



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555

OFFICE OF THE  
SECRETARY

October 18, 1991

Federal Advisory Committee Desk  
Federal Documents Section  
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Washington, DC 20540

Dear Sir:

Enclosed are eight copies of the reports and background papers of the Advisory Committee on Nuclear Waste for placement in the Advisory Committee depository.

Sincerely,

*John C. Hoyle for*

John C. Hoyle  
Advisory Committee Management Officer

Enclosure:  
ACNW Committee and  
Consultant Reports  
August 1991 -  
No. 33

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**ACNW COMMITTEE AND CONSULTANT REPORTS - NUMBER 033**

Submitted in Accordance with  
Sections 10 and 13  
of the  
Federal Advisory Committee Act

**AUGUST 1991**

C O N T E N T S

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

September 3, 1991

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

Dear Chairman Selin:

**SUBJECT: PROGRAM PLAN FOR THE ADVISORY COMMITTEE ON NUCLEAR WASTE**

Since December 1989 the Advisory Committee on Nuclear Waste (ACNW) has provided at four-month intervals a program plan of anticipated Committee activities. This plan covers the period September-December 1991. We hope you will find this a convenient avenue for us to share information on our proposed upcoming activities and for you to provide feedback on issues on which the Commission wishes us to focus our efforts.

In preparing this program plan, we have considered the list of specific technical issues of particular interest to the Commission, requests of individual Commissioners, the EDO's list of proposed agenda items for the ACRS and the ACNW, the NRC's Five-Year Plan, and items of particular interest and/or concern to the Committee. The priorities proposed are based on information provided by representatives of NMSS, NRR, RES, and the EDO, as well as our own interpretation of the subject in relation to our activities as a Committee and our input into the regulatory process.

This program plan is based on the current best estimates of work output by the DOE, EPA, NRC staff, and their consultants and contractors, as well as our own estimates of how to deal with these issues effectively. In addition to the full Committee meetings noted, Working Group meetings will be held as necessary to facilitate full Committee review and action. A list of planned Working Group meetings follows the list of full Committee topics. There may be some revisions to this plan due to delays in the completion of NRC staff, applicant, and/or contractor studies and reviews as well as other schedule problems beyond our control.

Full Committee meeting dates for this period are presently scheduled as follows:

35th Meeting	-	September 27, 1991
36th Meeting	-	October 18, 1991
37th Meeting	-	November 20-21, 1991
38th Meeting	-	December 18-19, 1991

The Committee anticipates considering the topics listed below during this four-month period.

September 27, 1991

- The Committee will continue deliberations to investigate the feasibility of a systems analysis approach to reviewing the over-all high-level waste program, including the short and mid-range technical milestones for handling high-level waste with the goal of reporting back to the Commission the ACNW's recommendations as to the scope of such a review and the advisability of the ACNW undertaking it. (High Priority)
- The Committee will review and comment on selected draft Regulatory Guides that implement the revised 10 CFR Part 20, Standards for Protection Against Radiation. (Medium Priority)
- Members of the Committee plan to attend the EPRI Workshop on the technical basis for the Environmental Protection Agency's high-level waste standards. The workshop is being held in Arlington, Virginia on September 24-26, 1991.

October 18, 1991

- The Committee will complete its response to the request of the Chairman for the ACNW to investigate the feasibility of a systems analysis approach to reviewing the over-all high-level waste program, including the short and mid-range technical milestones for handling high-level waste, and will report to the Commission the ACNW's recommendations as to the scope of such a review and the advisability of ACNW undertaking it. (High Priority)
- The Committee will begin deliberations on a request from Commissioner Rogers regarding whether the NRC staff has developed a suitable performance assessment program and whether the NRC staff has adequate equipment, expertise and training to conduct high- and low-level waste computer modeling. (High Priority)
- The Committee will be briefed by the DHLW staff on their basis for establishing a probability limit for distinguishing between unlikely and very unlikely events. This relates to the alternative approach to the probabilistic section of the containment requirements in 40 CFR 191.

November 20-21, 1991

- The Committee will complete a response to a request from Commissioner Rogers regarding whether the NRC staff has developed a suitable performance assessment program and whether the NRC staff has adequate equipment, expertise and training to conduct high- and low-level waste computer modeling. (High Priority)

- The Committee will review and comment on Rulemaking to revise 10 CFR Part 61, Licensing Requirements for Land Disposal of Radioactive Waste. (High Priority)
- The Committee will review and comment on a revision to NUREG-1200, Standard Review Plan for the review of a license application for a Low-Level Radioactive Waste Disposal Facility. (High Priority)
- The Committee will be briefed by Louisiana Energy Systems on their private uranium enrichment facility plans. Topics of interest include the disposal of the depleted uranium and the licensing process for the facility. (Medium Priority)
- The Committee has scheduled a visit to the WIPP site on November 5, 1991. Discussions at the site and a tour of the facility are planned.
- The Committee is scheduled to meet with the Commissioners to discuss items of mutual interest during the November ACNW meeting. The Committee requests that this meeting with the Commissioners be deferred to the December 1991 ACNW meeting. (High Priority)

December 18-19, 1991

- The Committee will review and comment on an NRC staff Technical Position on Investigations to Identify Fault Displacements and Seismic Hazards. (High Priority)
- The Committee will review and discuss the historical evidence and the potential for climate changes in the Southern Basin and Range and their associated impact on performance assessment for the proposed high-level radioactive waste repository at Yucca Mountain. (High Priority)
- The Committee will review and discuss problems and limitations with various Quaternary dating methods to be used in the assessment of volcanic features for site characterization of the proposed high-level waste repository at Yucca Mountain. (High Priority)

Other Topics: (Will be considered as documents and time become available.)

- The Committee will be briefed on the NRC HLW staff's review of the Calico Hills Risk/Benefit Analysis and the staff's position on penetration of the Calico Hills tuff.

- The Committee will be briefed on the NRC staff's review of the DOE reports on the Exploratory Studies Facility Alternatives Study and the site suitability analysis.
- The Committee will be briefed on the adoption by EPA of a revised Hazard Ranking System for use in assessing the threat associated with the release or potential release into the environment of hazardous chemicals and/or radioactive materials.
- The Committee will be briefed on the status of the low-level radioactive waste compacts.
- Members of the Committee will participate in a conference sponsored by the Society for Risk Analysis at which a summary of the Committee's report on expert judgment will be presented. Conference dates are December 9-11, 1991, in Baltimore, Maryland.

Working Group Meetings:

Regulatory Guides for Implementing Revisions to 10 CFR Part 20, September 23-24, 1991, Bethesda, Md. - The Working group will review, discuss and make recommendations on regulatory guides, being prepared by the NRC staff which assess the impacts of handling, storage and treatment of nuclear waste materials, as well as other radiation protection activities.

NRC Staff Computer Modeling and Performance Assessment Program in High-and Low-Level Waste, October 15, 16, 17, 1991, Bethesda, Md. - The Working Group will begin its review of a request from Commissioner Rogers regarding whether or not the NRC staff has developed a suitable performance assessment program and whether the NRC staff has adequate equipment, expertise and training to conduct high- and low-level waste computer modeling.

Geologic Dating, November 19, 1991, Bethesda, Md. - The Working Group will review and discuss problems and limitations of various Quaternary dating methods that are proposed for use in the assessment of volcanic features for site characterization of a high-level waste repository at Yucca Mountain.

The Impact of Long-Range Climate Change in the Area of the Southern Basin and Range, December 17, 1991, Bethesda, Md. - The Working Group will review and discuss the historical evidence and the potential for climate changes in the Southern Basin and Range and their associated impact on performance assessment for the proposed high-level radioactive waste repository at Yucca Mountain.

Post-Closure Monitoring, TBD, Bethesda, Md. - The Working Group will discuss post-closure monitoring of an HLW repository and other

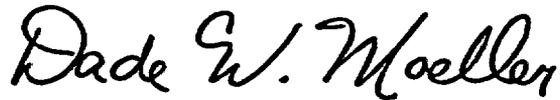
September 3, 1991

related issues. Representatives from EPA and NRC will be invited to brief the Committee on various aspects of post-closure monitoring.

Residual Contamination Clean-up Criteria, TBD, Bethesda, Md. - The Working Group will review, discuss and make recommendations on guidelines for radionuclide contamination limits for unrestricted use of sites that are or have been under NRC license.

Methods for Assessing Natural Resources at a Proposed High-Level Waste Repository Site, TBD, Bethesda, Md. - The Working Group will discuss methodologies for the assessment of the potential for natural resources at the proposed high-level waste repository site at Yucca Mountain. The relationship between such resources and the potential for human intrusion will be emphasized.

Sincerely,



Dade W. Moeller  
Chairman

cc: Commissioner Rogers  
Commissioner Curtiss  
Commissioner Remick  
Samuel J. Chilk, SECY  
James M. Taylor, EDO  
Robert M. Bernero, NMSS

the NRC staff has developed a suitable performance assessment program and whether the NRC staff has adequate equipment, expertise and training to conduct high- and low-level waste computer modeling.

Geologic Dating, November 19, 1991, 7920 Norfolk Avenue, Bethesda, MD (Abrams) - The Working Group will review and discuss problems and limitations of various Quaternary dating methods that are proposed for use in the assessment of volcanic features for site characterization of a high-level waste repository at Yucca Mountain.

The Impact of Long-Term Climate Change in the Area of the Southern Basin and Range, December 17, 1991, 7920 Norfolk Avenue, Bethesda, MD (Abrams) - The Working Group will review and discuss the historical evidence and the potential for climate changes in the Southern Basin and Range and their associated impact on performance assessment for the proposed high-level radioactive waste repository at Yucca Mountain.

Post-Closure Monitoring, (Date to be determined), 7920 Norfolk Avenue, Bethesda, MD (Larson) - The Working Group will discuss post-closure monitoring of an HLW repository and other related issues. Representatives from EPA and NRC will be invited to brief the Committee on various aspects of post-closure monitoring.

Residual Contamination Clean-up Criteria, (Date to be determined), 7920 Norfolk Avenue, Bethesda, MD (Gnugnoli) - The Working Group will review, discuss and make recommendations on guidelines for radionuclide contamination limits for unrestricted use of sites that are or have been under NRC license, or were at one time, under AEC license. This effort will be coordinated with a proposed effort by the ACRS to incorporate a land contamination limit into the nuclear power plant safety goals.

Methods for Assessing the Presence of Natural Resources at the Proposed HLW Repository Site, (Date to be determined), 7920 Norfolk Avenue, Bethesda, MD (Abrams) - The Working Group will discuss methodologies for the assessment of the potential for natural resources at the proposed high-level waste repository site at Yucca Mountain. The relationship between resources and the potential for human intrusion will be emphasized.



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

September 19, 1991

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

Dear Chairman Selin:

SUBJECT: SUMMARY REPORT - THIRTY-FOURTH MEETING OF THE ADVISORY  
COMMITTEE ON NUCLEAR WASTE, AUGUST 27-29, 1991

During our 34th meeting, August 27-29, 1991, we completed the activities noted below including the report and memorandum listed.

MEMORANDUM AND REPORT

- Program Plan for the Advisory Committee on Nuclear Waste (Report to Chairman Selin, dated September 3, 1991).
- Response to Six EPA Questions on the High-Level Waste Standards, Working Draft No. 3 (Memorandum to B. Joe Youngblood, Director, Division of High-Level Waste Management, dated August 30, 1991).

HIGHLIGHTS OF MATTERS CONSIDERED BY THE COMMITTEE

1. Interim Spent Fuel Storage

As requested by the Commission, the Committee began its deliberations on the feasibility and benefits of applying a systems analysis approach to reviewing the overall high-level waste program, including the short and mid-range technical milestones for handling high-level waste.

The Committee will continue deliberations on this matter during the 35th (September 27, 1991) and 36th (October 18, 1991) ACNW meetings.

2. Proactive Program of the Division of High-Level Waste Management

The Committee was briefed by the Division of High-Level Waste Management (HLWM) staff on the development and implementation of the proactive component of its overall High-Level Waste

Repository Program. The HLWM staff discussed the integration of the proactive program with the research program. This discussion included a detailed description of the following three parts of this program:

- NWPA Program Regulatory Requirements and Technical Guidance
- Technical Assessment Capability for Repository Licensing Review
- Systematic Regulatory Analysis (SRA) and Center for Nuclear Waste Regulatory Analyses (CNWRA) Operations

The briefing provided an overview of the organization of the high-level waste program and staff initiatives. The briefing also addressed issues such as identification, integration and establishment of work priorities. This briefing was for information only. No Committee action was taken.

3. DOE's Responses to the NRC Staff's Site Characterization Analysis

The Committee was briefed by representatives of HLWM on the results of their review of the responses from the U.S. Department of Energy (DOE) to the Site Characterization Analysis, NUREG-1347. This briefing was for information only. No Committee action was taken.

4. Comments on DOE's Site Characterization Plan

The Committee was briefed by representatives of DOE on their responses to comments received from EPA, NRC, and the State of Nevada on the Yucca Mountain Site Characterization Plan. This briefing was for information only. No Committee action was taken.

5. Review of DOE's Site Characterization Plan by the State of Nevada

The Committee was briefed by a representative of the State of Nevada on the State's review and comments on the DOE Site Characterization Plan and related Study Plans. Due to the large number of comments submitted (in September 1989) by the State to the DOE, the discussion was limited to the three "fundamental flaws" cited by the State of Nevada. This briefing was for information only. No Committee action was taken.

6. Containment Requirements in 40 CFR Part 191

The Committee held a brief discussion with representatives of the NRC staff on their responses to the ACNW report, dated May 30, 1991, on alternative approaches to the probabilistic section of the containment requirements in 40 CFR Part 191 ("The Three-Bucket Approach"). This briefing provided an opportunity for the NRC staff to better understand the Committee's concerns on this topic. The NRC staff will be invited back for more in-depth discussions during the 36th ACNW meeting on October 18, 1991.

7. EPA High-Level Waste Standards

The Committee reviewed the proposed combined NRC staff-ACNW responses to six questions accompanying Working Draft No. 3 of the EPA HLW Disposal Standards. The Committee came to a consensus with the NRC staff and approved forwarding a memorandum to Mr. B. J. Youngblood to bring this matter to closure.

The Committee also discussed a revised NRC staff paper on the staff's approach for dealing with uncertainties in implementing the EPA HLW Disposal Standards. No Committee action was taken.

8. ACNW Four-Month Plan

The Committee prepared and issued its next four-month plan to the Commission for the period September-December 1991. During preparation of the four-month plan, the Committee made several schedule changes from previous plans.

9. Visit to the Waste Isolation Pilot Plant (WIPP)

The Committee discussed its planned visit to the Waste Isolation Pilot Plant near Carlsbad, New Mexico, on November 5, 1991. Discussions at the site and a tour of the facility are planned.

10. ACNW Future Activities

- The Committee agreed to shift the date for the 36th ACNW meeting from October 23-24, 1991, to October 18, 1991, so that selected members can attend the Geological Society of America symposium that will be held during the week of October 21, 1991.
- The Committee requested that the meeting with the Commissioners be rescheduled from its 37th (November 20-

The Honorable Ivan Selin

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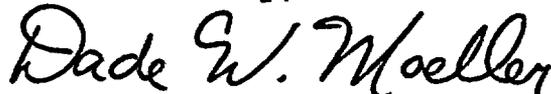
September 19, 1991

21, 1991, meeting) to its 38th (December 18-19, 1991 meeting).

- The Committee agreed to postpone the briefing on Rulemaking to revise 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste," until the 37th meeting, November 20-21, 1991.

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  
Chairman

APPENDIX A. FUTURE SCHEDULE

35th ACNW Committee Meeting September 27, 1991 (Tentative Schedule)

Interim Spent Fuel Storage - The Committee will continue deliberations to investigate the feasibility and benefits of applying a systems analysis approach to reviewing the over-all high-level waste program, including the short and mid-range technical milestones for handling high-level waste with the goal of reporting back to the Commission the ACNW's recommendations as to the scope of such a review and the advisability of the ACNW undertaking it.

Low-Level Waste Planning - The Committee will discuss the overall subject of the management and disposal of low-level radioactive waste.

Review of Regulatory Guides for Implementing Revisions to 10 CFR Part 20 - The Committee will review and comment on selected draft regulatory guides that implement the revised 10 CFR Part 20, Standards for Protection Against Radiation.

Meeting with Director, Office of Nuclear Materials Safety and Safeguards - The Committee will meet with Mr. Bernero to discuss items of mutual interest.

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

Working Group Meetings

Review of Regulatory Guides for Implementing Revisions to 10 CFR Part 20, September 23-24, 1991, 7920 Norfolk Avenue, Bethesda, MD (Gnugnoli) - The Working Group will review, discuss and make recommendations where appropriate on nine regulatory guides related to the implementation of the revised 10 CFR Part 20 rule. This review will be conducted in conjunction with the ACRS Subcommittee on Occupational and Environmental Protection Systems.

NRC Staff Computer Modeling and Performance Assessment Program in High-Level and Low-Level Waste, October 16-17, 1991, 7920 Norfolk Avenue, Bethesda, MD (Gnugnoli) - The Working Group will begin its review of a request from Commissioner Rogers regarding whether