characterization progress reports.

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If you have any questions, please contact Mr. Chris Einberg of my office at 202-586-8869.

Sincerely,

*Linda J. Derrell*  
for

John P. Roberts  
Acting Associate Director for  
Systems and Compliance  
Office of Civilian Radioactive  
Waste Management

Enclosures:

1. Ltr, 5/6/92, Holonich to Roberts
2. Ltr, 7/31/91, Bernero to Bartlett,  
w/o encl

CC:

Alice Cortinas, CNWRA, San Antonio, TX

CC:

C. Gertz, YMPO  
R. Loux, State of Nevada  
M. Baughman, Lincoln County, NV  
J. Bingham, Clark County, NV  
B. Raper, Nye County, NV  
P. Niedzielski-Eichner, Nye County, NV  
G. Derby, Lander County, NV  
P. Goicoechea, Eureka, NV  
C. Schank, Churchill County, NV  
F. Mariani, White Pine County, NV  
V. Poe, Mineral County, NV  
E. Wright, Lincoln County, NV  
J. Pitts, Lincoln County, NV  
R. Williams, Lander County, NV  
J. Hayes, Esmeralda County, NV  
M. Hayes, Esmeralda County, NV  
B. Mettam, Inyo County, CA  
C. Abrams, NRC



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

MAY 06 1992

Mr. John P. Roberts, Acting Director  
for Systems and Compliance  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585

Dear Mr. Roberts:

SUBJECT: PHASE I REVIEW OF U.S. DEPARTMENT OF ENERGY (DOE) STUDY PLAN,  
REGIONAL HYDROLOGIC SYSTEM SYNTHESIS AND MODELING

On January 15, 1992, DOE transmitted the study plan, "Regional Hydrologic System Synthesis and Modeling" (Study Plan 8.3.1.2.1.4), to the U.S. Nuclear Regulatory Commission for review and comment. NRC has completed its Phase I Review of this document using the Review Plan for NRC Staff Review of DOE Study Plans, Revision (December 6, 1990).

The material submitted in the study plan was considered to be consistent, to the extent possible at this time, with the NRC-DOE agreement on content of study plans 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. 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.) It does not appear that the conduct of the activities described in this study plan will have adverse impacts on repository performance and 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. During the Phase I Review, the NRC staff observed that several SCA open items--namely SCA Comments 6, 9, 10 and 95--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. We have decided to proceed with a Detailed Technical Review because of the relevance of this study plan to unresolved SCA open items and the relationship of this study plan to key site issues such as regional groundwater flow and the overall performance of the site.

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ENCLOSURE 1



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

JUL 31 1991

Dr. John W. Bartlett, Director  
Office of Civilian Radioactive Waste Management  
U.S. Department of Energy RW-1  
Washington, DC 20585

*Dobson*  
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Dear Dr. Bartlett:

8-7-91

On December 14, 1990, the U.S. Department of Energy (DOE) transmitted its responses to the open items-- 2 objections, 133 comments, and 63 questions--presented in the U.S. Nuclear Regulatory Commission's (NRC) Site Characterization Analysis (SCA) of DOE's Site Characterization Plan (SCP) for the Yucca Mountain, Nevada proposed repository site. While DOE addressed each one of NRC's SCA open items, it did not indicate, either in its transmittal letter or in the responses themselves, that it expected the SCA open items to be closed on the basis of the contents of the responses. In fact, as the NRC staff expected, DOE indicated in the transmittal letter that "Many of the comments in the SCA cannot be fully resolved in the absence of new site information..."

Nevertheless, DOE has made significant progress toward closing the two objections, which it has the responsibility for closing prior to proceeding with site characterization work related to those objections. Regarding the objection that DOE did not have a qualified quality assurance (QA) program in place for site characterization activities, there has been partial closure on several of the particulars involved in the objection. The NRC staff has concurred with DOE's findings that three DOE contractor programs are acceptable for new site characterization activities, four DOE contractor programs are acceptable for new site characterization activities with minor exceptions, and the DOE Headquarters and DOE Yucca Mountain Site Characterization Office programs are acceptable to begin limited new site characterization activities in Midway Valley.

With respect to the second objection, that DOE had not demonstrated the adequacy of the design control process under which the exploratory shaft facility, now exploratory studies facility, (ESF) was prepared nor the adequacy of the design itself, DOE has been conducting a study of alternatives to the ESF design in the SCP and is scheduled to select a new design later this year. NRC met with DOE in January 1991 to discuss a number of specific concerns related to this objection. The meeting enabled NRC to gain a better understanding of what DOE was doing in this area, especially with regard to the identification and incorporation of regulatory requirements. Based on this and other interactions with DOE, it appears that DOE has begun to adequately consider the NRC staff concerns in its alternatives study. However, before NRC can draw a final conclusion, it will have to receive and review DOE's formal submittals on the objection.

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ENCLOSURE 2

In its cover letter transmitting the SCA responses, DOE responded in general terms to several major site characterization study areas--iterative performance assessments, tectonic phenomena investigations, technical integration, and alternative conceptual models--highlighted for DOE management attention in NRC's letter transmitting the SCA to DOE (Bernero to Rousso, July 31, 1989), and indicated it has ongoing work in these areas. NRC encourages DOE to provide NRC with the reports documenting what has been and what will be done in these areas for NRC review as soon as possible so that NRC and DOE can come to early agreement on approaches in these key areas.

With an understanding of the necessary limitations in some of the responses to the 198 individual open items, the NRC staff has reviewed the DOE responses to determine which of the open items could be closed on the basis of the information provided. The staff has done an evaluation of each response. For each of those items which must remain open at this time, the evaluation identifies any concerns that the staff has with the approach discussed in the response, and, where possible, suggests what the next steps might be to make progress toward closure of the open item.

When the NRC staff identified the open items in the SCA, it did so based upon the level of detail that was expected to be contained in the SCP. This level of detail was agreed upon at the May 7-8, 1986 NRC-DOE Level of Detail for Site Characterization Plans and Study Plans Meeting. Accordingly, when the staff considered whether an open item was to remain open or be closed, it evaluated the DOE response in terms of whether the information provided was sufficient, at the SCP level of detail, to close the open item. If DOE recognized the concern, and provided information at the appropriate level of detail to address the concern, the NRC staff concluded that the open item was closed.

For many open items, DOE recognized the concerns but deferred the SCP-level details of its response to issuance of a future document (e.g., Exploratory Studies Facility Alternatives Study). In such cases, the NRC staff has left the open item open pending its review of the specified DOE submittals.

In the particular cases where DOE recognized the concerns but deferred some or all details of its response to issuance of one or more study plans, the NRC staff had to determine whether the DOE response itself contained enough information, at the SCP level of detail, to close those open items. In some instances, DOE's deferral of the SCP level of detail to study plans necessitated leaving the open items open pending NRC staff review of the study plans, even though the NRC staff would not have ordinarily expected to need to review study plans, with their greater level of detail than that required for the SCP, to close out SCP-related open items.

For other responses, where DOE deferred its response until certain site characterization data could be obtained and analyzed, the NRC staff considered the open items open. Also, in cases where DOE disagreed with the NRC concern but did not persuade the NRC staff of the insubstantiality of the concern, or where DOE recognized the NRC concern but presented an approach to resolving that concern about which the NRC staff had questions, the items were considered open.

The results of the NRC staff review are contained in the enclosure to this letter. Evaluations of each DOE response are presented, as well as Table 1, which indicates the current status of each SCA open item. Fifty-nine of the 198 open items (38 of the 133 comments and 21 of the 63 questions) were closed on the basis of the DOE responses.

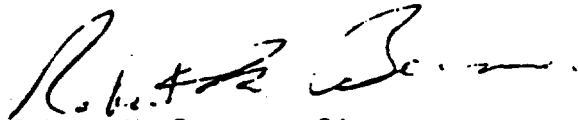
Closure of many of the remaining open items has been deferred until the NRC staff reviews various DOE documents identified in the DOE responses. To facilitate the process of reaching closure on these open items, DOE should, in its transmittal letters accompanying such documents, specify which open items are addressed and where, in a given document, the information intended to close an open item is presented.

For purposes of tracking DOE's activities and progress toward closure of NRC's SCA open items, DOE should report this information in its SCP progress reports. I have previously requested that this be done in my letter transmitting the SCA to DOE (Bernero to Rouso, July 31, 1989) and in my letter to you providing the NRC staff comments on DOE's first SCP progress report (Bernero to Bartlett, June 25, 1990). I consider this to be an important component of the SCP progress reports and necessary for the NRC staff to be assured that the NRC SCA open items, as well as other open items, such as those related to NRC staff reviews of study plans, are receiving appropriate attention in the DOE site characterization program.

In my July 31, 1989 letter transmitting the SCA to DOE, I stated that "The NRC considers all concerns identified in this letter and in the SCA to be serious and encourages DOE to give full attention to each in an attempt to resolve them early during site characterization." This statement represents NRC's continuing position. DOE's responses indicate that attention is being directed to addressing the SCA open items. The evaluations provided with this letter are intended to assist DOE in its efforts to close the remaining SCA open items. NRC urges DOE to continue to work toward closure of those open items and is prepared to meet with DOE as necessary to ensure that the NRC concerns are fully understood and to progress toward mutually agreeable approaches for closure of the open items.

Please give me a call if you wish to discuss any issues or believe the interaction between our staffs would help clarify the contents of this letter or its enclosures.

Sincerely,



Robert M. Bernero, Director  
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  
W. Barnard, NWTRB  
C. Thistlethwaite, Inyo County, CA