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FROM: Ronald L. Ballard, Branch Chief
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SUBJECT: REVIEW OF DOE'S RESPONSE TO NRC LETTER DATED
AUGUST 20, 1993

Reference: Letter of November 18, 1993, From D. Shelor of DOE to B.J. Youngblood of NRC: DOE Response to NRC's Letter of August 20, 1993, on ESF Design and Design Control Process.

This note transmits the results of the Geology and Engineering Branch (HLGE) evaluation of DOE's response of November 18, 1993, to the NRC letter dated August 20, 1993. The NRC letter requested information on four concerns on the design control process and ESF/GROA design integration. In addition to responding to four NRC concerns, DOE also provided information on another matter related to DOE resolution of NRC staff concerns that are identified during independent design reviews. The HLGE review addressed three of the five DOE responses (response numbers 3, 4 and 5) in DOE's letter. HLGE staff believes that DOE adequately described the interrelationship among DOE's baseline and technical requirements documents (NRC concern No. 3), provided plans for transmitting the ESF information to the NRC in a timely manner (NRC concern No. 4), and described a satisfactory approach to resolving SCA comments and design review comments (related concern No.5 addressed by DOE). HLGE has also provided verbal input to HLPD on QA related concerns.

Based on a limited review of references provided by DOE in its response, HLGE staff believes that DOE has provided satisfactory responses to the above concerns. However, the staff will evaluate DOE's implementation of its plans either through technical QA audits or design review observations. The staff has not yet received from DOE copies of the Site Design and Test Requirements document (SD&TRD) or the ESF Plan. Furthermore, numerous mistakes were found during a spot check of the Site Characterization Program Baseline (SCPB) document during this review. Because the SCPB is a critical document, the staff expects to review updated versions of DOE's SCPB and other related documents in the near future.

Regarding the related fifth item (resolution of design package review comments), it should be conveyed to DOE that the staff will review only portions of design packages. The staff will focus mainly on potential issues affecting safety and waste isolation. We will not be in a position to approve or disapprove the design packages. Since DOE management will not have

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given final approval to the design packages under review, we will only provide comments/observations on the portions reviewed.

The attachment presents our evaluation of DOE's response to NRC's letter dated August 20, 1993. Dr. Shiann-Jang Chern conducted the technical review of this response letter. Dr. Banad Jagannath conducted the IQA for this review. Should you any have questions regarding this review, please call Dr. Shiann-Jang Chern at 504-2537.

Ronald L. Ballard, Branch Chief
Geology and Engineering Branch

Enclosure: As stated

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REVIEW OF DOE RESPONSE OF NOVEMBER 18, 1993 TO NRC'S LETTER DATED AUGUST 20, 1993

The evaluation of DOE's response is presented below. This format is generally consistent with NRC's review and documentation of evaluation of DOE's responses to open items.

NRC REQUEST/CONCERN 3.

"The date when a controlled baseline ESF design, integrated with a conceptual GROA design, will be formally provided to the NRC for review and comment. On May 19, 1993, the DOE transmitted an uncontrolled copy of the ESF Technical Baseline (ESFTB) Document (YMP/CM-0016) which contains discussion & drawings depicting the approved ESF design as of the transmittal date. The letter of transmittal document states that Progress Report Number 8 will contain information related to the approved design. Although the incorporation, by reference, of an up-to-date baseline document and a description of the significance of that document in the PR would be a first step toward meeting this request, DOE needs to describe how the ESF is incorporated into GROA. Also, it needs to provide in its Progress Report a complete summary of all design documents that have been, or need to be, formally submitted to the NRC for review, and a discussion of how those documents related to one another to present a complete picture of the ESF and conceptual GROA design."

EVALUATION OF DOE RESPONSE

DOE's response indicates that ESF design information is presented in the following documents:

- The Site Characterization Program Baseline, Revision 9 (SCPB, transmitted to NRC on March 5, 1993) is a primary descriptive baseline document which is used by the DOE to provide information requested by the NRC. (This contains a relatively high-level description of the ESF Test Program, the ESF, and the relationship of the ESF to the potential repository.)
- The Site Characterization Progress Reports which are used to summarize the descriptions of changes to SCPB as well as in-process plans for modification to the SCPB.
- The ESF Design Requirements (ESFDR, YMP/CM-0019, transmitted to NRC on October, 27, 1993), a technical baseline document, presents technical requirements for the ESF.
- More detailed technical information is documented in the ESF Technical Baseline (ESFTB, transmitted to NRC on May 19, 1993) and its referenced documents, which are:
 - a. ESF Title I Design Summary Report (transmitted to NRC in 1991).
 - b. Exploratory Studies Facility Alternate Studies (transmitted to NRC on March 3, 1992).

- c. Site Design and Test Requirements document (SD&TRD, not transmitted to NRC).
- d. Plan for Phased Approach to ESF design, Development and Implementation (Transmitted to NRC on December 19, 1991).
- e. The ESF PLAN - includes the plan for integration of the Title II Design packages (not transmitted to NRC).

The DOE in its response tabulated the relationships among SCPB, other Baseline documents, technical reports on the ESF Interface and Integration of Test Programs, and the ESF/GROA design. The staff will use this table as a guide for determining the scope of future reviews of the above documents.

DOE in its response did not specify a date by which a controlled baseline ESF design, integrated with a conceptual GROA, will be formally provided to the NRC for review and comment.

The staff made a spot check on Sections 8.4.2.3.3 through 8.4.2.3.6. of Site Characterization Program Baseline (SCPB) and found numerous technical and editorial errors. The staff decided that the SCPB should not be given a thorough technical review at this time. Examples of mistakes in the SCPB include:

- Incorrect references to figures.

For example, Figures 8.4.2-15 and 8.4.2-16 are referenced in the text as ramp portals (last paragraph of page 8.4.2-78), but Figures 8.4.2-15 and 8.4.2-16 presented in the SCPB, Revision 9, are "An analysis of demonstration breakout room -- percentage change from in situ vertical stress" and "Zones of influence from main test level experiments on dedicated test area layout" respectively. Similar problem occurred for Figures 8.4.2-14 and 8.4.2-14d. Figures 8.4.2-15 and 8.4.2-18 are identical except numbers are different.

- Incorrect reference to table.

The text states that "The MTL dedicated testing area will contain space for different tests identified in Table 8.4.2-12" (Second paragraph of page 8.4.2-77). There is no Table 8.4.2-12 in this document.

- References to non-existing sections.

The text (fourth paragraph of page 8.4.2-67) references Section 8.4. There is no Section 8.4 in this SCPB document. The text (first paragraph of page 8.4.2-78) also references Section 8.4.1.1, which is not in this document.

- References of this document are not provided.

Although many references are cited in pages 8.4.2-88 through 8.4.2-93, no references were provided as part of this package.

The staff expects future clarification from DOE on this issue which we intend

to follow up during design reviews and technical QA audits. The SCPB is a critical document, the staff expects to receive a corrected version of SCPB in the near future.

REQUEST/CONCERN 4.

"A detailed plan for the process DOE will use to keep the NRC staff informed in a timely manner of design changes which have the potential to impact ongoing testing activities, the ability to conduct proposed testing activities, or the ability of the site to isolate waste. In addition, DOE should discuss how proposed changes will be responsive to the staff's SCA concerns related the site characterization and the ability to gather representative technical data in the ESF."

EVALUATION OF DOE RESPONSE

DOE's response letter indicates:

- The DOE will continue to publish Progress Reports (PRs) to report the progress and to update the changes made in ESF/GROA.
- The DOE will provide the NRC with subsequent versions to the SCPB in a timely manner.
- The DOE has initiated a weekly teleconference between the DOE Chief, ESF Branch and the NRC Geotechnical Engineering Section Leader to discuss items of interest that occur each week.
- The DOE has also initiated bimonthly ESF/GROA update meetings to discuss issues and selected topics.
- The DOE will continue to invite the NRC to participate in the 50% and 90% design reviews.
- The DOE has the DIE program for evaluating items and activities in the MGDS for a specific item's potential impact on safety, waste isolation, and QA controls.
- The DOE uses NRC SCA comments as input to evaluate design changes and to revise the study plans. When the DOE sends study plans to the NRC, the DOE also sends a separate letter to NRC documenting the open items and DOE's rationale to resolve the SCA open items.

Based on the above information, the HLGE staff is satisfied with DOE's plan and expects to evaluate DOE's implementation of this plan. However, review comments on this concern generated from other branch (HLPD) should also be considered.

REQUEST/CONCERN 5.

"In addition to the NRC concerns described above, the NRC letter indicated that the staff is concerned with how DOE resolves NRC staff concerns that are identified during independent design reviews."

EVALUATION OF DOE RESPONSE

DOE's response indicates:

- The NRC and affected parties are invited to participate as observers in the design review.
- The DOE will assign qualified personnel to review the entire design package and provide comments in their areas of expertise.
- The DOE and NRC discuss NRC observer's comments, along with other's (affected parties) comments.
- The DOE ensures that M&O regulatory reviewer submits NRC observer's comments for resolution.
- The documented review comments are then distributed to appropriate personnel for comment resolution.
- After comments have been successfully resolved and appropriate changes have been made to the design, the reviewers who generated the comments have to verify that their comments are satisfactorily resolved.
- These resolutions may be discussed during DOE-NRC bimonthly ESF/GROA technical meeting, if desired.

Based on the above information, the HLGE staff is satisfied with DOE's response on the staff's concerns identified during independent reviews.