



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

ACNWS-0026  
PDR 2/6/91

January 16, 1991

The Honorable Kenneth M. Carr  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: SUMMARY REPORT - TWENTY SIXTH MEETING OF THE ADVISORY  
COMMITTEE ON NUCLEAR WASTE, DECEMBER 12-13, 1990

During its 26th meeting, December 12-13, 1990, the Advisory  
Committee on Nuclear Waste discussed several matters and completed  
the letter report noted below.

LETTER

- Program Plan for the Advisory Committee on Nuclear Waste  
(Letter for Chairman Carr from Dade Moeller, dated December  
19, 1990.)

HIGHLIGHTS OF CERTAIN MATTERS CONSIDERED BY THE COMMITTEE

- Conforming 10 CFR Part 60, High-Level Waste Repository  
Subsystem Performance Requirements, with the EPA High-Level  
Waste Standards

Mr. Daniel Fehringer, NMSS, briefed the Committee on the Part  
60 subsystem performance objectives. The objective of this  
briefing was to provide background information for the  
examination of the nexus between the subsystem performance  
criteria in 10 CFR Part 60 and the EPA HLW standards in 40 CFR  
Part 191 in response to a request by Commissioner Curtiss.

Dr. Moeller agreed to request additional background  
information on the Environmental Protection Agency standards  
from Mr. Richard Guimond, EPA.

The Committee plans to continue discussion on the 10 CFR Part  
60 subsystem performance objectives and their relation to the  
40 CFR Part 191 EPA standards at future meetings. A Committee  
report to the Commission will be prepared.

- Meeting with the NRC Commissioners

The Committee discussed the following items of mutual interest  
with the Commissioners:

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- EPA's High-Level Waste Standards
- Carbon-14 Release and Migration Issues
- Mixed Wastes
- Draft Technical Position on Waste Forms
- Human Intrusion
- Potential Working Group Meetings

The Committee will respond to the Commission's request as stated in the Staff Requirements memorandum for Dade Moeller from Samuel Chilk, dated December 31, 1990.

- NRC Staff Plans for Reviewing DOE Study Plans and DOE Site Characterization Progress Reports

The Committee was briefed by the NMSS staff on the proposed revisions to the "Review Plan for NRC Staff Review of DOE Site Characterization Plan Progress Reports" and the "Review Plan for NRC Staff Review of DOE Study Plans." The briefing included a discussion of the staff's approach for review of Study Plans and progress reports and an update on Study Plans received from the DOE and their review. This briefing was for information only.

- NRC Staff Review of Two DOE Study Plans

The Committee was briefed by the HLWM staff on the results of the Detailed Technical Reviews of the:

- Study Plan for Mineralogy, Petrology, and Chemistry of Transport Pathways (8.3.1.3.2.1)
- Study Plan for the Characterization of Volcanic Features (8.3.1.8.5.1)

The members discussed the relative merits of reviewing in detail the NRC staff's technical reviews of the DOE study plans. The Committee agreed to develop a scheme for the review of selected plans.

- Reports from ACNW Working Groups

#### Migration of Carbon-14

The Working Group Chairman summarized the highlights of the October 26, 1990, Working Group meeting noting, in particular, the relatively small magnitude of the projected carbon-14 releases from the proposed high-level waste repository as

contrasted to the large amounts currently being produced and/or generated in nature (cosmic ray interactions), nuclear power plants, and past atmospheric nuclear weapons tests. The regulatory release limits for this radionuclide appear to be inconsistent with the potential additional hazard. The Committee plans to consider this topic further during the January 23-24, 1991, meeting.

Mixed Wastes

The Working Group Chairman briefed the Committee on the review and discussion of the interchangeability (if any) of EPA requirements for land burial of hazardous materials and the NRC LLW disposal site requirements, particularly as related to the disposal of mixed wastes. This review is being performed to fulfill a request from Commissioner Curtiss.

The Committee plans to include additional discussion on this subject at its upcoming January 23-24, 1991, meeting.

• Election of ACNW Officers

The Committee reelected Dr. Dade W. Moeller and Dr. Martin J. Steindler to the positions of Chairman and Vice Chairman, respectively, for the calendar year 1991.

• ACNW Future Activities

- The Committee agreed to reserve the following dates for ACNW meetings during calendar year 1991:

27th	January 23-24, 1991
28th	February 20-22, 1991
29th	March 20-22, 1991
30th	April 23-24, 1991
31st	May 22-23, 1991
32nd	June 19-21, 1991
33rd	July 24-26, 1991
34th	August 28-29, 1991
35th	September 25-27, 1991
36th	October 23-25, 1991
37th	November 20-22, 1991
38th	December 18-19, 1991

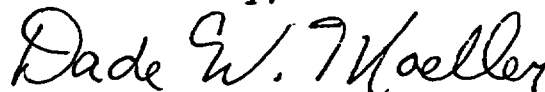
The meetings noted above will be held as needed to conduct Committee business.

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- The Committee agreed to invite representatives from one or more of the following organizations to join in additional discussions on the mixed wastes issues: National Institutes of Health, New England Nuclear (duPont), Lawrence Livermore National Laboratories, Oak Ridge National Laboratory, and Sandia National Laboratories.
- The Committee requested that time be scheduled during a future meeting to examine 10 CFR Part 61 as it relates to low-level waste disposal facilities that utilize methods other than shallow land burial.
- The members expressed interest in having a summary and critique of the high-level waste repository standards formulated by other countries. This would include standards proposed by Nordic countries, as well as those proposed by Canada, France, the IAEA and the ICRP.
- The Committee agreed to schedule a working group meeting to discuss seismic hazards and volcanism in the vicinity of the Yucca Mountain Site.
- The Committee discussed the feasibility of scheduling a joint meeting with the Nuclear Waste Technical Review Board. It was agreed that any such meeting, if scheduled, would be solely for the purpose of gathering information. The Committee will decide in the near future on whether such a meeting should be scheduled, and, if so, what topics will be discussed.
- The Committee agreed to schedule, when appropriate, a visit to the Center for Nuclear Waste Regulatory Analyses in San Antonio, Texas, for an update on the Center's activities.

Appendix A summarizes the tentative agenda items that were proposed 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  
Chairman

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APPENDIX A. FUTURE AGENDA

27th ACNW Committee Meeting January 23-24, 1991 (Tentative Agenda)

Conforming 10 CFR Part 60, High-Level Waste Repository Subsystem Performance Requirements, with the EPA High-Level Waste Standards (Open) - The Committee will continue discussions on 10 CFR Part 60, high-level waste repository subsystem performance requirements and their conformance with the EPA high-level waste standards.

Mixed Wastes (Open) - The Committee will continue deliberations concerning the NRC and EPA regulations governing the disposal of mixed waste. Advice has been requested on comparability of NRC and EPA requirements.

Carbon-14 Release and Migration (Open) - The Committee will continue deliberations concerning potential carbon-14 release and migration.

Committee Priorities (Open) - The Committee will discuss its top three priorities for review of nuclear waste issues and report these priorities to the Commission.

Waste Management '91 Symposium, Tucson, Arizona (Open) - The Committee will finalize its presentation and plans for the Waste Management '91 Symposium on February 26, 1991.

10 CFR Part 61 (Open) - The Committee will discuss the conformity of the NRC staff's current guidance on low-level waste disposal facilities with the requirements of 10 CFR Part 61. The Committee will also evaluate 10 CFR Part 61 as it relates to low-level waste disposal facilities that utilize methods other than shallow land burial. Questions to be addressed include whether Part 61 can be applied, in its existing form, to engineered facilities such as below and above ground vaults.

Barnwell Trip Report (Open) - The Committee will be briefed by the two ACNW members who recently toured the low-level waste facility at Barnwell, South Carolina.

Human Intrusion (Open) - The Committee will discuss issues relating to potential methods for the inclusion of human intrusion scenarios in performance evaluations of the proposed high-level waste repository. Methods for resolving the regulatory issues associated with human intrusion will be discussed.

Committee Activities (Open/Closed) - The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, and organizational matters, as appropriate. The members will also discuss matters and specific issues that were not

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completed during previous meetings as time and availability of information permit.

**Working Group Meeting on the Role of Expert Judgment (Open)  
January 25, 1991 (Tentative Agenda)**

The Working Group will discuss the use of expert judgment in conducting performance assessments of HLW repositories and LLW sites. The potential problems that could arise with the use of expert judgment will also be discussed. A report to the full Committee will follow.

**Working Group Meetings (Dates to be determined)**

Geologic Dating (Open) - The Working Group will review and discuss problems associated with and limitations of the various Quaternary dating methods to be used in the DOE site characterization of the planned HLW repository.

DOE/USGS White Paper on the Geophysical Aspects of the Repository Site Characterization Plan (Open) - The Working Group will have discussions with the NRC staff on their review of and comments on the DOE/USGS white paper on "Status of Data, Major Results, and Plans for Geophysical Activities-Yucca Mountain Project."

Definition of "Substantially Complete Containment" (Open) - The ACNW Working Group will discuss the feasibility of the "Substantially Complete Containment" concept.

Long-Term Climate Change (Open) - The Working Group will review and discuss potential long-range climate changes, the treatment of these changes on performance assessments, and the impact of climate changes on the suitability of the proposed high-level waste repository.

Computing Collective Doses from Ionizing Radiation (Open) - The Working Group will review and discuss methods of calculating collective population doses from exposure to low levels of ionizing radiation. Discussions with NCRP, ICRP, BEIR, IAEA, EPA and NRC staff are planned.