

April 12, 2002

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

SUBJECT: SUMMARY REPORT — 133RD MEETING OF THE ADVISORY COMMITTEE ON
NUCLEAR WASTE, MARCH 19–21, 2002, AND OTHER RELATED COMMITTEE
ACTIVITIES

Dear Chairman Meserve:

The Advisory Committee on Nuclear Waste (ACNW or the Committee) held its 133rd meeting on March 19–21, 2002, at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland. During that meeting, the Committee discussed several matters, as discussed below. The Committee also approved one letter report, entitled “Review and Evaluation of the U.S. Nuclear Regulatory Commission’s Waste Safety Research Program” (a letter to the Honorable Richard A. Meserve, Chairman, NRC, from George M. Hornberger, Chairman, ACNW, dated March 22, 2002).

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. ACNW Planning and Procedures

The Committee approved the following topics for discussion during its 134th meeting, scheduled for April 16–18, 2002:

- High-Level Waste Risk Insights Initiative — The Committee will hear a presentation by the NRC staff concerning the preliminary results of its risk insights initiative.
- Amendment to 10 CFR Part 63 — The NRC staff will brief the Committee on its final rulemaking amendment to 10 CFR Part 63 which defines the term and gives the probability for “unlikely events” at the proposed high-level waste (HLW) repository at Yucca Mountain, Nevada.
- Preparation of ACNW Reports — The Committee will discuss proposed reports on the following topics.
 - HLW Risk Insights Initiative
 - Amendment to 10 CFR Part 63 “Unlikely Events” - Final Rule
 - Update on Igneous Activity including Performance Assessment Analyses
 - HLW Performance Assessment Sensitivity Studies
 - Final Research Plan on Radionuclide Transport in the Environment

- Yucca Mountain Review Plan, Revision 2
- Final Radionuclide Transport Research Plan — Representatives from the Office of Nuclear Regulatory Research will brief the Committee on its final research plan concerning radionuclide transport in the environment.
- ACNW 2002 Action Plan — The Committee will discuss a draft of its 2002 Action Plan.
- Site Recommendation - License Application: Path Forward — The Committee will hear a presentation from the representatives of the U.S. Department of Energy (DOE) on its proposed plans to move forward from the submission of the Yucca Mountain Site Recommendation.
- Yucca Mountain Review Plan, Revision 2 — The Committee will discuss its comments on its audit of Revision 2 to the Yucca Mountain Review Plan.

2. Update on the Department of Energy's Performance Assessment Program Activities for the Proposed High-Level Waste Repository at Yucca Mountain, Nevada

The staff of DOE presented a briefing on the status of its performance assessment activities for the proposed geologic HLW repository at Yucca Mountain, Nevada. The DOE presentations covered the following areas:

- Technical updates since the issuance of the Preliminary Site Suitability Evaluation Report in 2001
- An overview of the forthcoming "Uncertainty Analyses and Strategy Report," which is intended to improve the treatment (i.e., realism) of uncertainty in any total system performance assessment (TSPA) supporting a potential license application (LA) under 10 CFR Part 63
- The process for prioritizing the remaining TSPA and other scientific activities necessary to support a potential LA under 10 CFR Part 63

Conclusions/Committee Action

As a result of its analyses to prioritize the remaining performance assessments, the DOE staff noted that it was currently reevaluating the significance of the NRC's suite of key technical issue agreements.

3. Preparation for Meeting with the Commission

The Committee discussed the following topics for its March 20, 2002, meeting with the Commission:

- Issue Resolution and Sufficiency Review
- Key Technical Issue Program Status
- Total System Performance Assessment-Site Recommendation
- Review of NRC-Sponsored Research

4. High-Level Waste Performance Assessment Sensitivity Studies

The staff's of the NRC and the Center for Nuclear Waste Regulatory Analyses (CNWRA) presented a briefing on the results of their recent analyses of the performance sensitivity and uncertainty of the proposed Yucca Mountain repository. To develop the capability to review an independent LA, consistent with the agency's pre-licensing function, the NRC staff is using uncertainty and sensitivity analyses to achieve the following purposes:

- Gain understanding of and insight into repository system performance
- Help to verify the correctness of performance assessment calculations
- Evaluate the influence of various modeling assumptions on results
- Identify where the agency may need to collect additional data for parameters that most influence the performance assessment results

In particular, the staff addressed the following areas:

- The NRC's preliminary TSPA results
- Sensitivity analysis results
- Effects of variance and uncertainty on data treatment
- Preliminary risk insights

Conclusions/Committee Action

The ACNW will consider this information in preparing future reports to the Commission on staff efforts in this area.

5. Yucca Mountain Review Plan, Revision 2

The ACNW heard a presentation by the NRC staff concerning Revision 2 of the Yucca Mountain Review Plan (YMRP). The NRC staff covered the general review philosophy, as well as sections of the YMRP related to the preclosure and postclosure safety assessments, the research and development program to address safety questions, the performance confirmation review, and the quality assurance program review.

Conclusions/Committee Action

In the coming months, the ACNW intends to submit a report to the Commission on this topic. This report will include comments on whether the use of the YMRP will lead to a risk-informed licensing review, and how well the YMRP integrates the various review areas.

6. RECONCILIATION OF ACNW COMMENTS AND RECOMMENDATIONS

The Committee considered the response from the Executive Director for Operations, dated March 6, 2002, concerning the ACNW letter entitled "Risk-Informed Regulation in the Office of Nuclear Material Safety and Safeguards." That letter discussed the recommendations resulting from a November 14, 2001, joint ACRS/ACNW subcommittee review of Chapter 3 of the NRC's (NUREG-1520) with the Integrated Safety Assessment (ISA).

Conclusions/Committee Action

The Committee is considering a reply to the EDO's response to the joint ACNW/ACRS comments on the ISA.

Sincerely,

/RA/

George M. Hornberger
Chairman