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

October 18, 1989

The Honorable Kenneth M. Carr
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: DRAFT TECHNICAL POSITION ON TECTONIC MODELS IN THE ASSESSMENT OF PERFORMANCE OF HIGH-LEVEL RADIOACTIVE WASTE REPOSITORIES

During its 13th meeting, September 13-15, 1989 and 14th meeting, October 11-13, 1989, the Advisory Committee on Nuclear Waste met with representatives of the NRC staff to discuss the subject draft Technical Position on Tectonic Models (referenced). This matter was also discussed with staff representatives during an ACNW Working Group meeting on October 10, 1989. On the basis of these discussions and our review of the draft report, we offer the following comments.

Although the preparation of this draft Technical Position has resulted in certain benefits, including promotion of discussion on related issues, helping the NRC staff to formulate its positions, and assisting in a better understanding of certain issues, there is still a need to better justify the reasons for issuing the document and to demonstrate how it and other related reports are to be integrated. There are at least two options for proceeding with this matter in order to transmit the views of the NRC staff to DOE. These include summarizing the staff's views in a Technical Position considerably improved from the one proposed or expressing the staff's position in the form of a guidance letter.

Our comments regarding the adequacy of the proposed Technical Position are as follows:

1. The proposed draft Technical Position is unnecessarily terse. Additional discussion is needed to avoid misunderstandings. For example, further treatment is needed on the development and application of tectonic models in the evaluation of a proposed geologic repository. Specific subjects to be addressed should include:

   a. The explicit use of models in performance allocation and performance assessment,

   b. The development of broad-based criteria by which tectonic models can be evaluated, and

   c. The relative role of deterministic and probabilistic methods for assessing processes and events as they relate to, and are developed from, tectonic models.

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2. There are many words and phrases in the draft Technical Position that need to be clarified and/or defined to assist in making the Technical Position effective. These include a wide range of terms, such as a "relatively short period of time," "over long times," "full range" of tectonic models, and "bounding values." There should also be a major effort to ensure that the definitions of certain scientific terms being proposed by the NRC staff for guidance purposes are compatible with the technical definitions currently in use within the professional geosciences community.

3. Although the NRC staff has indicated that they are scheduled to complete and issue this Technical Position by the end of this calendar year, we are not convinced of the necessity for meeting this timetable. Our position is based, in part, on the fact that rulemaking is underway to clarify the meaning and applications of anticipated and unanticipated processes and events. The outcome of the rulemaking could have an impact on the development of this Technical Position. If, however, there is a need to issue the Technical Position by the indicated date, we will make ourselves available to review and comment on a revised draft. Because of the extensive changes that we believe are necessary, a follow-up review by the ACNW should be scheduled.

We hope these comments will be helpful, and we look forward to having an opportunity to review and comment on the revised report.

Sincerely,

Dade W. Moeller

Dade W. Moeller
Chairman

Reference:
Memorandum dated July 24, 1989 to ACNW Members from S. J. S. Parry, ACRS, with attached "Technical Position on Tectonic Models in the Assessment of Performance of High-Level Radioactive Waste Repositories" (Predecisional)