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DEC 22 1986

Mr. Stephen H. Kale, Director
Office of Geologic Repositories
U.S. Department of Energy
Washington, DC 20585

WM Record File

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WM Project 10,11,16

Docket No.

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Dear Mr. Kale:

The Nuclear Regulatory Commission (NRC) staff has completed its review of the five final Environmental Assessments (EA's) issued by the Department of Energy (DOE) on May 28, 1986 for the first high-level radioactive waste repository. The purpose of this letter is to inform you of the results of our review (Enclosure 1) for consideration by the DOE in the development of the Site Characterization Plans (SCP's).

These NRC staff comments on the final EA's are part of the continuing interface between the staffs of the DOE and NRC which will lead to early identification and resolution of potential licensing issues. In the short term our comments should assist the DOE in preparing high quality SCP's. Therefore, we believe that the opportunity afforded by the final EA's for early interaction between NRC and DOE will be beneficial to the progress of the repository program.

It is apparent that significant efforts were made by DOE to respond to each of the NRC staff major comments on the draft EA's, and in fact, many of these comments have been resolved. However, in each of the final EA's our review identified remaining concerns which are principally related to 1) not identifying the range of uncertainties associated with the existing limited data base, 2) not identifying the range of alternative interpretations and assumptions that can be reasonably supported by existing data, and 3) not incorporating a reasonable range of uncertainties and alternative interpretations into evaluations and conclusions. Based on these concerns we believe that some conclusions in all five final EA's are still overly favorable or optimistic for the areas of comment. At this stage of the site investigation and screening process there is inherent uncertainty in site information that can lead to alternative interpretations of data. Furthermore, resolution of uncertainties -- such as those identified in our comments -- must await detailed site characterization. However, recognition of these uncertainties and alternative interpretations is critical to the development of test plans that will lead to adequate characterization of sites and result in the information needed for licensing. To the extent necessary for demonstrating compliance with 10 CFR Part 60, site characterization testing should lead to narrowing the range of uncertainties, eliminating alternative interpretations and confirming or revising assumptions on the basis of new data and analyses. This narrowing process will not be effective unless test plans

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recognize the range of uncertainties and alternative interpretations and assumptions that can be reasonably supported by the existing data.

The NRC staff has not attempted, nor do we consider it appropriate to evaluate the ranking of the sites. Accordingly, we have not performed a detailed evaluation of the following two documents: "A Multiattribute Utility Analysis of Sites Nominated for Characterization for the First Radioactive-Waste Repository - A Decision Aiding Methodology (DOE/RW-0074) and "Recommendation by the Secretary of Energy of Candidate Sites for Site Characterization for the First Radioactive-Waste Repository" (DOE/S-0048). The review that was done indicates that conclusions on repository performance in the Methodology Document (DOE/RW-0074) that were derived from evaluations and conclusions in the final EA's, that are considered in our comments to be overly optimistic, are likewise considered optimistic.

Over the past few years we have identified the need for recognizing uncertainties and alternative interpretations in the DOE program as reflected in our comments on the BWIP Site Characterization Report (NUREG-0960), the draft EA's, and the draft Project Decision Schedule. In addition our staffs have met numerous times over the past few years to discuss this subject. While we feel that these interactions have resulted in final EA's which exhibit progress in these areas, we consider that further improvement in recognition of uncertainties and alternative interpretations is still needed. We also recognize the progress that has been made recently by DOE and NRC agreeing on how uncertainties and alternative interpretations will be considered in the SCP's and supporting study plans (NRC/DOE meeting on Level of Detail in the SCP, May 7-8, 1986). However, because of the difficulties encountered in the past in addressing uncertainties and alternative interpretations, we consider it important that our staffs discuss representative comments in these areas as part of our pre-SCP interactions to agree on how they will be considered in the development of test plans. Two representative comments which we consider would serve as timely examples for discussion at technical meetings in the near future are groundwater travel time at the Hanford Site and hydrothermal activity at the Yucca Mountain Site. Mr. Linehan will be contacting your staff to make arrangements for these and other pre-SCP technical meetings.

Sincerely,

~~Original Signed By:~~

Robert E. Browning, Director
Division of Waste Management
Office of Nuclear Material
Safety and Safeguards

Enclosure:
NRC Staff Comments on the DOE
Final EA's

OFFICIAL CONCURRENCE AND DISTRIBUTION RECORD

LETTER TO: Mr. Stephen H. Kale, Director
Office of Geologic Repositories
U.S. Dept. of Energy
Washington, DC

FROM: Robert. Browning, Director
Division of Waste Mgt., NMSS

SUBJECT: RESULTS OF COMPLETION OF FIVE FINAL EA REVIEW

DATE: ~~DEC 29~~ 1986

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CONCURRENCES

ORGANIZATION/CONCUREE	INITIALS	DATE CONCURRED
WM/RP RJohnson	<u>RL</u>	86/12/22
WM/RP JLinehan	<u>JS</u>	86/12/22
DWM/ REBrowning	<u>REB</u>	86/12/22

Record note: Minor changes have been made to the transmittal letter and the introduction/conclusion to the Commission draft of the comments based on verbal comments received from the ACRS on December 5, 1986. The main suggestion was to more clearly indicate what NRC considers that Site Characterization should accomplish with respect to narrowing the range of uncertainties. Words were added to clearly indicate that uncertainties should be reduced to the extent necessary for demonstrating compliance with 10CFR Part 60. Other minor word changes were made to improve clarity and one paragraph was relocated for better organization. See the QA record for a marked up copy showing each change.

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encl. to 12/22/86 ltr. to Kale from
Browning on the final EA's
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