



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

ACNWS-0028
PDR
5-30-91

March 12, 1991

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

Dear Chairman Carr:

SUBJECT: SUMMARY REPORT - TWENTY-EIGHTH MEETING OF THE ADVISORY
COMMITTEE ON NUCLEAR WASTE, FEBRUARY 21-22, 1991

During its 28th meeting, February 21-22, 1991, the Advisory
Committee on Nuclear Waste completed the activities noted below and
the following reports.

REPORTS

- Regulation of Mixed Wastes (Report to Chairman Carr, dated
February 28, 1991.)

In response to a request from Commissioner James R. Curtiss,
the Committee reported on the problems and issues associated
with the disposal of mixed waste.

- Comments on 10 CFR Part 60.113, Subsystem Requirements (Report
to Chairman Carr, dated March 1, 1991.)

In response to a request from Commissioner James R. Curtiss,
the Committee reported on the relationship between subsystem
performance requirements of 10 CFR Part 60 and the EPA high-
level waste (HLW) standards.

HIGHLIGHTS OF MATTERS CONSIDERED BY THE COMMITTEE

- Substantially Complete Containment Concept

The Committee was briefed by representatives of the NRC staff
and the Center for Nuclear Waste Regulatory Analyses (CNWRA)
on a technical feasibility study on the "substantially
complete containment" (SCC) concept for the waste package for
a high-level waste (HLW) repository. The NRC staff discussed
three reports that are the result of this SCC feasibility
study. These reports, written jointly by NRC and CNWRA
staffs, discuss the technical considerations and uncertainty
evaluation methods for performance assessment of the waste
package.

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This briefing was for information only. No Committee action was taken.

- Expert Judgment

The Committee discussed the insights gained from a recent ACNW Working Group meeting on how expert judgment can be used in conducting performance assessments used in the licensing of HLW and LLW repositories. The Committee also addressed possible options for future Working Group meetings on the use of expert judgment.

- Revision to 10 CFR Part 20

The Committee was briefed on the proposed final revision to 10 CFR Part 20, "Standards for Protection Against Radiation." The NRC staff focused on changes that affect requirements for waste disposal.

The NRC staff is developing thirteen new or revised regulatory guides that will provide more details on the methods for implementing the new rule. The ACRS and the ACNW have agreed to apportion the review of the regulatory guides consistent with Committee areas of responsibility. The Committees will conduct their reviews during the public comment period to expedite the normal review and comment schedule as shown below:

Regulatory Guides to be Reviewed by ACNW

- Interpretation of Bioassay Measurements [R.G. 8.9]
- Instruction on Health Risks from Occupational Radiation Exposure [R.G. 8.29]
- Instructions to Pregnant Women [R.G. 8.13]
- Preparation of Applications for Use of Sealed Sources and Devices for Performing Industrial Radiography [Appendix to R.G. 10.6]
- Preparation of Applications for Medical Uses [Appendix to R.G. 10.8]
- 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

Regulatory Guides to be Reviewed by ACRS

- Radiation Protection Programs for Nuclear Power Plants
- Control of Access to High and Very High Radiation Areas

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- in Nuclear Power Plants
- Instructions for Recording and Reporting Occupational Radiation Exposure Data [including formats for "Electronic Media"]
- Planned Special Exposures

Working Group meetings may be scheduled as needed to examine some of the regulatory guides.

- Annual Report of Radioactive Materials Released from U.S. Nuclear Power Plants, NUREG/CR-2907

The Committee was briefed by the NRC staff on data collected, reported, and published in the NRC staff report "Annual Report on Radioactive Materials Released from U.S. Nuclear Power Plants," (NUREG/CR-2907). The members discussed the limited scope of the isotope release data and the relative merits of an electronic transfer system for data reported by the utilities. It was agreed that Dr. Moeller should meet with the NRC staff to get a better understanding of NRC's views and policies.

- Carbon-14 Release and Migration

The Committee continued its discussions on potential carbon-14 release and migration relative to an HLW repository. The Committee concluded that this issue was adequately addressed in the ACNW report on Stringency of U.S. Environmental Protection Agency High-Level Radioactive Waste Repository Standards (Report to Chairman Carr, dated January 29, 1991). The Committee agreed to take no further action at this time.

- Human Intrusion

The Committee continued its discussion of a draft report on human intrusion at an HLW repository and the lessons learned from the treatment of similar scenarios in nuclear power plant licensing. The Committee discussed the merits of providing this report to EPA for consideration in dealing with human intrusion in connection with the ongoing effort by EPA to revise the HLW standards in 40 CFR Part 191.

- Leaching Resistance of Waste Form

The Committee discussed its response to the Staff Requirements Memorandum (SRM), dated December 31, 1990, concerning recommended revision of Part 61 with regard to leaching resistance of the LLW form. The Committee agreed to continue its discussion during the 29th ACNW meeting.

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• ACNW Future Activities

- The Committee selected the tentative dates of June 26-28, 1991 or June 24-25, 1991, for its visit to the Center for Nuclear Waste Regulatory Analyses in San Antonio, Texas. The Committee will be briefed on the status of the Systematic Regulatory Analysis and receive an update on other activities of the Center.
- The Committee agreed to postpone a briefing by HLWM staff on its plans for the review of the DOE ESF Alternatives Study until the staff has developed its review plan.
- The Committee agreed to invite Mr. Harold Denton, GPA, to brief the Committee on NRC oversight and monitoring of existing LLW disposal facilities through the Agreement State program. The Committee is interested in understanding how the State/NRC oversight function is carried out in the Agreement States.

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

APPENDIX A. FUTURE AGENDA

29th ACNW Committee Meeting March 20-22, 1991 (Tentative Agenda)

Technical Position Regarding Regulatory Considerations in the Design and Construction of the Exploratory Shaft Facility - The Committee will review and comment on the NRC staff's Technical Position regarding Regulatory Considerations in the Design and Construction of the Exploratory Shaft Facility.

Massachusetts' Strategic Plan for LLW Disposal - The Committee will meet with the low-level waste coordinator from the State of Massachusetts to hear about the development of the State's strategic plan for LLW disposal. This briefing is for information.

Meeting with the NRC Commissioners - The Committee will meet with the Commissioners to discuss items of mutual interest including:

- Mixed Wastes
- Priorities for Future ACNW Activities
- Dose Limits - Risk to Individuals
- Stringency of EPA Standards
- Part 60 Subsystem Performance Criteria

Leaching Resistance of Waste Form - The Committee will develop a response to a recent Staff Requirements Memorandum (SRM) concerning revising Part 61 with regard to leaching resistance of the LLW form. [Note: SRM suspense date is April 27, 1991]

Agreement State Program - The Committee will be briefed on NRC oversight and monitoring of existing low-level waste disposal facilities through the Agreement State program.

Working Group Meetings (Dates to be determined)

Geologic Dating - 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.

Integration of Geophysics into Site Characterization of a High-Level Waste Repository - The Working Group will discuss the use of geophysical testing in resolving issues associated with potentially adverse conditions and will include a discussion of the DOE "white paper" on geophysical studies, NRC Site Characterization Analysis comments on the DOE geophysical testing program, geologic information needed for site characterization, and what specific geophysical methods may be most applicable.

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Long-Term Climate Change - The Working Group will review and discuss potential long-range climate changes and their impact on performance assessments and ultimately on the suitability of the proposed HLW repository.

Expert Opinion - The Working Group will continue the examination of methodologies of expert judgment with emphasis on the methodology of an expert elicitation and the use of expert judgment in the resolution of the human intrusion issue. Speakers will be invited from Federal agencies and nongovernment organizations, such as the Decision Analysis Company and Golder Associates.