

July 17, 2003

The Honorable Nils J. Diaz
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: SUMMARY REPORT — 143RD MEETING OF THE ADVISORY COMMITTEE
ON NUCLEAR WASTE, JUNE 24–25, 2003, AND OTHER RELATED
COMMITTEE ACTIVITIES

Dear Chairman Diaz:

The Advisory Committee on Nuclear Waste (ACNW or the Committee) held its 143rd meeting on June 24–25, 2003, at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland. During that meeting, the Committee discussed the following matters.

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. DOE Strategy for Resolving Key Technical Issues (KTIs)

The NRC and U.S. Department of Energy (DOE) staffs have been using the pre-licensing consultation process to identify information that should be included in any license application to construct a geologic repository at Yucca Mountain, Nevada. As part of that process, the NRC staff identified additional information needs (i.e., gaps in process knowledge, data, computer codes) related to each of the nine key technical issues (KTIs). The respective staffs subsequently reached agreement on 293 agreement items viewed to be important for inclusion in a license application. If DOE provides the needed information identified, completion of each KTI agreement is expected to enhance the likelihood that the license application will be complete and of high quality. Through this process, NRC and DOE have thus far reached “closure” (resolution) on the adequacy of the additional documentation submissions for about 78 of the agreements.

DOE is now looking at ways to introduce efficiencies into the existing resolution process to ensure that all agreements will be addressed by the projected 2004 date for submitting a license application. At the 143rd meeting, DOE staff provided an information briefing on DOE’s new proposal to bundle groups of similar KTI agreements—similar in that the KTI agreements in question share a common information need. Under this proposal, about 194 agreement items, associated mostly with postclosure issues, would fall into 14 bundles of varying size called “issue response groups”; 13 of the KTI agreements (mostly pre-closure issues) would not be bundled and would be addressed individually.¹

¹ It is estimated that there are about eight other KTI agreements currently in varying stages of review by the NRC staff.

At this time, the NRC staff has not reviewed DOE's bundling proposal.² Later this fall, DOE expects to provide the NRC staff with its technical basis for bundling individual agreements into a particular issue response group. Regardless of the approach used by DOE to package its responses, both DOE and NRC have expressed their commitment to properly and adequately address each KTI agreement by the time the DOE submits its license application.

Committee Action

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

2. Use of Risk Information as a Basis for DOE/NRC Agreement Closure

The Committee heard presentations by DOE and NRC staffs on using risk information as a basis for KTI agreement closure. The NRC staff will accept such a rationale for agreement closure provided the combined effects of uncertainty, including the propagation of uncertainties, receive appropriate attention.

Committee Action

The Committee will review the staff's final report on risk insights and will request a briefing from the staff on the report.

3. NRC Staff Report on the Risk Significance Ranking of the 293 KTI Agreements

The Committee received an update from the NRC's Office of Nuclear Material Safety and Safeguards staff on how the 293 key technical issue agreements were ranked. The three rankings chosen were high, medium, and low significance to risk.

The NRC staff has been responding to a Commission staff requirements memorandum written after the staff's March 3, 2003, briefing to the Commission on the waste arena. This resulted in a memorandum from the Executive Director for Operations to the Commission, dated June 5, 2003, that describes the staff's approach to risk-ranking the agreements, provides background information about the technical difficulty of many of the agreements, and explains how the information is being used to risk inform the pre-licensing process for Yucca Mountain. The staff plans to produce a final report on risk insights by October 2003.

Committee Action

The Committee will continue to follow the resolution of KTI agreements and plans to produce a brief report on risk insights in July 2003.

² DOE formally transmitted its proposal to the NRC staff on June 23, 2003.

4. Dry Cask Spent Fuel Storage Characterization Project

NRC's Office of Nuclear Regulatory Research (RES) staff presented the results of testing on spent fuel of various ages and burnup rates. The tests were conducted to assure the fuel would not degrade, leading to cladding rupture. Tests to date confirm that spent fuel can be stored in dry casks for an additional 20 to 100 years.

Committee Action

The Committee will continue to follow this program and is interested in the extrapolation of results to the long-term behavior (thousands of years) of the spent fuel and the implications of intact spent fuel cladding for the source term for the proposed HLW repository.

5. 2003–2004 ACNW Research Report and Update on Waste Management-Related Research

The ACNW performed its annual review of NRC-sponsored waste-related research for fiscal years 2003 and 2004. A representative from RES's Radiation Protection, Environmental Risk and Waste Management Branch provided the following information on this program:

- current and future proposed budget
- peer review recommendations for the current program plan
- scope of current program
- areas for future work

During this presentation, it was noted that RES is attempting to scope out new "anticipatory" research needs related to the geologic disposal of spent nuclear fuel and high-level radioactive waste (HLW) as well as new research needs in the area of radiation health effects.

Committee Action

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

6. Plans for Performance Confirmation Working Group

The Committee discussed the final agenda and plans for the Performance Confirmation Working Group scheduled for the 144th ACNW meeting, July 29–30, 2003.

7. Election of Officers

The Committee elected Drs. B. John Garrick as Chairman and Michael T. Ryan as Vice-Chairman. Their terms of office will run from July 1, 2003, through June 30, 2004.

8. Proposed Agenda for the 144th ACNW MEETING

The Committee agreed to consider the following topics at its 144th meeting on July 29–31, 2003:

- Working Group on Performance Confirmation Plans for the Proposed Yucca Mountain HLW Repository
- Risk-Informed Regulation for NMSS: Status Report and Plan for Future Work
- ACNW September Retreat
- ACNW Preparation for October Meeting With the NRC Commissioners
- ACNW November Site Visit to the Proposed Yucca Mountain Repository
- Preparation of ACNW Reports
 - Performance Confirmation Working Group
 - 2003-2004 ACNW Research Report
 - Briefing on the HLW Risk Insights Initiative and the Risk-Informed Issue Resolution Process
 - Role of ACNW in the Yucca Mountain License Application Review
 - Risk-Informed Regulation for NMSS

Sincerely,

/RA/

George M. Hornberger
Chairman