

December 13, 2002

The Honorable Richard A. Meserve  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

SUBJECT: ACNW MEETING IN NEVADA, SEPTEMBER 23-26, 2002

Dear Chairman Meserve:

The Advisory Committee on Nuclear Waste (ACNW) visited the State of Nevada during the week of September 23-26, 2002. As is customary during our Nevada visits, the ACNW held a public meeting to hear from interested stakeholders who wished to address the Committee. We also visited the proposed high-level radioactive waste repository site at Yucca Mountain as well as the Nevada Test Site low-level radioactive waste disposal facility. Lastly, the Committee held its 137<sup>th</sup> meeting in Las Vegas and heard several technical presentations from the U.S. Department of Energy (DOE) and the U. S. Nuclear Regulatory Commission (NRC) staffs. This letter summarizes some observations from the public meeting and DOE technical presentations. Additional detail on the Committee's activities for the week can be found in the meeting minutes of the 137<sup>th</sup> meeting of the ACNW.

## **PUBLIC MEETING**

Despite extensive advance publicity and notices of our intent to hold a public meeting in Pahrump, Nevada, only a few stakeholders attended the meeting on the evening of September 23, 2002. Overall, the Committee heard and received stakeholder comments on (1) how to improve the Draft Yucca Mountain Review Plan (YMRP – NUREG-1804), (2) whether the private sector is more qualified than DOE to construct and operate a Yucca Mountain repository, (3) the need for DOE to resolve certain outstanding technical issues before submitting its license application to the NRC, and (4) a recommended approach to improve the technical bases for scientific decision-making at Yucca Mountain.<sup>1</sup>

## **137<sup>th</sup> ACNW MEETING**

At its 137<sup>th</sup> meeting in Las Vegas, on September 25-26, 2002, the Committee received briefings from the DOE and NRC staffs on several technical topics, including:

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<sup>1</sup> A summary of Stakeholders' oral and written comments can be found in the ACNW's 137<sup>th</sup> meeting minutes.

- the status of Key Technical Issue resolution,
- the Integrated Issue Resolution Status Report (NUREG-1762),
- the public comments received on the draft YMRP,
- a history of well drilling in the Amargosa Valley (draft NUREG-1710), and
- scientific updates on selected DOE site characterization activities.

The following paragraphs summarize key ACNW observations regarding selected DOE scientific update presentations in the following areas: information on Chlorine-36 ( $^{36}\text{Cl}$ ) measurements, radiological engineering for repository surface facilities, and repository subsurface design.

### **Statistical Analysis of Chlorine-36 Measurements**

The material presented to the Committee on the controversy surrounding differing interpretations of  $^{36}\text{Cl}$  measurements by the Los Alamos and Lawrence Livermore National Laboratories did not include any formal statistical analyses. Data were presented to the Committee graphically and were not easily explained. The measurement and interpretation of  $^{36}\text{Cl}$  is difficult and subject to interference, inhomogeneity, sampling and measurement uncertainty, and other variability. Detailed and rigorous hypothesis testing and comprehensive statistical analyses are needed to strengthen any analysis and interpretation of these data. The NRC staff should bear this in mind in evaluating interpretations of the data presented by the DOE.

### **Radiological Engineering for Surface Facilities**

The design of the surface facilities for the Yucca Mountain repository should include detailed studies and analyses related to radiological protection issues. Time and motion studies, and the analysis of radiation and contamination control will be needed for the detailed design phase leading to a license application. These studies and analyses should be conducted using established principles to ensure that exposure will be as low as reasonably achievable (ALARA).

### **Subsurface Repository Design**

The Committee received presentations regarding the DOE plans for project design and implementation. The Committee has concerns about the slow progress of the design effort, considering the proposed schedule for submitting a license application. Significant changes appear to be in progress based on cost, schedule, and funding requirements, but it is not clear how DOE will integrate the effects of these design decisions into its total system performance assessments, and how DOE will keep the performance assessments updated.

Sincerely,

**/RA/**

George M. Hornberger  
Chairman