



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
ADVISORY COMMITTEE ON NUCLEAR WASTE  
WASHINGTON, D.C. 20555

August 4, 1992

Mr. Robert M. Bernero  
Director  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. Bernero:

SUBJECT: PROGRESS IN SITE CHARACTERIZATION ACTIVITIES

Since its inception, the Advisory Committee on Nuclear Waste (ACNW) has devoted considerable attention to the Site Characterization Plan (SCP) that has been developed by the U.S. Department of Energy (DOE) for the proposed high-level waste (HLW) repository at Yucca Mountain, Nevada. Shortly after release of the original document in December 1988, we met with DOE officials several times to review various details in the SCP and with scientific and engineering personnel from your staff who were preparing an official response to the SCP for the Commission's consideration. We provided extensive comments on the preliminary versions of the resulting Commission document, the Site Characterization Analysis (SCA) (NUREG-1347; August 1989), in our letters to the Commission (July 3 and August 21, 1989). Since that time, we have continued to monitor and review the SCP updates, the study plans, and DOE's efforts to resolve the issues raised in the SCA.

The purpose of this letter is to convey to you our concerns about the slow progress in resolving issues enumerated in the SCA. This situation, coupled with delays in receiving, reviewing, and commenting on the DOE study plans needed to implement the SCP, jeopardizes the orderly, coordinated, scientific progress for the characterization of the Yucca Mountain site. For this reason, we recommend that the NRC staff significantly increase its efforts to urge DOE toward a more timely and coordinated approach to site characterization. Although the staff has made considerable improvement in the pace of study plan reviews, we believe it should implement a more rapid review of the various documents submitted to it by DOE.

The SCA includes 2 objections, 133 comments, and 63 questions. One objection has been resolved but the other still remains three years after issuance of the SCA. Although we understand that some of the

accompanying challenges are formidable, less than one-half of the comments and questions enumerated in the SCA have been resolved. Despite this situation, the work of characterization continues and new study plans are being prepared and existing study plans are being revised. If these plans are to be properly integrated into the SCP, the comments and questions enumerated in the SCA must be resolved. Otherwise, many of the potential benefits of these preliminary exchanges will not be realized.

In addition, the NRC staff should alert DOE to the need to address and satisfy the deficiencies noted in the SCA, so as to ensure that the study plans represent a valid approach to site characterization. One example is Comment 32, which deals with the limited discussion in the SCP on the integration of geophysical investigations. Geophysical investigations of the earth's subsurface provide critical input to the tectonic model of the Yucca Mountain region, which will be used in predicting future tectonism at the proposed HLW site. Accordingly, such investigations must be appropriately integrated with geologic/tectonic studies so that the resulting data will be available in a timely manner and useful to tectonic analyses. This is only one example of a fundamental concern that must be considered in every stage of the geologic investigation in the site characterization process. Nonetheless, this concern, which was clearly identified and addressed as item (3) in your letter of July 31, 1989, introducing NUREG-1347, is yet to be resolved.

The study plans are essential to the implementation of the SCP in that they define the testing procedures that are to be used. To date, the DOE has submitted less than half of the proposed study plans to the NRC. The NRC staff, in turn, has reviewed and commented on about three-quarters of the total number of proposed (draft) plans received. Implementation of several of the study plans, which we have reviewed, is strongly dependent on guidance that is to be provided in other plans, which have not yet been made available by DOE. This situation is impairing the review process and, even more seriously, may limit the effectiveness of the actual exploratory studies. This is a matter that should be addressed by the NRC staff through direct interaction with DOE.

In summary, we believe the lack of timely progress in resolving the objections, comments, and questions enumerated in the SCA and in developing and approving the study plans to implement the SCP could impair the orderly, scientific progress of effectively characterizing Yucca Mountain. This will also have an adverse impact on meeting the licensing schedules. We recommend that you encourage your staff to work with DOE to accelerate the review process. Particular attention should be focused on those aspects of the SCA in need of resolution to ensure that study plans are developed that will yield valid scientific data for site characterization.

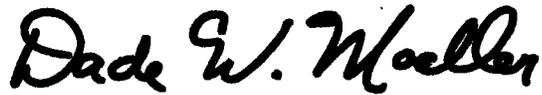
Mr. Robert M. Bernero

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Finally, we urge that your staff take specific steps to point out where the lack of responses by DOE to the SCA and the absence of associated study plans could place at risk the scientific quality and applicability of the investigations now being planned or executed.

Sincerely,

A handwritten signature in black ink that reads "Dade W. Moeller". The signature is written in a cursive, slightly slanted style.

Dade W. Moeller  
Chairman