



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

ACNWS-0078

PDR 11/1/96

March 21, 1996

The Honorable Shirley Ann Jackson
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Jackson:

SUBJECT: SUMMARY REPORT - EIGHTY-FIRST MEETING OF THE ADVISORY COMMITTEE ON NUCLEAR WASTE, JANUARY 24-26 1996, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 81st meeting, January 24-26, 1996, held at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, the Advisory Committee on Nuclear Waste discussed several matters and completed the following reports.

REPORTS

1. Issues and NRC Activities Associated with the National Research Council's Report, "Technical Bases for Yucca Mountain Standards" (Letter to The Honorable Shirley Ann Jackson, Chairman, NRC, from Paul W. Pomeroy, Chairman, ACNW, dated February 9, 1996)
2. Comments on High-Level Waste Prelicensing Program Strategy and Key Technical Issues (Letter to The Honorable Shirley Ann Jackson, Chairman, NRC, from Paul W. Pomeroy, Chairman, ACNW, dated February 16, 1996)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Meeting with the Executive Director for Operations

Mr. James Taylor, Executive Director for Operations, and members of his staff briefed the Committee on issues and concerns of mutual interest, including: the fiscal climate both at NRC and in the Federal Government, potential external regulation of DOE nuclear safety by NRC, the strategic assessment and rebase-lining effort at NRC, spent fuel storage issues, the LLW program, and NRC's safety mission and the process used to carry out this mission.

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2. Design Basis Events (DBE) for the Geologic Repository Operations Area (GROA)

Mr. Richard Weller, NMSS, briefed the Committee on the staff's recommendations for the final Design Basis Event rule. He noted that the staff's proposal concurred in part, and disagreed in part, with the DOE April 1990 Petition for Rulemaking. He also summarized the public comments received along with the staff general recommendation that there be no major modification to the proposed rule as a result of those comments.

Conclusion/Action Items

Although the Committee posed some questions and provided comments, it decided that no further written comments were necessary.

3. Technical Training Center (TTC) Programs

The AEOD staff presented an overview of the NRC Technical Training Program (TTP). The staff summarized the briefing with an invitation to visit the Center in Chattanooga, Tennessee, and attend courses offered in radiation protection and waste disposal. They indicated that they welcome ACNW interest and comments, and would like to schedule follow-on briefings with the ACNW. The Committee emphasized its interest in a continued dialogue on programs designed to train and support the NRC staff in the area of waste disposal.

4. Site Decommissioning Management Plan (SDMP)

Mr. Mark Thaggard, NMSS, discussed the performance assessment techniques utilized by the staff in evaluating the licensee's request to authorize on-site disposal. After presenting a brief background and history of the site [one that is currently listed in the NRC's Site Decommissioning Management Plan (SDMP)] and a discussion of possible alternatives to on-site disposal, the general performance assessment strategy and approach were discussed. Due to the need for an expedited analysis, there was insufficient time for an automated system code to be developed and, therefore, a deterministic approach was used.

Conclusion/Action Items

The Committee stated regret that it was not possible to utilize a probabilistic approach similar to the one advanced in the draft Branch Technical Position on Low-Level Waste Performance Assessment. The Committee indicated its intent to continue to advocate the use of probabilistic risk-based performance assessments in the agency, and will continue to monitor its adoption in the resolution of SDMP facilities.

5. Residual Contamination Background Level Determination

Dr. John Glenn, RES, presented the results of a recent (January 16-18, 1996) tabletop exercise for a thorium processing facility. The purpose of this exercise was to test the decision-making process rather than the background level detection capability. He provided the Committee with several insights that were gained from the exercise, as well as a number of implementation issues relevant to the decontamination of facilities with low levels of U and/or Th contamination.

Mr. George Powers, RES, discussed a recent demonstration performed to test the final status survey methodology on a uranium site. Survey implementation issues and results were discussed and analysis techniques were described. Representatives from the National Mining Association and the Nuclear Energy Institute also presented their views on background contamination level determinations and the possible consequential impact upon their constituencies.

Conclusion/Action Items

The Committee intends to revisit this issue when the staff issues its final acceptance criteria for residual contamination levels. Of particular interest to the ACNW will be the guidance provided for background level determination and subsequent site release and license termination.

6. Meeting with the Acting Director, Division of Waste Management, NMSS

Ms. Margaret Federline met with the Committee to discuss items of current interest. Topics discussed included: the current reorganization of the division, results of the latest NRC/DOE management meeting, plans for an issue resolution process in the high-level waste program, and an update on DOE's progress at the Yucca Mountain site.

Conclusion/Action Items

This portion of the meeting was part of a regularly scheduled information exchange between the Committee and the Acting Director.

7. Insights into High-Level Waste (HLW) Source Term and Natural Analogs

Dr. Rodney Ewing, ACNW consultant, presented his views on the use of mineralogy and materials science concepts to evaluate the long-term durability of waste form materials. He proposed that modeling the physics and chemistry of a waste form is easier than modeling groundwater flow and transport, is more easily validated, and can be performed with greater confidence.

Dr. Ewing discussed several examples of how materials science and natural analogs can be used to increase confidence and reduce uncertainty in looking at the corrosion products of UO_2 , and described a project at the Oklo natural analog that looks at uraninite as an analog for spent nuclear fuel.

Dr. Ewing concluded his brief talk after answering questions from the Committee on topics including insights on the likelihood of reconstitution of radionuclides, reasonable time frame of performance, and use of natural analogs to understand long-term behavior of glass.

Conclusion/Action Items

Dr. Ewing's presentation is part of a continuing effort by the Committee to have experts give briefings in areas of interest to the ACNW.

8. Update ACNW Priorities/Task Action Plans

The Committee discussed the current list of priority issues, and agreed to add two additional issues to the list. These items are: source term/containers dealing with the waste package; and negligible incremental risk level which will address the biological effects of low levels of ionizing radiation. Dr. John Larkins, Executive Director, ACNW, agreed to discuss these two new tasks during his next visit with Chairman Jackson.

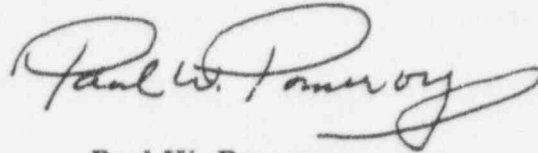
Proposed Schedule for the 82nd ACNW Meeting

The Committee agreed to consider the following during the 82nd, ACNW Meeting, March 27-29, 1996:

- Time Frames for Regulatory Concern - The Committee will review time frames for regulatory compliance in the disposal of high-and low-level radioactive waste.
- NRC Staff Issue Resolution Process - The Committee will review various NRC staff initiatives that will be used to bring about closure on issues raised in its review of DOE's high-level waste program.
- Meeting with the Director, NRC's Division of Waste Management, Office of Nuclear Materials Safety and Safeguards - The Director will discuss items of current interest related to the Division of Waste Management programs which may include: progress at the Yucca Mountain site, comments on DOE's Total System Performance Assessment, and a draft technical position on expert elicitation.

- Alternatives for NRC's LLW Program - The Committee will review the NRC staff's discussion of comments and analysis of alternatives for NRC's low-level waste program.
- Joint ACRS/ACNW Subcommittee Meeting on Spent Fuel Storage - The Committee will hear a report from two of its members who participated in the subcommittee meeting.
- Committee Activities/Future Agenda - The Committee will consider topics proposed for future consideration by the full Committee and Working Groups. The Committee will discuss ACNW-related activities of individual members. The Committee will also consider potential new ACNW members.

Sincerely,

A handwritten signature in cursive script, reading "Paul W. Pomeroy". The signature is fluid and stylized, with a long horizontal stroke at the end.

Paul W. Pomeroy
Chairman