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Mr. Sam Rouso, Acting Director  
Office of Civilian Radioactive Waste  
Management  
U. S. Department of Energy  
Washington, D.C. 20545

Dear Mr. Rouso:

In an October 18, 1989 letter to U.S. Nuclear Regulatory Commission (NRC) Chairman Carr, NRC's Advisory Committee on Nuclear Waste (ACNW) provided recommendations concerning investigation of potential volcanism at the proposed Yucca Mountain high-level radioactive waste repository site. That letter, which is enclosed for your consideration, contained two recommendations. One is that the investigation of volcanism be undertaken with an integrated, multidisciplinary systems approach. As you know, the NRC staff has previously stressed the need for this kind of approach, not only for studies of volcanism, but as well for investigations of other phenomena at the Yucca Mountain site. In particular, this point was highlighted in the July 31, 1989 letter transmitting the NRC staff Site Characterization Analysis (SCA) to the U.S. Department of Energy (DOE), and in addition was emphasized in several SCA comments. Furthermore, in recent NRC-DOE Technical Exchanges on tectonics the NRC staff has re-emphasized this concern.

The other recommendation is that a "blue-ribbon" peer panel be established to assist in providing guidance on appropriate studies needed to fulfill a systems approach to the investigation of potential volcanism at Yucca Mountain. The NRC recognizes that it is, of course, the responsibility of DOE to utilize whatever mechanisms are necessary to assure that its site characterization program, in the area of volcanism and other areas of investigation, is planned and conducted so that it obtains the information needed to demonstrate compliance with 10 CFR Part 60 requirements. Therefore, I am forwarding the ACNW's suggestion for DOE's consideration.

Because of the importance of the volcanism issue to evaluation of the suitability of the Yucca Mountain site, I would like to be kept informed on an ongoing basis of any new plans or initiatives that DOE is pursuing relative to the investigation of potential volcanism at the Yucca Mountain site. The NRC staff stands ready to interact with DOE as necessary to provide guidance in this or any other area of DOE's site characterization program.

Sincerely,



Robert E. Browning, Director  
Division of High-Level Waste Management

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PDR WASTE  
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Enclosure: As stated

cc: W. Coons, NWTRB  
D. Moeller, ACNW  
R. Loux, State of Nevada  
M. Baughman, Lincoln County, NV  
D. Bechtel, Clark County, NV  
S. Bradhurst, Nye County, NV  
C. Gertz, DOE-NV/YMPO

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BLUE RIBBON PANEL--ROUSSO

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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: RECOMMENDATIONS DEALING WITH INVESTIGATION OF POTENTIAL VOLCANISM  
AT THE YUCCA MOUNTAIN HIGH-LEVEL WASTE REPOSITORY SITE

This letter is a follow-up to our letter to you of July 3, 1989, regarding the NRC staff's analysis of DOE's Yucca Mountain Site Characterization Plan. In that letter we expressed our concern that early studies at Yucca Mountain should be focused on identifying and evaluating potential problems that may disqualify the site as a high-level waste repository. As a result of that concern and an increasing interest in volcanism as a potential "fatal flaw," an ACNW Working Group on Tectonic Models met on October 10, 1989 with Professor Bruce D. Marsh who is head of the Department of Earth and Planetary Sciences at The Johns Hopkins University and is a recognized expert on volcanic processes. Professor Marsh presented an overview of the state-of-knowledge with regard to volcanogenesis. He made several observations pertaining to the prediction of volcanic hazards in general, and specifically to the work that has been done to date in the southern Basin and Range Province which includes the Yucca Mountain site.

First, he urged that volcanogenesis studies be undertaken in the context of a systems approach that includes integration of geochemical, geologic, tectonic, and geophysical studies of the immediate vicinity of Yucca Mountain aimed specifically at the volcanogenesis problem, as well as more regional studies conducted as part of the general site characterization. This supports our point of view as well as the view of the NRC staff that integration of multidisciplinary data is essential to studying potential geologic processes and events at Yucca Mountain.

Secondly, he suggested that consideration should be given to the establishment of a small, "blue-ribbon" peer panel to examine the state-of-knowledge of volcanogenesis as it pertains to southern Nevada and Yucca Mountain in particular and, based on requirements such as 10 CFR Part 60, to provide guidelines on the appropriate studies to fulfill a systems approach to the investigation of volcanism. This panel, consisting of recognized experts in the germane disciplines, and working under the aegis of the National Research Council or a similar impartial body, could, in a limited period of time, provide a fresh, comprehensive, unbiased approach to the issue of volcanism. The report from this panel could provide the Department of

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Energy with invaluable guidance on one aspect of their future site characterization activities at Yucca Mountain and would make available to all interested organizations basic information for review and assessment of volcanism at the site. The Committee believes that there is merit to Dr. Marsh's proposal. We recommend that efforts be initiated to follow through on his recommendations. We, of course, are prepared to assist in further developing this suggestion and bringing it to fruition.

Sincerely,

A handwritten signature in cursive script that reads "Dade W. Moeller". The signature is written in dark ink and is positioned above the printed name and title.

Dade W. Moeller  
Chairman