



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

ACNWS-0032

July 18, 1991

The Honorable Ivan Selin  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Chairman Selin:

SUBJECT: SUMMARY REPORT - THIRTY-SECOND MEETING OF THE ADVISORY  
COMMITTEE ON NUCLEAR WASTE, JUNE 20, 1991

During our 32nd meeting, June 20, 1991, we completed the activities  
noted below including the reports and memoranda listed.

REPORTS AND MEMORANDA

- Comments Regarding 10 CFR Part 61 Proposed Revisions Related to Groundwater Protection (Report to Chairman Carr, dated June 27, 1991)
- Response to Questions Accompanying Working Draft #3 of the EPA Standards (Report to Chairman Carr, dated June 27, 1991)
- Continuation of Semi-Annual Reports (Memorandum for Mr. James M. Taylor, Executive Director for Operations, from Mr. Raymond F. Fraley, dated June 24, 1991, Enclosure 1)

HIGHLIGHTS OF MATTERS CONSIDERED BY THE COMMITTEE

- Leaching Resistance of LLW Waste Form

The Committee continued its discussion and issued a report in response to a Staff Requirements Memorandum (SRM), dated December 30, 1990, concerning proposed revision of Part 61 with regard to leaching resistance of the low-level waste form and groundwater protection requirements.

Representatives of the Office of Research briefed the Committee on a recent "brainstorming" meeting on the retention and retardation of radionuclides. There were some new ideas that came out of this meeting that will need to be addressed by further research. The results of the "brainstorming" meeting will be issued as a report to be made available shortly.

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- Joint Meeting of ACNW Working Groups on Expert Judgment and Human Intrusion

The Committee heard a report on a joint meeting of the Working Group on Expert Judgment and the Working Group on Human Intrusion, held on June 18-19, 1991. The meeting focused on the actual mechanics of eliciting expert opinion. This included discussions on who will identify and select the experts, as well as how the selected experts will be trained and how their opinions will be aggregated. Human intrusion was used to relate the elicitation process to a licensing application. Participants included normative experts, a representative of the State of Nevada, and NRC and DOE staff and consultants involved with Yucca Mountain and WIPP.

The Committee agreed to continue its discussion and prepare a report on the use of expert judgment in the licensing of high-level and low-level waste facilities during the next ACNW meeting on July 25-26, 1991.

- Working Draft #3 of the 40 CFR Part 191, High-Level Waste Repository Standards

The Committee continued its discussion of a response to the six questions posed by EPA in its Working Draft #3 of 40 CFR Part 191, Standards for the Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes.

The Committee approved a report to Chairman Carr on this matter and recommended that it be forwarded to Mr. Floyd Galpin, Environmental Protection Agency.

- ACNW Future Activities

- Dr. Moeller reported that the NRC staff met on May 15, 1991, with representatives from EPA, ORNL, and the contractor (Cox and Associates) to review plans for beginning Phase II of the project to develop a national mixed waste profile. Phase II will involve the design and execution of a mixed waste survey. Dr. Hinze recommended that the Committee be briefed on Phase II review plans after the report is issued.

- Dr. Moeller informed the Committee that the Office of Research will develop a regulatory guide on "Performance Assessment of Low-Level Radioactive Waste Disposal Facilities." The Committee requested that it be kept informed on the development of this regulatory guide.

- Dr. Moeller noted that the Defense Nuclear Facilities Safety Board recently conducted a review of the Waste Isolation Pilot Plant (WIPP). One of the questions raised by the Board was whether the DOE will license the operators for WIPP. Further discussion of this subject is planned.
- Dr. Moeller stated that the NRC staff has conducted a Phase I review on the following DOE Study Plans:
  - The Characterization of the Flood Potential and Debris Hazards
  - Historical and Current Seismicity
  - Quaternary Faulting Within the Site Area
  - Characterization of the Unsaturated Zone Infiltration

The NRC staff does not plan to conduct a Phase II (in-depth) review. The Committee agreed not to take any action at this time.

- The Committee will meet with the Commissioners during the 33rd ACNW meeting (July 25-26, 1991) to discuss items of mutual interest. The Committee proposed the following topics as the basis for discussion:
  - Leaching resistance of the low-level waste form and groundwater protection requirements
  - Uncertainties in implementing the EPA HLW standards and the response to six questions accompanying working draft #3 of the EPA standards
  - Visit to the Center for Nuclear Waste Regulatory Analyses
  - Use of expert judgment in performance assessment for a geologic repository
  - Integration of geophysics into site characterization of an HLW repository
  - Preview of future working group meetings

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Appendix A summarizes the proposed items for future meetings of the Committee and related Working Groups. This list includes items proposed by the Commissioners and NRC staff as well as ACNW members.

Sincerely,

*Dade W. Moeller*

Dade W. Moeller  
Chairman

Enclosure:  
Memorandum for James M. Taylor  
from Raymond F. Fraley, dated  
June 24, 1991

## APPENDIX A. FUTURE AGENDA

**33rd ACNW Committee Meeting July 25-26, 1991 (Tentative Agenda)**

Meeting with the NRC Commissioners - The Committee will meet with the NRC Commissioners to discuss items of mutual interest, proposed topics include:

- Leaching resistance of the low-level waste form and groundwater protection requirements
- Uncertainties in implementing the EPA HLW standards and the response to six questions posed by EPA in Working Draft #3 of these standards
- Introduction and preview of future working group meetings
- Highlights of the ACNW's visit to the Center for Nuclear Waste Regulatory Analyses
- Use of expert judgment in performance assessment for a geologic repository
- Integration of geophysics into site characterization of an HLW repository

Visit to the Center for Nuclear Waste Regulatory Analyses - The Committee will discuss its recent trip to and meeting at the Center for Nuclear Waste Regulatory Analyses.

Expert Judgment - The Committee will discuss and continue preparation of a report on the use of expert judgment in conducting performance assessments in support of licensing of high-level and low-level waste repositories.

**Working Group Meetings**

Review of Regulatory Guides for Implementing Revisions to 10 CFR Part 20, mid-September 1991, (Tentative) 7920 Norfolk Avenue, Bethesda, MD - The Working Group will review, discuss and make recommendations on seven regulatory guides:

- Interpretation of Bioassay Measurements
- Instruction on Health Risks from Occupational Radiation Exposure
- Instructions to Pregnant Women
- Criteria and Procedures for Summation of Internal and External Occupational Doses
- Dose to Embryo/Fetus

- Assessing External Radiation Doses from Airborne Radioactive Materials
- Air Sampling

The following two draft regulatory guides will also be considered:

- Preparation of Applications for Use of Sealed Sources and Devices for Performing Industrial Radiography
- Preparation of Applications for Medical Uses

NRC Staff Computer Modeling and Performance Assessment Capabilities in HLW and LLW, September 11-13, 1991, 7920 Norfolk Avenue, Bethesda, MD - The Working Group will review, discuss and make recommendations regarding the NRC staff capabilities to make independent evaluations of licensee proposals with respect to the performance of low-level and high-level radioactive disposal facilities. Emphasis will be placed on computational capabilities involving computer modeling, documentation, and verification and validation.

Geologic Dating, October 22, 1991, 7920 Norfolk Avenue, Bethesda, MD - The Working Group will review and discuss the problems and limitations associated with the various quaternary dating methods to be used in site characterization of an HLW repository.

Residual Contamination Clean-up Criteria, October 25, 1991, 7920 Norfolk Avenue, Bethesda, MD - The Working Group will review, discuss and make recommendations regarding the soil clean-up criteria and acceptable levels for unrestricted use of contaminated sites that have been, or were at one time, under AEC or NRC license. The NRC staff is in the process of determining acceptable radionuclide concentration levels for uranium- and thorium-contaminated soils and surface level contamination limits for structures to be released for unrestricted use.

Long-Term Climate Change in the Area of the Southern Basin and Range, November 19, 1991, 7920 Norfolk Avenue, Bethesda, MD - The Working Group will review and discuss potential long-term climate changes and the impact on performance assessments of a proposed HLW repository.

Post-Closure Monitoring, November 22, 1991, 7920 Norfolk Avenue, Bethesda, MD - The Working Group will review the potential problems and possible limitations associated with the post-closure monitoring of a proposed HLW repository. The potential utilization of non-invasive methods in providing such a capability as well as the duration of such monitoring, and the significance and impact of the results will also be considered.

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Presence of Natural Resources at the Proposed HLW Site, December 17, 1991, 7920 Norfolk Avenue, Bethesda, MD - The Working Group will discuss methodologies for the assessment of the potential for natural resources at the proposed HLW disposal site.