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

April 28, 1995

The Honorable Ivan Selin
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Selin:

SUBJECT: ADDITIONAL COMMENTS ON THE DOE PROGRAM APPROACH

As a continuation of our review, requested by the Commission, of the U.S. Department of Energy's (DOE) program approach, the Advisory Committee on Nuclear Waste held discussions with representatives of the DOE at its 72nd meeting (March 15-16, 1995) on aspects of the program approach related to waste containment and isolation at Yucca Mountain and the activities related to the preparation of the license application. The DOE presented a well-organized strategy of waste containment and isolation. We have not reviewed the details of the technical site suitability evaluation process that DOE is developing. Our discussions supplement those reported to you on September 30, 1994. The substance of the concerns expressed in that report remain unresolved. The absence of a repository reference design remains a problem affecting many aspects of the NRC regulatory program.

In this letter, we provide some additional conclusions by the Committee:

1. Continued emphasis by DOE on the two-stage licensing approach will pose serious difficulties for the Commission. A lack of sufficient data, the use of bounding assumptions, the likely absence of a detailed repository design or critical decisions about the design (e.g., thermal management), and the absence of other information needed for determining the quality of conclusions reached by DOE will unduly complicate the Commission's decisionmaking and at best could lead to conditional decisions. The two-stage licensing process, while not necessarily faulty in principle, is in this instance relatively uncertain. In order to clarify the consequences of decisions to proceed with two-stage licensing as currently described, the Commission should ask the NRC staff to analyze the uncertainties that will be reflected in the response to the license application and to define, at an early stage, what limitations DOE can expect in the NRC decisions on the license application.

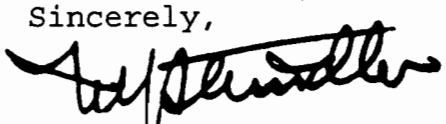
2. The NRC staff has stated that a much closer and more timely surveillance and tracking of DOE activities is necessary. We recommend that the NRC staff and the DOE discuss the need, in light of the program approach and schedules, for more rapid access by the NRC staff to the DOE data and results. There will need to be adequate evaluation and analysis of the results by DOE and its contractors prior to their use by the NRC. The NRC staff needs to be proactive in obtaining early access to the data and results that will be contained in the license applications. However, the staff must also recognize the need for DOE to ensure the quality and validity of the data transmitted, and for the orderly management of their program.

3. The emphasis by DOE on the use of bounding assumptions in modeling with limited field and laboratory data makes evaluation and prioritizing by the NRC staff of parameters and phenomena more dependent on the staff's judgment than on the results of analytical processes. This dependence would be diminished if performance assessment is expedited. The staff will need to ensure that it is able to evaluate and prioritize the technical issues and bases for scenarios that are to be evaluated and for which data or reliable models will be required. We believe this assignment, although difficult, is vital to ensure that the staff resources are employed to meet the schedule requirements contemplated by the DOE program approach. We reemphasize the need of the NMSS and RES staffs to develop protocols for addressing, in the very near future, the potential deficiencies in the planned performance assessment. We are confident that the NRC staff can identify the high-priority issues and scenarios that relate directly to the regulations. The NRC should reorganize its license application review strategy and the PA programs in light of the expected deficiencies in the information supplied by DOE.

4. The NRC staff should formulate, as early as possible, the issues in the current DOE program approach that may be unresolved or difficult to resolve. One path would be to identify the anticipated results that would be available by the deadline for decisions on the site suitability. Owing to the complexity of the system and the descriptions of a suitable site, early awareness of the status of data and modeling related to the site characterization should be developed. The status of the data base and the quality of the models should be analyzed by the NRC staff, and this information should be made available for the Commission decision and comment process at the time that the technical

site suitability is transformed into a recommendation to be made to the President.

Sincerely,



Martin J. Steindler
Chairman