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MINUTES OF THE 4TH ACNW MEETING
SEPTEMBER 13-14, 1988

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# APPENDICES

I. MEETING ATTENDEES

II. FUTURE AGENDA

III. OTHER DOUCMENTS RECEIVED

# APPENDIX I

ATTENDEES
4TH ACNW MEETING
SEPTEMBER 13-14, 1988

ACNW Member Attendees:

| | 1st Day | 2nd Day |
|---|---|---|
| Dr. Dade W. Moeller | ✓ | ✓ |
| Dr. Martin J. Steindler | ✓ | ✓ |
| Dr. Clifford V. Smith | ✓ | ✓ |

ACNW Consultants:

| | | |
|---|---|---|
| M. Carter | ✓ | ✓ |
| D. Orth | ✓ | ✓ |

APPENDIX I

ATTENDEES
4TH ACNW MEETING
SEPTEMBER 13-14, 1988

SEPTEMBER 13, 1988

PUBLIC ATTENDEES

S. Sharron, Serch
F. Helminski, The Radioactive Exchange
J. Buehler, American Ecology Corp.
C. Dell, Weston
Mengchier, NUMARC
A. Machiels, NUMARC
B. Fanell, EEI
O. Wong, U. S. Ecology
B. Roy, Westinghouse

NRC ATTENDEES

C. Maupin, GPA
J. Kane, NMSS
B. Jagnnath, NMSS
S. Spector, CNWRA B.
(NRC contractor)
D. Cool, NMSS
B. Morris, RES
W. Lahs, RES
K. Schmid, GPA
E. O'Donnel, RES
J. Philip, RES
P. Reed, RES
K. Parczewski, NRR

APPENDIX I, Attendees, 4th ACNW Meeting

SEPTEMBER 14, 1988

PUBLIC ATTENDEES

K. Mayo, Babcock & Wilcox
S. Meyers, Jacobs Engineering
A. Ratliff, SAIC
H. Morton, Morton & Potter
C. Dell, Weston
G. Brown, Stone & Webster
E. Miller, Afton Associates
S. Poltorak, SERCH
T. Potter, Morton & Potter
P. Comella, Newman & Holtzinger, PC.
M. Murphy, State of Nevada
B. House, Chem-Nuclear

NRC ATTENDEES

J. Grimm, NMSS
R. Weiner, CNWRA
(NRC contractor)
M. Knapp, NMSS
P. Erickson, NRR
D. Loosley, NMSS
C. Defino, NMSS
R. Grill, RES
E. O'Donnell, RES
K. Ramsey, NMSS

APPENDIX II
FUTURE AGENDA

October 27, 1988 (tentative) (Open)

The Committee will meet with the Commission to discuss:

1. Review of mixed waste uncertainties
2. Highlights of South Carolina trip
3. Resources of the Division on LLWM
4. Meetings with Commission Technical Assistants
5. Decommissioning Rule
6. Future meeting agenda

November 3-4, 1988 (tentative)

DOE's HLW Performance Allocation and Assessment Program (Open) - The Committee will be briefed by the DOE Staff on their Performance Allocation and Assessment Program for the high-level waste geologic repository.

State of Nevada (Open) - The Committee will be briefed by representatives from the State of Nevada on their comments on the DOE CDSCP. Responding comments will be made by NRC Staff.

High-Level Waste Management Division (Open) - The Committee will be briefed by the Director of HLWMD on their program plans for FY 1989.

Rulemaking Topics (Open) - The Committee will be briefed by NRC Staff on rulemaking topics to clarify 10 CFR 60.

Committee Activities (Open) - The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, and organizational matters, as appropriate.

Licensing Support System (Open) - The Committee will be briefed by NRC Staff on the status of the HLW Licensing Support System Regulatory Negotiation Project.

Dry Cask Storage (Open) - The Committee will be briefed on the DOE Study on Dry Cask Storage.

APPENDIX III - OTHER DOCUMENTS RECEIVED

## A. Meeting Handouts from ACNW Staff and Presenters

### I. EXECUTIVE SESSION

1. Memorandum for Savio from Moeller, dated August 21, 1988, re Miscellaneous Items

2. Memorandum for Nordlinger from Fraley, dated September 9, 1988, re Proposed Legislative Change - ACNW

### II. BELOW REGULATORY CONCERN

3. Draft Memorandum for the Commissioners from Stello, dated September 12, 1988, re Proposed Commission Policy on Exemptions from Regulatory Control for Practices Whose Public Health and Safety Impacts are Below Regulatory Concern (BRC) (Official Use Only)

4. Memorandum for Moeller, et al. from Merrill, dated September 13, 1988, re NRC Staff's Proposed Commission Statement on Below Regulatory Concern (BRC)

5. NRC Presentation to the ACNW on Proposed Policy on Exemptions from Regulatory Control for Practices Whose Health and Safety Significance Are Below Regulatory Concern, dated September 13, 1988, by William R. Lahs (Viewgraphs)

### III. CEMENT WASTE FROM SOLIDIFICATION

6. Update on Status of Cement Waste Form Solidification Technical Review Activities, dated September 13, 1988, by Michael Tokar (Viewgraphs)

### IV. POLYETHYLENE HIGH INTEGRITY CONTAINERS

7. Status of High Density Polyethylene (HDPE) High Integrity Containers (HIC) Technical Reviews, dated September 13, 1988 (Viewgraphs)

8. Three graphs on HDPE HICs entitled, "Phillips Data, Failure Stress vs. Time, and Graube Curves Replotted for 20°C and 60°C

### V. ASME MIXED WASTE POSITION PAPER

9. ASME Mixed Waste Position Paper, dated September 14, 1988, by T. C. Johnson, LLRB (Viewgraphs)

10. Letter for Thompson, NMSS, from Kraft, Utility Nuclear Waste Management Group, dated July 29, 1988, re Mixed Radioactive and Hazardous Waste

APPENDIX III, Handouts, 4TH ACNW Meeting

VI. LLW MANAGEMENT AND DECOMMISSIONING DIVISION FY 1989 PROGRAM

11. Low-Level Waste Management and Decommissioning Division FY 89 Program, dated September 14, 1988, by Malcolm Knapp (Viewgraphs)

12. Low-Level Waste Management, undated (Viewgraphs)

VII. DECOMMISSIONING RULE

13. Decommissioning Rule, dated September 14, 1988, by Don Martin (Viewgraphs)

## B. Meeting Notebook Contents Listed by Tab Number

| TAB | | |
|---|---|---|
| 1 | 1. | Introductory Statement by ACNW Chairman, 4th Meeting, September 13, 1988 |
| 2.1 | 2. | Memorandum for ACNW Members from Libarkin, dated August 25, 1988, re ACNW Administration and Procedural Matters, with attachments |
| | 3. | Memorandum for Lear et al. from Funches, dated August 9, 1988, re Proposed NMSS Policy and Procedures Letter 1-37, "NMSS Participation in the ACNW Meetings," with attachments |
| | 4. | Memorandum for Moeller et al. from Savio, dated July 20, 1988, re July 5, 1988, Staff Requirements Memorandum |
| | 5. | Draft Memorandum for Stello from Fraley, dated September 1988, re Provision of Information to ACNW |
| 2.2 | 6. | Bylaws of the Advisory Committee on Nuclear Waste, February 1, 1988, with attachments and appendices |
| 2.3 | 7. | Memorandum for ACNW Members from Parry, dated August 17, 1988, re Proposed NMSS Policy Re ACNW Meetings, with attachment |
| | 8. | Memorandum for Merrill from Steindler, dated January 22, 1988, re Format for RES Presentation |
| | 9. | Memorandum for Moeller from Steindler, dated December 3, 1987, re Low Level Waste Product Listing |
| | 10. | Memorandum for ACRS/ACNW Members and ACRS Staff from Libarkin, dated August 1, 1988, re Conduct of Subcommittee Meetings, with attachment |
| | 11. | Memorandum for ACRS Technical Staff from Libarkin, dated August 16, 1988, re Division of Responsibility Between ACRS and ACNW |
| | 12. | Memorandum (same as Item 4 above) |
| | 13. | Memorandum for Moeller from Steindler, dated September 10, 1987, re Approach to Waste Management Subcommittee Meetings |
| | 14. | Memorandum for Nordlinger from Libarkin, dated July 12, 1988, re Guidelines for Discussion Held During Site and Facility Tours, with attachment |

| | | |
|---|---|---|
| | 15. | Memorandum for ACRS/ACNW Members and ACRS Staff from Schofer, dated August 23, 1988, re New ACNW Program File, with attachment |
| | 16. | Memorandum for Moeller from Steindler, dated April 8, 1988, re Information Retrieval from Waste Management Subcommittee Activities |
| 2.4 | 17. | Memorandum for ACNW Members from Parry, dated September 1, 1988, re Candidate for ACNW Consultant, with attachment (Official Use Only) |
| 3 | 18. | Background on Proposed BRC Policy Statement |
| 3.1 | 19. | Letter Report for Chairman Zech, dated August 9, 1988, re ACNW Comments on Proposed Commission Policy Statement on Regulatory Control Exemptions for Practices Whose Public Health and Safety Impacts Are Below Regulatory Concern (BRC) |
| 3.2 | 20. | Memorandum for Moeller et al. from Merrill, dated August 23, 1988, re Proposed Commission Policy Statement on Below Regulatory Concern (BRC) |
| 3.3 | 21. | Draft #1 re Comments on Proposed Commission Policy Statement on Regulatory Control Exempts for Practices Whose Public Health and Safety Impacts Are Below Regulatory Concern, dated September 7, 1988 (Official Use Only) |
| 3.4 | 22. | Memorandum for Fraley from Morris, dated September 8, 1988, re Transmittal of Documentation for ACNW Review, with attachments (Official Use Only) |
| 4 | 23. | Presentation Agenda on Cement-Based LLW |
| | 24. | Status Report, undated |
| 4.1 | 25. | Memorandum for ACNW Members from Parry, dated September 1, 1988, re Report to NMSS Director on LLW Stability, with attachments |
| 5 | 26. | Presentation Agenda on Status of NRC Staff Study on High Density Polyethylene (HDPE) High Integrity Containers (HICs), undated |
| | 27. | Status Report, undated |
| 5.1 | 28. | Memorandum for Moeller et al. from Stella, dated September 8, 1988, Estimation of 300-Year Dose to High Density Polyethylene High Integrity Containers for Low Level Waste Disposal, with attachment (Official Use Only) |
| 6 | 29. | Introductory Statement by ACNW Chairman, 4th Meeting, September 14, 1988 |

APPENDIX III, Notebook Contents, 4TH ACNW Meeting

| | | |
|---|---|---|
| 7 | 30. | Presentation Agenda on ASME Letter on Regulatory Responsibility for Mixed Waste, undated |
| | 31. | Status Report, undated |
| 7.1 | 32. | Letter for Chairman Zech from (unknown), ASME, dated May 4, 1988, re Mixed Radioactive and Hazardous Waste, with attachment |
| 7.2 | 33. | Memorandum for Knapp from Bell, dated July 18, 1988, re Minutes of June 18, 1988, Meeting with ASME, with attachment |
| 8 | 34. | Presentation Agenda for Division of Low-Level Waste and Decommissioning, undated |
| | 35. | Status Report, undated |
| 9 | 36. | Presentation Agenda for Decommissioning Rule, undated |
| | 37. | Status Report, undated |
| 9.1 | 38. | Federal Register Notice, Vol. 53, No. 123, Monday, June 27, 1988, pages 24018 to 24056, re 10 CFR Parts 30, 40, 50, 51, 70 and 72 |

APPENDIX

| Petitioner: (union/workers/firm) | Location | Date received | Date of petition | Petition No. | Articles produced |
|---|---|---|---|---|---|
| Atlantic Fuels Marketing Corp. (Company) | Montvale, NJ | 8-15-88 | 8-2-88 | 20,866 | Crude oil. |
| Biolectron, Inc. (Workers) | Hackensack, NJ | 8-15-88 | 7-29-88 | 20,867 | Bone growth stimulator. |
| Fabric Masters (ILGWU) | Carlstadt, NJ | 8-15-88 | 7-29-88 | 20,868 | Coats. |
| Devon Apparel, Inc. (ILGWU) | Philadelphia, PA | 8-15-88 | 8-2-88 | 20,869 | Ladies' sportswear. |
| M&D Coat Co. (ILGWU) | Hoboken, NJ | 8-15-88 | 7-27-88 | 20,870 | Coats. |
| Magnetek Universal Mfg (Workers) | Paterson, NJ | 8-15-88 | 8-2-88 | 20,871 | Ballasts and starters for lights. |
| N&J Originals (ILGWU) | Hoboken, NJ | 8-15-88 | 7-29-88 | 20,872 | Coats. |
| Newcor, Inc. (Workers) | Bay City, MI | 8-15-88 | 8-1-88 | 20,873 | Automated welding machinery. |
| P.V.S. Chemicals, Inc. (Workers) | Copley, OH | 8-15-88 | 8-3-88 | 20,874 | Sulfuric acid. |
| Phillips Petroleum Co. (Workers) | Denver, CO | 8-15-88 | 8-2-88 | 20,875 | Oil and gas. |
| Precision Materials (Workers) | Mine Hill, NJ | 8-15-88 | 8-1-88 | 20,876 | Irradiation of products. |
| Reichhold Chemicals, Inc. (OCAW) | Ferndale, MI | 8-15-88 | 8-5-88 | 20,877 | Alkyd resins. |
| U.S. Can Co. Plant #23 (Company) | Passaic, NJ | 8-15-88 | 7-29-88 | 20,878 | Metal containers. |
| Wilshire Knitting Mills (ILGWU) | Philadelphia, PA | 8-15-88 | 8-3-88 | 20,879 | Ladies and mens' sweaters. |

[FR Doc. 88-19127 Filed 8-22-88; 8:45 am]
BILLING CODE 4510-30-M

## Mine Safety and Health Administration

**[Docket No. M-88-134-C]**

### The Ohio Valley Coal Co.; Petition for Modification of Application of Mandatory Safety Standard

The Ohio Valley Coal Company, 56854 Pleasant Ridge Road, Alledonia, Ohio 43902 has filed a petition to modify the application of 30 CFR 75.305 (weekly examinations for hazardous conditions) to its Powhatan No. 6 Mine (I.D. No. 33-01159) located in Belmont County, Ohio. The petition is filed under section 101(c) of the Federal Mine Safety and Health Act of 1977.

A summary of the petitioner's statements follows:

1. The petition concerns the requirement that return aircourses be examined in their entirety on a weekly basis.

2. Petitioner states that due to continued deterioration of roof conditions the old Main Return from the West Seals to the No. 1 Fan cannot be safely traveled, and rehabilitation of these entries would create a diminution of safety to the examiners and miners.

3. As an alternate method, petitioner proposes to establish input and output evaluation stations in lieu of traveling the aircourse in its entirety.

4. In support of this request, petitioner states that—

(a) The input station would be established immediately outby the No. 1 West seal;

(b) The output station would be established at the No. 1 Fan;

(c) Air measurement stations and approaches to them would be maintained in a safe and traveled condition;

(d) These entries are not used as an escapeway, and no miners or matierals will pass through them;

(e) The return aircourse in question is located in a noncoal producing area of the mine;

(f) Weekly methane and air quality/quantity readings would be taken by a certified individual;

(g) A date board would be located at each checkpoint for the purpose of recording initials, date, and time of each examination; and

(h) Methane or other harmful, noxious, or poisonous gases would not be permitted to accumulate in the airways. An increase of 0.5% methane or a reduction of 10% in air quantity when compared to the last readings at any check station would be cause for immediate investigation and appropriate action.

5. Petitioner states that the proposed alternate method will provide the same degree of safety for the miners affected as that afforded by the standard.

### Request for Comments

Persons interested in this petition may furnish written comments. These comments must be filed with the Office of Standards, Regulations and Variances, Mine Safety and Health Administration, Room 627, 4015 Wilson Boulevard, Arlington, Virginia 22203. All comments must be postmarked or received in that office on or before September 22, 1988. Copies of the petition are available for inspection at that address.

**Patricia W. Silvey,**

*Director, Office of Standards, Regulations and Variances.*

Date: August 18, 1988.

[FR Doc. 88-19128 Filed 8-22-88; 8:45 am]
BILLING CODE 4510-43-M

## NATIONAL COMMUNICATIONS SYSTEM

### Industry Executive Subcommittee of the National Security Telecommunications Advisory Committee; Meeting

A meeting of the of the Industry Executive Subcommittee of the National Security Telecommunications Advisory Committee will be held Wednesday, August 31, 1988. The meeting will be held at the MITRE Corporation, 7525 Colshire Drive, McLean, VA. Registration will begin at 8:30 a.m. and the meeting will start at 9 a.m. The agenda is as follows:

A. Opening remarks.

B. Administrative remarks.

C. Briefings on industry and Government activities.

Due to the requirement to discuss classified information, in conjunction with the issues listed above, the meeting will be closed to the public in the interest of National Defense. Any person desiring information about the meeting may telephone (202) 692-9274 or write the Manager, National Communications System, Washington, DC 20305-2010.

**Terrence N. Danner,**

*Captain, USN, Assistant Manager, NCS Joint Secretariat.*

[FR Doc. 88-19091 Filed 8-22-88; 8:45 am]
BILLING CODE 3610-05-M

## NUCLEAR REGULATORY COMMISSION

### Advisory Committee on Nuclear Waste; Meeting Notice

The Advisory Committee on Nuclear Waste (ACNW) will hold an open meeting on September 13-14, 1988, 8:30 a.m., Room P-110, 7920 Norfolk Avenue, Bethesda, MD.

*Low-Level Waste and Decommissioning Division (Open)*—estimated time: 1.5 hrs.—The Committee will be briefed by the Director of the Division of Low-Level Waste and Decommissioning on plans for FY 1989.

*Regulatory Responsibility (Open)*—estimated time: 1.5 hrs.—The Committee will be briefed on an ASME paper on proposed regulatory responsibilities for mixed waste.

*Low-Level Waste Handling Processes (Open)*—estimated time: 1.5 hrs.—The Committee will be briefed by the NRC Staff on cement-based LLW forms.

*High Density Polyethylene HICs (Open/Closed)*—estimated time: 2 hrs.—The Committee will be briefed by the NRC Staff on High Density Polyethylene HICs.

*Below Regulatory Concern (Open)*—estimated time: 1 hr.—The Committee will continue its review of the Below Regulatory Concern (BRC) issue with the goal of developing a position which could be incorporated in an NRC policy statement before the International Meeting on BRC is held in Washington, DC, in October 1988.

*Decommissioning Rule (Open)*—estimated time: 0.5 hr.—The Committee will be briefed on the rulemaking on "General Requirements for Decommissioning Nuclear Facilities.

*DOE's Dry Spent Fuel Storage Cask Study (Open)*—estimated time: 45 mins.—The Committee will be briefed by the NMSS/IMNS staff on the DOE study on dry cask design and use.

*Committee Activities (Open)*—estimated time: 2 hrs.—The Committee will discuss anticipated and proposed Committee activities, future meeting schedule, and administrative matters, as appropriate.

Procedures for the conduct of and participation in ACNW meetings were published in the Federal Register on June 6, 1988 (53 FR 20699). In accordance with these procedures, oral or writtten statements may be presented by members of the public, recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Committee, its consultants, and Staff. The Office of the ACRS is providing Staff support for the ACNW. Persons desiring to make oral statements should notify the Executive Director of the Office of the ACRS as far in advance as practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements. Use of still, motion picture and television cameras during this meeting may be limited to selected portions of the meeting as determined by the ACNW Chairman. Information regarding the time to be set aside for this purpose may be obtained by a prepaid telephone call to the Executive Director of the Office of the ACRS, Mr. Raymond Fraley (telephone 202/634-3265) until August 26 and after August 29 (telephone 301/492-8049), prior to the meeting. In view of the possibility that the schedule for ACNW meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with the ACRS Executive Director if such rescheduling would result in major inconvenience.

Date: August 17, 1988.

**Andrew L. Bates,**

*Acting Advisory Committee Management Officer.*

[FR Doc. 88-19064 Filed 8-22-88; 8:45 am]

BILLING CODE 7590-01-M

## Advisory Committee on Reactor Safeguards (ACRS) and Advisory Committee on Nuclear Waste (ACNW); Notice of Proposed Meetings

In order to provide advance information regarding proposed public meetings of the ACRS Subcommittees and meetings of the ACRS full Committee, and of the ACNW, the following preliminary schedule is published to reflect the current situation, taking into account additional meetings which have been scheduled and meetings which have been postponed or cancelled since the last list of proposed meetings published July 28, 1988 (53 FR 28085). Those meetings which are definitely scheduled have had, or will have, an individual notice published in the Federal Register approximately 15 days (or more) prior to the meeting. It is expected that sessions of ACRS full Committee and ACNW meetings designated by an asterisk (*) will be open in whole or in part to the public. ACRS full Committee and ACNW meetings begin at 8:30 a.m. and ACRS Subcommittee meetings usually begin at 8:30 a.m. The time when items listed on the agenda will be discussed during ACRS full Committee and ACNW meetings and when ACRS Subcommittee meetings will start will be published prior to each meeting. Information as to whether a meeting has been firmly scheduled, cancelled, or rescheduled, or whether changes have been made in the agenda for the September 1988 ACNW and the September 1988 ACRS full Committee meetings can be obtained by a prepaid telephone call to the Office of the Executive Director of the Committee (telephone: 202/634-3265, ATTN: Barbara Jo White) until August 26 and after August 29 (telephone 301/492-8049) between 7:30 a.m. and 4:15 p.m., Eastern Time.

### ACRS Subcommittee Meetings

*Pilgrim Restart*, August 26, 1988, Plymouth, MA. The Subcommittee will review the proposed restart of the Pilgrim plant.

*Safety Philosophy, Technology, and Criteria*, September 1, 1988, Bethesda, MD. The Subcommittee will discuss the Staff's proposed implementation plan for the Safety Goal Policy Statement.

*Maintenance Practices and Procedures*, September 7, 1988, Bethesda, MD. The Subcommittee will discuss and review the maintenance rule and associated NUREG document.

*Advanced Pressurized Water Reactors*, September 15, 1988, Bethesda, MD. The Subcommittee will review the draft SER in regard to the reactor, reactor coolant system, and regulatory conformance for the WAPWR RESAR SP/90 design.

*Reliability Assurance*, September 16, 1988, Bethesda, MD. The Subcommittee will continue its review of the Equipment Qualification-Risk Scoping Study with special emphasis on the peer review comments.

*Mechanical Components*, October 26-27, 1988, Bethesda, MD. The Subcommittee will discuss recent work related to valve reliability, including: isolating high energy line tests at Wyle Laboratory, compressed air systems and valves, seismic tests on an aged Shippingport valve, etc.

*Advanced Boiling Water Reactors*, November 15-16, 1988, Bethesda, MD. The Subcommittee will continue its FDA review of this standard plant. Detailed ACRS questions will be covered on review module 1. An overview of the second review module is planned.

*Babcock & Wilcox Reactor Plants*, November 30-December 1, 1988, Sacramento, CA. The Subcommittee will meet to study the lessons learned from the approximately 2-year shutdown of Rancho Seco that occurred following the December 16, 1985 overcooling event. Topics include monitoring extended start-up program as well as plant and organization changes as a result of the restart effort.

*Advanced Pressurized Water Reactors*, Date to be determined (September), Bethesda, MD. The Subcommittee will review the licensing review bases document being developed for Combustion Engineering's Standard Safety Analysis Reports-Design Certification (CESSAR-DC).

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

Revised: September 8, 1988

SCHEDULE AND OUTLINE FOR DISCUSSION
4TH ACNW MEETING
SEPTEMBER 13 AND 14, 1988
BETHESDA, MARYLAND

Tuesday, September 13, 1988, Room P-114, 7920 Norfolk Avenue, Bethesda, MD

1) 8:30 - 8:40 A.M. Chairman's Comments (Open)
1.1) Opening remarks (DWM)
1.2) Items of current interest (DWM/RFF)

2) 8:40 - 10:45 A.M. ACNW Administrative and Procedural Matters (Open)
2.1) Preparation of ACNW Reports (DWM/MWL)
2.2) 1989 ACNW Meeting Schedule (DWM/MWL)
2.3) Procedure for NMSS Participation in ACNW Meetings (DWM/MWL)
2.4) Staff Requirements Memo Following the First ACNW/Commission Meeting: Proposed Response (DWM/MWL)
2.5) Better Provision of Information to ACNW: Proposed Memo to EDO (DWM/MWL)
2.6) Distribution of Mail to ACNW (DWM/MWL)
2.7) Chairman's Meeting with Commissioners' Assistants (DWM/MWL)
2.8) Second ACNW Meeting with Commission (DWM/MWL)
2.9) Miscellaneous Matters

10:45 - 11:00 A.M. BREAK

3) 11:00 - 12:30 P.M. Below Regulatory Concern (BRC) Policy Statement (Open)
3.1) Discussion and comment on Proposed BRC Policy Statement with RES representatives (OSM)

12:30 - 1:30 P.M. LUNCH

4) 1:30 - 3:00 P.M. Cement-Based LLW (Open)
4.1) Presentation, discussion, and comment on the Status of the NMSS Staff's Study (SJSP)

3:00 - 3:15 P.M. BREAK

* 5) ~~3:15~~ 10:15 - ~~5:00~~ 12:02 P.M. (Wednesday) Low-Level Waste and Decommissioning Division (LLWDD) (Open)

5:05 - 5:15 P.M. Break

5.1) FY 1989 Program for LLWDD presented by Division Director, M. Knapp (SJSP)

5:00 - 5:45 P.M. Executive Session - Outline and Draft Letters (Open)

Wednesday, September 14, 1988, Room P-114, 7920 Norfolk Avenue, Bethesda, MD

6) 8:30 - 8:40 A.M. Chairman's Opening Comments

7) 8:40 - ~~10:00~~ 9:55 A.M ASME Letter on Regulatory Responsibility for Mixed Waste (Open)

7.1) NMSS Staff will present and discuss the ASME letter and the Staff's position (OSM)

~~10:00~~ 9:55 - 10:15 A.M. BREAK

* 8) 10:15 - ~~12:00 NOON~~ 5:05 P.M. (Tuesday) Status of NRC Staff Study on Polyethylene, High Integrity Containers (HICs) (Open/Closed)

8.1) NMSS staff will summarize this study on HICs and discuss alternative recommendations (SJSP)

Note: Portions of this session may be closed to protect proprietary information.

12:00 - 12:~~45~~ 30 P.M. Executive Session - Draft Letters

12:~~45~~ 30 - 1:~~45~~ 45 P.M. LUNCH

9) 1:45 - ~~2:15~~ 3:10 P.M. Decommissioning Rule (Open)

9.1) NMSS staff will discuss this rule (OSM)

~~2:15~~ 3:10 - ~~2:30~~ 3:20 P.M. BREAK

2:30 - 4:~~00~~ 05 P.M. Executive Session - Finish Letters

* Sessions 5 & 8 were reversed

CERTIFIED

10-27-88

MINUTES OF THE 4TH ACNW MEETING
SEPTEMBER 13-14, 1988

The 4th meeting of the Advisory Committee on Nuclear Waste was convened by Chairman Dade W. Moeller at 8:30 a.m. on Tuesday, September 13, 1988, at 7920 Norfolk Avenue, Bethesda, Maryland.

[Note: For a list of attendees, see Appendix I. All ACNW members were present. The consultants present were Dr. Melvin W. Carter, Dr. Richard F. Foster and Mr. Ronald L. Kathren.]

The Chairman said that the agenda for the meeting had been published. He identified the items to be discussed on Tuesday. He stated that the meeting was being held in conformance with the Federal Advisory Committee Act and the Government in the Sunshine Act, Public Laws 92-463 and 94-409, respectively. He also noted that a transcript of some of the public portions of the meeting was being made, and would be available in the NRC Public Document Room at the Gelman Building, 2120 L Street, N.W., Washington, D.C.

[Note: Copies of the transcript taken at this meeting are also available for purchase from the Heritage Reporting Corporation, 1220 L Street, N.W., Washington, D.C. 20005.]

I. Chairman's Report (Open)
[Note: Mr. Raymond F. Fraley was the Designated Federal Official for this portion of the meeting.]

Dr. Moeller did not make a Chairman's report.

II. Proposed Commission Policy Statement on Exemptions from Regulatory Control for Practices Whose Public Health and Safety Impacts are Below Regulatory Concern (BRC) (Open)

[Note: Mr. O. S. Merrill was the Designated Federal Official for this portion of the meeting.]

Mr. William R. Lahs, Regulation Development Branch, Office of Nuclear Regulatory Research, gave the NRC staff presentation.

Mr. Lahs discussed the following bases for the proposed policy:

1. Three fundamental principles of radiation protection -- justification, dose limits and enhanced protection based upon ALARA principles.

2. Linear non-threshold relationship between low radiation dose and stochastic cancer risk.

3. Recognition that individuals may be exposed to radiation from more than one licensed or exempted source.

Two general conditions for exemption are:

1. Costs of additional regulatory controls to reduce individual or collective dose are not balanced by the reduction in risk.

2. Application of regulatory controls does not result in a significant reduction in risk.

The key element of the proposed policy is that it proposes individual and collective annual dose levels below which risks are sufficiently small that ALARA can be considered to have been achieved without performing a cost-benefit analysis.

Mr. Lahs explained the following principal points of the current proposal:

1. If the individual exposures are below 100 mrem per year, exemptions are possible, based on justification of practice.

2. Exemptions are likely if the practice is justified and ALARA is demonstrated, and:

   a. Individual exposures are equal to or less than 10 mrem per year, and

   b. The collective dose is less than 100 person-rem per year.

3. An open approach will be applied to truncations or weighting of collective dose for cost-benefit analysis based on the practice being considered for exemption.

4. Reliance will be placed on the definition of practice, collective dose criterion, and timely policy review to address the multiple exposure issue.

Regarding the NRC staff's activity and progress on this matter, since the ACNW last reviewed the proposed policy statement on July 21, 1988, Mr. Lahs said they have addressed, to the extent possible, the ACNW's comments arising from that meeting, responding to concerns regarding:

1. Decreasing the rigor of cost-benefit analysis as the individual dose from exempt practice decreases.

2. Numerical dose criteria for demonstration of ALARA.

3. Calculation and use of collective dose assessments.

He said that the effects of the above ACNW comments on the NRC staff reaching consensus were:

1. Solidification of their views of justification of practices and exclusion provisions for frivolous practices.

2. Increased emphasis on use of a risk foundation for the policy.

3. Diversity of views on truncation and weighting of collective dose.

4. Diversity of opinions on how to characterize the broad range of exemption possibilities through use of numerical guidance.

Mr. Lahs said that there are still differences of opinion among staff members on individual dose criteria for demonstration of ALARA -- whether it should remain at 1 mrem/year as previously recommended, or 10 mrem/year as proposed at this time. Factors to be considered in evaluating which value to use were: (a) multiple exposures, (b) trends in risk coefficient, and (c) the relationship to other applicable international and national values.

In addition to the three ACNW concerns expressed above which the staff was able to accommodate, Mr. Lahs cited other ACNW concerns which the staff did not feel they could reasonably incorporate into the revised version of the document, but to which they did respond. The concerns cited were:

1. Need for collective dose criteria.

2. Weighing of collective dose for inclusion in calculation and use options.

3. Review of past exemptions to identify beneficial changes.

4. Improved response to Commission questions.

The Committee discussed these topics with the staff. [As a result of the discussion, the following statements were subsequently incorporated into a letter report to Chairman Zech dated September 15, 1988.]

1. The proposed exemption system is based on the risks associated with the exposures involved, and the system, if modified as suggested here, will be compatible with most relevant regulations and policies of the NRC and other federal agencies, as well as those of international organizations.

2. The ACNW urges the adoption of dose rates up to 10 mrem (0.1 mSv) per year to individuals and annual collective doses up to 100 person-rem (1 person-Sv) as acceptable limits arising from a single exempted practice. Please note that this is a different use of the dose limits than is proposed in the draft Policy Statement. Provisions should be made to ensure that individuals within any population group are not exposed to

any combination of exempted practices that results in dose rates greater than one to two times the dose rate limit. Experience indicates that such occurrences should be rare.

3. The current draft of the proposed Policy Statement is in need of extensive revision, partly to comply with the recommendations made under item 2, above. Additional items that need to be addressed include:

   a. The draft of the proposed Policy Statement should clearly specify 10 mrem (0.1 mSv) per year and 100 person-rem (1 person-Sv) per year as the limits for individual and collective dose rates, respectively. The ancillary use of a 100 person-rem (1 person-Sv) per year limit as a guide to the necessity for ALARA analysis should be removed (see item b, below).

   b. There is a need for a much clearer statement relative to the role and application of the principle of "justification" in assessing practices being considered for exemption.

   c. Instead of discussing dose rates at which collective dose calculations should be truncated, it would be better to do a complete calculation, and include within the data a tabulation of the number of people within each of several dose rate ranges.

   d. The section pertaining to the linear nonthreshold hypothesis needs to be clarified. One approach would be simply to include a brief statement that risk (cancer) estimates should be based on the assumption that the linear nonthreshold hypothesis applies and that this approach will result in conservatism in the resulting estimates.

   e. Since its use represents a change in NRC policy, the concept of the Effective Dose Equivalent should be defined within the Policy Statement. In a similar manner, since SI units are in common usage throughout the world, all dose rates and collective doses should be expressed in these units as well as in the conventional units.

4. As the proposed Policy Statement correctly points out, the Agreement States will play an important role in the implementation of the proposed exemptions. For this reason, it is important that the Statement be formally submitted to the Conference of State Radiation Control Program Directors for review and comment.

The Committee added that, the resulting document, when properly revised, will represent a pioneering effort in nuclear safety regulation, will help conserve those of our resources that are available for the control of environmental and public health problems, and should receive strong support from the professional radiation protection community. The ACNW believes that the proposed Policy Statement, if revised as suggested above, will serve well as a starting point for the position to be stated at the upcoming international meeting on this subject, being held in Washington, D.C. on October 17-19, 1988.

III. Solidification of Cement Bonded Low-Level Waste (LLW)
[Note: Dr. S. J. S. Parry was the Designated Federal Official for this portion of the meeting.]

Dr. John Greeves, Division of Low-Level Waste Management and Decommissioning (LLWM), stated that the NRC staff was in the process of reaching decisions on topical reports relating to cement bonded LLW and the use of high intensity containers constructed of polyethylene. He indicated that the staff would welcome comments from the Committee on these topics.

Dr. Michael Tokar, Division of Low-Level Waste Management and Decommissioning, reminded the Committee of earlier discussions held with the Committee's predecessor, the Advisory Committee on Reactor Safeguard's Subcommittee on Waste Management. He noted the several incidents at nuclear power plants that have resulted in improperly solidified low-level wastes. He described the staff's interactions with the Department of Energy and its contractors at the West Valley Demonstration Project.

The West Valley Demonstration Project Act of 1980 authorizes DOE to process the liquid wastes and dispose of them in a repository. The West Valley Demonstration Project is intended to process the supernate and sludge phases and strip out the major portion of the radioactive corstituents. The highly radioactive materials which have been absorbed on ion exchange columns will then be converted to a borosilicate glass in a process closely resembling that planned for use at Savannah River. The second waste stream, which is largely various sodium salts and contains minor concentrations of various fission products, is to be converted to a cement bonded waste form. It is to be processed in individual batches and poured into 71-gallon drums for solidification. The DLLWM has been working closely with DOE and its contractor, Westinghouse, in the development of this latter process.

The final waste will contain approximately 39% sodium salts. There will be approximately 15,000 drums of the solidified material. The current intent is to store these drums at the West Valley site in a building that will be covered with earth. It was noted that the entire operation is not within the regulatory purview of the NRC, although it is intended that the cemented waste will meet Part 61 criteria.

The development of the scaled-up process to solidify the supernate was described briefly. It was noted that in scaling up the processing equipment, it was necessary to modify some of the equipment and processes. Thusly, the large-scale mixing equipment, as an example, is a high shear device that imparts a large amount of energy to the mix. This resulted in a foaming condition that had to be eliminated by the use of a silicon based anti-foaming agent. Additional small scale testing of simulated waste indicates that this problem has been resolved.

DOE then initiated process testing using actual supernate. The tests produced additional difficulties. Specifically, the mixtures were very slow to solidify. Further, when they did set up, there was a phase separation in which water was rejected or bled from the solid phase. This behavior was traced to the presence of organic acid salts in the actual supernate, which had not been included in the non-radioactive simulated formulations used in the earlier processing tests. Once it was realized that the presence of the low concentrations, on the order of 100 to 150 ppm, of the organics retarded the setting up of the waste, corrective actions were taken. In this case excess calcium is added to the mix to suppress the effect of the organics. It was noted that the several additions had to be made to the mix in a specific order to avoid recurrence of the problems.

Dr. Tokar noted that these activities and problems pointed out the need for very careful experimentation on actual wastes prior to initiating a major solidification campaign.

Upon questioning by Dr. Orth, Dr. Tokar indicated that he did not know what the final cesium concentration was in the waste. The staff noted that the reason that the high energy mixer was used was to improve the homogenity and strength of the product. It was also acknowledged that this waste material has no similarity to the cemented wastes prepared at nuclear power plants.

Dr. Greeves noted that the content of transuranic (TRU) elements in the wastes is a question to be resolved. The content is to be determined and then addressed in an EIS. If the TRU content is too high, perhaps over 100 nanocuries per gram, a different disposal technique may be required.

Dr. Tokar indicated that some 1000 drums of solidified waste have been produced in testing out the full-scale equipment. It was also his opinion that the cooperative program between DOE and NRC had been mutually beneficial.

The presentation then shifted to a discussion of the commercial operations that the staff are reviewing. These activities include the review of topical reports from four vendors. The reports summarize the experimental development of processes and formulations for combining LLW with cement binders. The vendors submit these reports for the staff's review and approval. It was noted that although upwards of 30 reports on cement formulations had been submitted over the years, none has been approved.

The status of the various vendors' reports was discussed in alphabetical order, with the first vendor being Chem-Nuclear. Dr. Tokar described the events leading up to the current position. Initially Chem-Nuclear had submitted only one topical report on one formulation. As the staff of the newly organized Division of Low-Level Waste and Decommissioning explored the matter further, it was discovered that Chem-Nuclear was actually using approximately 50 different formulations. Based on the situation with Chem-Nuclear and other vendors and the continuing reports of occasional problems

in solidifying waste at nuclear power plants, the Division requested all the vendors to provide detailed information on the formulations currently in use. In response to the request, Chem-Nuclear submitted a topical report that reduced the number of formulations considered from 54 to 36. Staff review revealed significant deficiencies in the performance of some of these formulations, so Chem-Nuclear withdrew their reports in toto and replaced them with three new reports. These latter reports each focused on separate binder systems, cement, pizzolans and a proprietary material, PMC. These are the only Chem-Nuclear topical reports on waste forms that are being reviewed by the staff at this time.

Dr. Carter asked how long it takes to review such a report. It was acknowledged that some reports had been in-house for up to four years. However, given the recent focusing of Divisional efforts on this and related matters, it is expected that such reviews may be completed within a year. An estimate of four staff-months was given for the expended effort. It was noted that delays in responses by the vendors have a significant effect on the elapsed time for a review to be completed. It was also noted that the staff's backlog has been materially reduced.

The dual nature of licensing the process by NRR and the product by NMSS was also touched on.

Dr. Greeves discussed a recent report to Mr. Hugh Thompson, Director, NMSS, on the adequacy of the criteria in Part 61. It was the conclusion of the report that the staff continue efforts to reduce the backlog and not attempt to make significant changes in Part 61.

Dr. Tokar then discussed the LN Technologies topical reports. LN had assumed that their earlier work was sound and that certain of the deficiencies noted by other vendors would not be found in their material. They in fact did find precisely the same problems. Using virgin resins at approximately 39 weight percent, the strengths decreased upon extended curing. At lower loadings, approximately 18 weight percent, this behavior was no longer noted. It was stated that no difference in the test results were observed when the specimens were immersed in demineralized water or synthetic seawater.

The next vendor discussed was Stock. Essentially, Stock has not responded to the staff's inquiries. Consequently, the staff has discontinued its review of Stock's reports. It was not known if the staff's actions have resulted in any reduction in the use of Stock's process by reactor operators.

The last vendor discussed was Westinghouse-Hittman. The staff has indicated that while this vendor was initially reluctant to perform the required tests, they are now cooperating with NRC.

There was a description of the Office of State Program's efforts in working with the states to coordinate the staff's reviews and findings with the individual state regulating bodies. The Committee noted the difficulty in enforcing regulatory changes upon the individual Agreement States. Ms. Cardelia Maupin, Office of State Programs, noted the effective and prompt cooperation by both the NRC staff and the Agreement States' personnel in this and other areas.

In closing, Dr. Tokar reviewed the current status and recent activities in this subject area. He noted that a significant reduction in the backlog of reports has occurred in the past year.

IV. High Density Polyethylene High Integrity Containers

[Note: Dr. S. J. S. Parry was the Designated Federal Official for this portion of the meeting.]

In opening the discussion Dr. Greeves noted that the status of this topic is different from that of the previous topic. He indicated that the staff was nearing a decision on the suitability of polyethylene as a principal material of construction. He stated that the staff would welcome an advisory letter from the Committee on this topic.

Dr. Tokar initiated the technical discussion by reviewing the several independent technical analyses that have been done on the application of cross-linked, or high density polyethylene (PE) as the primary material of construction for high integrity containers (HICs). The first technical analysis was initiated by the NUS Corporation, later LN Technologies, and the second was done by Brookhaven under NRC contract. Based on the findings, the staff held discussions with the state of South Carolina and the several vendors of PE HICs. The staff requested Dr. Stewart Silling, Brown University, to perform an independent review. The results of Dr. Silling's review were presented to the Committee during its first meeting in June 1988. Each study concluded that there was a serious question of the capability of PE as a structural component of HICs.

The staff requested the vendors and South Carolina to provide further responses to Dr. Silling's report. Chem-Nuclear provided an original and a revised set of responses. Westinghouse and South Carolina provided separate, individual comments. All comments have raised similar questions relating to the assumption made by Dr. Silling. These questions centered on the use of data from non-cross-linked PE, not assuming internal stiffening by the waste and no external support being assumed for the backfill.

Based on the reports and responses, the staff identified four principal areas of question. They are: (1) buckling of PE, (2) creep behavior, (3) ductile/brittle failure transition, and (4) irradiation effects. Estimates of the onset of PE buckling and creep is determined by which modulus relating stress and strain is used in the deformation calculations. It is Dr. Silling's and

the staff's position that the secant modulus should be used rather than the Young's modulus, since it is a more conservative approach and is more appropriate for visco-elastic materials. The staff discussed a related matter which was how one takes into account the stiffening effects of the waste within the HIC and the backfilled earth surrounding the HIC. It was the staff's position that attempting to quantify such effects for various wastes and a range of soils would be essentially impossible. Again, the conservative approach would be to ignore such contributions. Dr. Orth asked if full-scale tests could be or had been made to demonstrate these effects. Dr. Tokar described the tests that had been made and concluded that the tests were not adequately representative of actual conditions.

With respect to creep behavior, the vendors believe that they have adequately taken that phenomenon into account. It is the staff's position that the designers do not, and in fact cannot, take creep into account because deformation will occur at very low stresses. Further, once creep or deformation initiates, buckling and eventual rupture will occur.

The ductile/brittle transition temperature question was discussed by Dr. Tokar who referred to data developed by a German experimenter named Graube. He developed a set of curves relating stress to failure at various temperatures for linear-bonded PE. This information was, in part, the basis for Dr. Silling's adverse findings. The vendors responded that these data were not representative of cross-linked PE and they presented, in their written responses, some preliminary data from Phillips. These data were not published data, but were privately obtained by Chem-Nuclear and Westinghouse-Hittman. The Phillips data were generated as a basis for the development of a piping material suitable for hot water tubing, and tests are being run out to times exceeding 100,000 hours. It is planned that a 50% safety factor will be applied to the design of the piping. The staff checked with Phillips and found that certain failure data had not been requested by the vendors, and consequently, was unreported in the vendors' submissions to the staff. Further, the stresses applied had been miscalculated and as a result erroneous data were submitted by the vendors. The staff replotted the corrected data with the Graube data and close agreement between the linear-bonded and cross-linked PE data was obtained. The net effect is to minimize the contention that the two types of PE will demonstrate particularly different stress-strain properties as a function of time and temperature, thus supporting the Silling report.

In discussing the effect of irradiation on the mechanical properties of PE, the staff indicated that the vendors had made several calculational errors in computing the dose that the PE received. The staff's conclusions are that the doses are high enough for significant effects on the tensile properties of PE to be observed. However, the staff does not believe that the irradiation of the PE is, of itself, sufficient to reject the use of PE. It is considered a peripheral matter, with negative weighting.

Dr. Tokar closed his presentation by indicating that the staff was not yet ready to annunciate a position on PE HICs but was reaching that point and would welcome the Committee's considered views.

An extended discussion between the Committee and the staff followed. It was general in nature and touched on the economics of HICs, manufacturing capabilities, and alternative designs. The discussion closed with the thoroughness of the staff's efforts being acknowledged and an agreement that the Committee would provide appropriate comments.

V. Regulation of Mixed Radioactive and Hazardous Waste (Open)
[Note: Mr. O. S. Merrill was the Designated Federal Official for this portion of the meeting.]

Mr. Timothy C. Johnson, Regulatory Branch, Division of Low-Level Waste and Decommissioning, briefed the Committee on the ASME letter to Chairman Zech, dated May 4, 1988, on regulatory responsibility for mixed waste, and the staff's position on this topic. He stated that, in 1985, the Congress considered the mixed waste jurisdiction issue while conducting hearings on the Low-Level Waste Policy Amendments Act. The Environmental Protection Agency (EPA) and NRC provided testimony. NRC recommended that a single agency be given jurisdiction over this issue. Congress left the issue open, but recommended that EPA and NRC resolve the problem. In response to the recommendation, EPA and NRC have worked closely together to produce the following three guidance documents:

1. Guidance on the Definition and Identification of Commercial Mixed Low-Level Radioactive and Hazardous Waste, January 8, 1987

   Mixed waste was defined as a low-level radioactive waste that also has a hazardous component either of:

   (a) listed materials under EPA RCRA regulations, or

   (b) waste that would meet the hazardous waste characteristics that are defined specifically under the EPA RCRA regulations.

2. Combined NRC-EPA Siting Guidelines for Disposal of Mixed Low-Level Radioactive and Hazardous Waste, March 13, 1987

   The siting guidelines used the NRC siting requirements in 10 CFR Part 61 and added to them specific siting requirements that applied to RCRA or that EPA expected to be used in their mixed waste criteria.

3. Joint NRC-EPA Guidance on a Conceptual Design Approach for Commercial Mixed Low-level Radioactive and Hazardous Waste Disposal Facilities, August 3, 1987

   The conceptual design of a mixed waste disposal facility had some inconsistencies. The NRC Part 61 regulations were designed to eliminate a "bathtub," whereas, the RCRA regulations prescribes a double leachate collection system. The resulting design, in this document, meets the EPA requirement but was configured in such a manner that a "bathtub" would not occur in the disposal facility, thus meeting the NRC requirements also.

Dr. Moeller asked if there was a lower limit on how much organic material could be present in a mixed waste. Mr. Johnson replied that there is no lower limit for the listed wastes under RCRA to be defined as hazardous. However, under the second criteria (1., b.) mentioned above, i.e., the characteristics test, if the concentration is below a specified level, the substance is considered not to be hazardous.

Mr. Johnson said that there are three operating commercial low-level radioactive waste disposal sites, none of which ia permitted to receive hazardous waste. Consequently, any mixed waste generated is currently being held in storage at the licensee's facility. In response to a question from Dr. Moeller, Mr. Johnson said that there are currently within the U.S. no mixed waste disposal facilities that are licensed to receive radioactive materials, but they are permitted to receive hazardous materials.

Dr. Steindle asked whether there is sufficient information in the EPA/NRC guidance documents to help a potential licensee get a license. Mr. Johnson said, no, and explained that EPA and NRC decided not to develop a licensing guidance document because of the complexities due to the current formation of compacts and the fact that not all states are NRC agreement states or authorized EPA states. As a result, the licensing procedures might therefore be different for different entities. Consequently, potential licensees will follow the current procedures of obtaining a license from NRC or an agreement state for the radioactive portion, and a permit from the EPA or one of their authorized states for the RCRA hazardous waste portion.

Dr Steindler asked how the Department of Energy (DOE) was handling their mixed waste problem. Mr. Johnson said that DOE has a larger mixed waste source term than the NRC commercial sites, and that DOE has a major effort underway to deal with the problem.

In answer to a question from Dr. Orth about the above-mentioned storage of mixed waste at a facility which may not be an EPA-permitted facility, Mr. Johnson discussed the three categories of compliance that exist within EPA-regulated states:

1. States in which EPA regulates hazardous waste generation and storage

2. States that EPA has authorized to regulate mixed waste and hazardous waste.

3. States that EPA has authorized to regulate hazardous waste, but not mixed waste.

Dr. Carter asked how contaminated lead bricks and shielding materials are now being handled, since they are specifically mixed waste. Mr. Johnson said that lead bricks and shielding material are being stored. In some cases, lead bricks are being decontaminated for reuse, and therefore do not become waste.

Mr. Johnson discussed the following current activities between NRC and EPA:

1. Resolution of public comments on the definition of mixed waste. It is expected that the revised version of the January 1987 draft document will be published in the Federal Register in early October 1988.

2. Preparation of joint guidance on sampling and testing. Expected to be completed by December 1988.

3. Preparation of joint guidance on storage. Expected to be completed by December 1988.

4. Preparation of joint guidance on inspection and enforcement. Expected to be completed by June 1989.

With regard to the joint guidance on storage, Dr. Steindler asked about the volume of mixed waste. Mr. Johnson said it was relatively small. This is being considered by U.S. Ecology in its evaluation of whether there is a market for a mixed waste disposal facility at their Hanford, Washington, site. Dr. Smith observed that the only decision to be made is whether the customer is willing to pay the cost.

Dr. Moeller mentioned the decommissioning rulemaking to be discussed later in this meeting, stating that in decommissioning you do a lot of decontamination. He asked if that would involve organics or other chemicals that would result in mixed wastes. Mr. Johnson said yes, but that the industry is aware of this problem and would try either not to generate the waste or to minimize the volume.

Mr. Johnson then discussed the last guidance document on joint inspection and enforcement, which NRC and EPA plan to publish in June 1989. The document will address some of the issues raised on interaction with EPA authorized states and regions and NRC regions, viz., such issues as whether inspection should be jointly performed, who has authority in which areas, etc.

Mr. Johnson presented a summary of the major points contained in the American Society of Mechanical Engineers (ASME) mixed waste position paper, which was the subject of a meeting between the NRC staff and representatives of the ASME on June 30, 1988.

1. Dual regulation of mixed waste is unnecessary and too burdensome and costly.

2. The basic goal is one-agency regulation of mixed waste, under performance based requirements -- this requires legislation, which Congress has previously declined to provide.

3. Subsidiary goals include:

   (a) Exclusion of high-level and TRU wastes, and the HLW repository, the MRS, and the WIPP from RCRA coverage;

   (b) Expansion of the NRC definition of byproduct material to include nonradioactive materials;

   (c) Formation of an inter-agency working group to advise the government.

4. Recommendations for EPA:

   (a) Modify inspection requirements for mixed waste;

   (b) Develop generic delisting criteria and streamline the delisting process;

   (c) Expand list of chemicals in relisting rulemaking (chemicals eligible for exclusion on the basis of low concentrations);

   (d) Extend the hazard ranking system (HRS) to mixed waste by also accounting for the radiation risk.

In summary, the thrust of the ASME position is that the U.S. Congress should eliminate dual regulation of mixed waste by changing current laws and regulations to provide for regulation by one agency under one set of performance-based rules. In connection with passage of the Low-Level Radioactive Waste Policy Amendments Act, the Commission previously indicated that it supported single-agency regulation of mixed waste by NRC under 10 CFR Part 61. The Congress chose not to act on this recommendation and thus to eliminate dual regulation of mixed wastes. The NRC staff's current approach is to exert continued effort to minimize dual regulation problems and to make dual regulation as workable as possible.

Dr. Smith said that Congress considered keeping the regulation a joint responsibility because it would receive the best effort from both agencies, whereas if the regulation is placed under a single agency, the efforts of the other agency might be slighted. Mr. Johnson agreed, and added that if it were legislatively mandated that NRC should be the single-agency regulator, it would place an onerous burden on NRC -- potential rulemaking, developing a completely new set of regulations that apply to mixed waste, and potentially having to implement the RCRA requirements as written.

Dr. Smith asked a question about ASME's recommendation that high-level and TRU wastes, and the HLW repository, the MRS and WIPP be excluded from RCRA coverage. Mr. Johnson said that this recommendation was motivated by the fact that all of the above-named wastes and facilities might have organic solvents or other hazardous components present, in which case RCRA requirements would, by law, be applicable. The reason given by ASME that they should be excluded from RCRA is that the repositories will provide a greater protection than disposal under RCRA requirements. Regarding DOE's WIPP site, New Mexico has not yet been authorized to regulate mixed waste. Until they are, the matter is on hold at EPA, pending their approval of the mixed waste authorization. Dr. Moeller asked if this means that the high-level waste repository at Yucca Mountain and the WIPP site may have major hurdles ahead in this realm. Mr. Johnson said they would if it is determined that there are hazardous components in the wastes to be placed in these facilities.

Drs. Steindler and Moeller asked about the disposal of hospital wastes, indicating that waste from a hospital might contain some chemical that is on EPA's list. Mr. Johnson said if they do not, it is not a mixed waste issue; if they do, they are subject to RCRA standards. Also, EPA is currently evaluating other chemicals which could be added to their list. EPA also can delist certain chemicals involved in specific applications, but not in a generic sense.

Mr. Johnson said that ASME wants the NRC definition of byproduct material to be expanded to remove the uncertainty regarding nonradioactive materials that might be produced in fission or as the result of radioactive decay. The NRC position on this issue is that jurisdiction is defined by the Atomic Energy Act and that it would not be just a simple matter of changing the definition.

Dr. Moeller asked about the ASME recommendation to replace design criteria by performance criteria. Mr. Johnson said that the design criteria that EPA has in their RCRA provision are prescriptive, whereas Part 61 is a performance-based regulation. He said that ASME's position is that the EPA requirements may not necessarily always reflect the other conditions at the site that may also inhibit migration of materials.

Following a discussion among Drs. Steindler, Moeller, Orth, and Mr. Johnson about the previously discussed ASME recommendation that high-level and TRU wastes and associated repositories and facilities be excluded from RCRA coverage, Dr. Orth suggested to Dr. Moeller that the Committee hear from representatives of DOE. Dr. Moeller agreed, adding that the Committee should hear from representatives of both DOE and EPA with regard not only to the problem in general, but also with regard to WIPP and the HLW repository. Dr. Orth added that other sites where DOE is presently storing material -- Savannah River and Hanford -- might be included in the discussion.

The Committee agreed that sessions should be scheduled with DOE and EPA for additional discussions on the possible exclusion of high-level and TRU wastes and associated repositories and facilities from RCRA coverage.

VI. Division of Low-Level Waste Management and Decommissioning FY 1989 Program (Open)

[Note: Dr. S. J. S. Parry was the Designated Federal Official for this portion of the meeting.]

Dr. Malcolm Knapp, Division Director, provided a briefing on the division's FY 1989 program. The current budget is for 57 full-time employees (FTEs) and $1.6M in technical assistance or external contract funds. It was noted that these figures are 17 FTEs and $0.5M less than the original budgetary request. The personnel breakdown is 40 FTEs at Headquarters and 17 in the regional offices, principally in the Uranium Recovery Field Office in Denver. Dr. Knapp indicated that on the average some four hours of inspector time per year has been allocated to the inspection of radwaste operations at each nuclear power plant. These figures do not include the time expended by the resident inspectors.

As a result of budget decisions, Dr. Knapp indicated that the certain programs will progress at a slower rate than anticipated and others will not be worked on at all, such as support for the on-site disposal of LLW. Dr. Steindler noted that the work in the area of LLW solidification and HIC topical reports is progressing at a good rate. He asked what was the level of support for those programs. Dr. Knapp indicated that about 2.1 FTEs and $0.4M have been budgeted. He also noted that as internal FTEs were increased, external technical assistance decreased.

The program is subdivided into three major groupings: Low-Level Waste, Uranium Recovery, and Decommissioning, with 3 to 4 subgroupings under each major set. Within these major and subgroups there are some 30 individual items or projects identified.

The Low-Level Waste group has 22 FTEs and $1.1M in technical assistance funds assigned to it. Its four subgroups are: (1) Regulation and Guidance, (2) Licensing and Reviews, (3) Inspections, and (4) Assistance to States. The breakdown of FTEs are: 5, 11, 2, and 4, respectively. Only items (1) and (2) receive contract dollars, $0.6M and $0.5M, respectively. Within these four subgroups there are 15 individual budget line items.

The Uranium Recovery grouping has 30 FTEs and $0.3M in technical assistance funds assigned to it. Its four subgroups are: (1) Regulations and Guidance, (2) Licensing and Review, (3) Inspections, and (4) Remedial Action Reviews. The breakdown of FTEs are: 1, 11, 2, and 15, respectively. Items (2) and (4) receive $0.1M and $0.2M, respectively. These four subgroups contain 12 individual budget line items.

The Decommissioning group has 5 FTEs and $0.2M divided among three subgroups: (1) Regulations and Guidance, (2) Licensing and Reviews, and (3) West Valley Low-Level Disposal Activities. The respective FTEs assigned are: 1, 2, and 2, with items (3) receiving $0.2M in technical assistance.

Dr. Knapp discussed each of the groups and subgroups in detail and responded to specific and general questions by the committee. One of the major points noted was the probable effect of the LLW Amendments Act on the safety and structure of the LLW disposal system. Dr. Knapp expects to see a reduction in the number of LLW disposal sites as the impact of higher disposal fees and reduced volumes of LLW begin to be felt. Currently, it is possible that over 12 sites will become or stay operational by the early 90's. Dr. Knapp believes that this number will be reduced to something like 4 to 6 as the impact of increased fees and reduced volumes of waste is felt.

Dr. Smith noted that certain activities will require support from EPA to complete. Dr. Knapp agreed with that observation but was unable to give any assurance that such support would be forthcoming.

Dr. Knapp noted the staff's effort to reduce the manpower required in support of the uranium recovery program. He also described the cooperative efforts with the EPA to set ground water limits near mill tailings sites. This entails reducing the number of documents that NRC reviews for each site. Currently, the staff receives and examines some 10 or 11 documents relating to each site. They are exploring with DOE the possibility of DOE restructuring one specific document slightly and using the others as references. In this manner the staff would then only have to review the one restructured document.

The current activities related to decommissioning were presented. These are related to the recently issued Decommissioning Rule. One nuclear power plant is close to submitting a decommissioning (dismantlement) plan. Another, Humboldt Bay, is closed and may shortly be initiating a decommissioning effort. NRR has approved their plan and the effort will shortly be transferred to NMSS. (Note: The responsibility for reactor decommissioning has recently been transferred to NMSS but some residual activities remain in NRR.)

The staff's efforts at West Valley were also noted. A portion of these were mentioned in Item III above. In addition to the support in the area of LLW solidification, the staff will be required to concur in the DOE decision whether the cutoff point for plutonium in LLW should be 10 or 100 nanocuries per gram.

On a peripheral matter, Dr. Knapp indicated that LLWM plans to complete the preparation of the Branch Technical Position on the monitoring of LLW sites. This was apparently in response to interest expressed in it by the states and the Committee.

In closing, the Committee discussed with Dr. Knapp the Commission's charge to review resource allocation and performance in general. It was agreed that to do that it would be necessary to determine the perceptions of other groups as to how LLWM was supporting them and fulfilling the division's mission.

The Committee agreed to discuss with the NRC Commissioners (on October 27, 1988) their reactions to Dr. Knapp's review of the programs of the LLWM.

VII. Decommissioning Rule (Open) [Final Rule was published in the Federal Register (53FR24018) on June 27, 1988, which was also its effective date.] [Note: Mr. C. S. Merrill was the Designated Federal Official for this portion of the meeting.]

Mr. Daniel Martin, Division of Low-Level Waste Management and Decommissioning, presented an overview of the decommissioning program and stated that responsibility for the program has been transferred from NRR to NMSS. Dr. Moeller asked if the main purpose of the rule is to assure that plans will be in place and that funding will be available for decommissioning. Mr. Martin answered in the affirmative.

Mr. Martin said that the program responsibility for research and test reactors remains with NRR. The four areas of responsibility transferred to NMSS for decommissioning power reactors are:

1. Review of decommissioning plans and preparation of supporting Safety Evaluation Reports and Environmental Assessments.

2. Project management after the decommissioning plan is approved and a possession-only license is issued.

3. Oversight implementation of the decommissioning plan implementation.

4. Eventual license termination.

Mr. Martin discussed the decommissioning rule in general, which describes the following:

1. Facilities covered: power reactors, research and test reactors, and materials licensees.

2. Facilities not covered: LLW and HLW disposal sites and uranium mill tailings sites, i.e., sites where waste would remain permanently on site.

3. Areas covered by the requirements:

   a. Plans for decommissioning.
   b. Financial assurance for decommissioning.
   c. Recordkeeping to facilitate decommissioning.
   d. License termination procedure.

4. Areas not covered by the requirements: requirements for decontamination to permit unrestricted use. A separate effort is being conducted by RES in this area.

Mr. Martin reviewed casework and the status of decommissioning at nine nuclear power plants. He also discussed the casework on materials licensees, with special emphasis on project review for decommissioning of facilities in this category.

The following concerns were discussed by the Committee:

1. Dr. Moeller asked how many plants will be shut down within the next 5 years. Mr. Martin answered that several plants are already shut down and that one or two may be shut down or be decommissioned in the near future. Beyond that, the next one, Yankee Rowe, is not scheduled to be shut down until 1997. He said the preliminary plan is to be submitted 5 years in advance of shutdown and that about the time of shutdown another plan is submitted which updates the preliminary plan, including the revision of the cost estimates (financial assurance) to ensure that they are consistent with the detailed plan. He then explained the options of dismantle, entomb and SAFSTOR, adding that decommissioning is to be completed within 6 years from the start time and that financial assurance certification is required to be updated on an annual basis.

2. Dr. Smith asked about the decommissioning of research and test reactors, particularly of university reactors, inquiring as to whether the cost of decommissioning might be onerous to the universities. Mr. Frank Cardile, Office of Nuclear Regulatory Research, said that NRC would be satisfied to have state-sponsored schools identify the cost to decommission, certify that they are a state agency, and confirm that the state will accept responsibility for

the cost of decommissioning. Mr. Cardile stated that private institutions do not have to set aside a specified amount of money to provide financial assurance, but could post either a surety bond or letter of credit to guarantee that the required funds would be available when needed.

3. The requirements for decommissioning materials licensees, i.e., byproduct, source and special nuclear material licensees, are more complex than requirements for reactors. There are about 9,000 such licensees. About 1500 licensees will have to provide decommissioning plans and funding plans (or financial assurance certifications) for pre-approval because of unusual radiological conditions where either releases or doses to workers would be higher than those encountered during operation. Due to the large number of licensee plans to be submitted, the ACNW members expressed concern about the volume of the decommissioning plan documentation and the ability of the relatively small NRC staff to handle the large influx and review of these plans. Dr. Moeller expressed concern about the necessity for the submission of decommissioning plans by every small user, viz., hospitals and universities. Mr. Martin assured him that NRC's primary concerns are with large users and users who have nuclides with half-lives longer than 120 days, thus having a greater probability of large-scale contamination of their facility than a small user, resulting in a correspondingly large-scale decommissioning effort. Small users and those using short-lived nuclides only need to document the decommissioning efforts (and associated costs) that are envisioned which, if small, would be acceptable to the NRC. He added that 5 out of 6 materials licensees will not have to be responsive to this requirement. Mr. Cardile added that sealed users are not covered by the requirement.

4. Dr. Moeller expressed concern that the decommissioning rule may impose unnecessary paperwork on some licensees, then asked if the rule is final. Mr. Martin said it is final and that there is supporting analysis which contains the rationale for imposing the paperwork requirement. Dr. Moeller asked if the Conference of State Radiation Control Program Directors commented on the rule. Mr. Cardile said they did not and, in fact, NRC received very few comments from materials licensees. (He said later that NRC sent the proposed rule to about 8000 materials licensees.) The NRC however, received comments from the Atomic Industrial Forum's Committee on Radiopharmaceuticals. Dr. Smith asked if the proposed rule came before the ACRS. Mr. Cardile replied that the ACRS elected not to review it. Dr. Moeller recalled that it was presented to the ACRS as a rule to assure financial resources for decommissioning, and that it was primarily for nuclear power plants. Mr. Cardile said that there have been cases where small licensees have gone out of business and, because of being in a poor financial condition, have left contaminated facilities. This, plus the fact that Pacific

Northwest Laboratory's studies looked at average case (not worst case) scenarios, to determine average decommissioning costs, is part of the rationale for this rule. Dr. Steindler suggested that the ACNW ought to have a more careful review of what the implications of the rule are. Dr. Smith agreed. Dr. Orth suggested that ACNW wait until a number of licensee submissions have been submitted, then ask users' associations for their views on rule compliance.

The Committee requested that the ACNW staff review the rule in more detail and prepare a summary for the Committee. The ACNW staff was also requested to provide to the Committee copies of the Pacific Northwest Laboratory's reports on decommissioning cost estimates referred to by the NRC staff during the presentation.

VIII. Executive Session (Open/Closed)

A. Reports, Letters and Memoranda (Open)

1. ACNW comments on the Suitability of High Density Polyethylene High Integrity Containers (Letter to Chairman Zech dated September 16, 1988)

The Committee recommended that the NRC Staff bring to closure its study of the HDPE HICs whose designs have been submitted to it for approval. The Committee observed that the present designs which use polyethylene will have difficulty in meeting the NRC criteria for structural stability for containers for Class B or Class C waste. The Committee, however, is mindful of HDPE's low corrosion rates which, when coupled with other materials that provide the necessary mechanical properties, could result in a container that should be able to satisfy the pertinent NRC criteria.

2. ACNW comments on the Proposed Policy Statement on Below Regulatory Concern (Letter to Chairman Zech dated September 15, 1988)

The Committee urged the adoption of dose rates up to of 10 mrem per year to individuals and annual collective doses up to 100 person-rem as acceptable limits arising from a single exempted practice. The committee offered several suggestions for the revision of the proposed Commission Policy Statement on Exemptions from Regulatory Control for Practices Whose Public Health and Safety Impacts are Below Regulatory Concern.

B. Other Committee Conclusions

1. Preparation of ACNW Reports (Open)

The Committee discussed procedures for finalizing its letter reports. The Committee agreed to the following procedures:

a. A letter-writing session should be scheduled at the end of each review or briefing session when a letter report may be written. To allow adequate time for consideration, urgent items should be scheduled for the first day of the meeting.

b. The Committee should take a formal vote to indicate final approval of its letter reports.

c. When it seems desirable, the ACNW Chairman will remain after the meeting to assist the ACNW staff in editing the letter reports.

d. For less urgent items, the Committee may withhold its final vote so that a draft can be mailed to the members and consultants for additional review and comment. Approximately one week will be given to respond via a "sign-off" sheet.

The Committee also agreed that the ACNW Staff could edit final letter reports prior to their preparation for distribution. Any changes, however, should be limited to those of an editorial nature. As with ACRS letter reports, the approval of the Chairman and/or the principal author will be requested before distribution of any report in which proposed changes appear in any way to alter the intent of the letter report.

2. ACNW Meeting Schedule for 1989 (Open)

The Members agreed to provide information about dates during 1989 when they can be available for ACNW meetings. The ACNW Staff will coordinate the responses and identify a set of potential dates for 6 to 8 ACNW meetings.

3. NMSS Participation in ACNW Meetings (Open)

The Committee discussed a Policy Directive to NMSS division-level management personnel, which addressed the nature of, and requirements for, NMSS participation in ACNW meetings. A number of changes, primarily editorial, were suggested. A substantive change was suggested that documents to be reviewed by ACNW should be received at least two weeks in advance of subcommittee or full committee meetings.

4. Response to Staff Requirements Memorandum (SRM) dated July 5, 1988

The Committee discussed its view of the subject SRM and, in particular, the responses suggested in Dr. Savio's memorandum to ACNW dated July 20, 1988. The Committee agreed to the following in connection with the SRM items:

COMM-1. The Committee agreed that the response indicated was acceptable for reaching "closure" on issues discussed with NMSS or to indicate to the Commission where there were differences.

COMM-2. The response shown should be modified to indicate that the Committee completed its review of the proposed Commission Policy Statement on "BRC" during its fourth meeting.

COMM-3. The response suggested should be modified to indicate that suggestions for a legislative change to make ACNW statutory has been forwarded to OGC.

COMM-4. With regard to the assessment of the adequacy of NMSS' resources, the Committee noted that it is planning to discuss program plans, etc. with the Directors of both the divisions of HLWM and LLWM.

COMM-5. The Committee agreed that it is planning to meet with the Commission at the suggested frequency, i.e., quarterly.

COMM-6. The Committee agreed that its highest priority was in connection with NRC's activities related to the High-Level Waste Repository.

COMM-7. It was noted that the Committee intends to interact with the Commissioners' Technical Assistants and that Dr. Moeller has scheduled a meeting with them for September 15, 1988. In addition, the Committee plans to provide to the Commission, on a regular basis, information referred to in connection with COMM-1 and plans to meet periodically with the Commissioners in accordance with their request.

COMM-8. The Committee agreed that both sides of any differences of opinion among Committee members would be aired.

5. Distribution of Mail to ACNW (Open)

The Committee members decided not to change the distribution of mail to them. They did ask, however, that their mail be grouped better and that some identification be made of the more urgent items, rather than simply "lumping" everything together. The ACRS/ACNW Staff agreed to do this.

6. ACNW Bylaws (Open)

The Committee agreed to review the proposed ACNW Bylaws and provide comments to Mr. Libarkin before the November meeting. Discussion of the revision will be scheduled for the next meeting.

7. Division of Responsibilities (Open)

The Committee discussed the division of responsibilities between ACRS and ACNW. Specific topics discussed were spent fuel storage pools, on-site low level waste, transportation casks, and the Independent Spent Fuel Storage Installation. The Committee agreed to schedule further discussions on the division of responsibilities at the next meeting.

C. Future Agenda

The Committee agreed to the tentative future agenda as shown in Appendix II.

The 4th ACNW meeting concluded at 4:05 p.m. on September 14, 1988.