ACNW-0041

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34TH ACNW MEETING
AUGUST 27-29, 1991

NUCLEAR REGULATORY COMMISSION

Documents Containing Reporting or Recordkeeping Requirements; Office of Management and Budget (OMB) Review

AGENCY: Nuclear Regulatory Commission (NRC).

ACTION: Notice of the Office of Management and Budget review of information collection.

SUMMARY: The Nuclear Regulatory Commission has recently submitted to the Office of Management and Budget (OMB) for review the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. chapter 35).

1. Type of submission, new, revision, or extension: Revision.

2. The title of the information collection: Requirements for Possession of Industrial Devices Containing Byproduct Material—10 CFR 31.5, 31.6, 32.51a, and 32.52.

3. The form number if applicable: Not Applicable.

4. How often is the collection required: Collection will continue to be required on a quarterly basis from specific licensees who transfer devices to general licensees. In addition, general licensees will be required to report initially, and then on a periodic basis.

5. Who will be required or asked to report: Specific licensees (distributors) authorized to distribute devices and general licensees.

6. An estimate of the number of additional responses: Specific Licensees—32,158 annually and General Licensees—29,705 annually.

7. An estimate of the number of additional hours needed to complete the requirement or request: Specific Licensees—608 hours (one time cost for system changes) and 1,636 hours annually, and General Licensees—10,894 hours annually.

8. The average burden per response is: Specific Licensees—3 minutes and General Licensees—20 minutes.

9. An indication of whether section 3504(h), Public Law 96–511 applies: Applicable.

10. Abstract: The proposed rule would require general licensees to respond to NRC with information about radioactive material used under the general license provisions of § 31.5 of 10 CFR part 31. In addition, corresponding changes would be made in the transfer reporting requirements imposed on persons authorized to distribute byproduct material under 10 CFR 31.5 and 32.52. These changes would require distributors of devices to use a uniform format or to provide all of the information required by the format on a clear and legible record when submitting their quarterly reports.

Copies of the submittal may be inspected or obtained for a fee from the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC.

Comments and questions can be directed by mail to the OMB reviewer: Ronald Minsk, Office of Information and Regulatory Affairs, [3150–0016] and [3150–0001], NEOB–3019, Office of Management and Budget, Washington, DC 20503.

Comments can also be submitted by telephone at (202) 395–3084.

The NRC Clearance Officer is Brenda Jo. Shelton, (301) 492–8132. Dated at Bethesda, Maryland, this 9th day of August 1991.

For the Nuclear Regulatory Commission.

Gerald F. Cranford,

Designated Senior Official for Information Resources Management.

[FR Doc. 91–19750 Filed 8–16–91; 8:45 am]

BILLING CODE 7590–01–M

Advisory Committee of Nuclear Waste; Revised Notice

The 34th Advisory Committee on Nuclear Waste (ACNW) meeting scheduled to be held on August 27–29, 1991 agenda has been revised to include a closed session. This meeting was previously published in the Federal Register on Tuesday, August 6, 1991 (56 FR 37374).

The agenda for the subject meeting shall be as follows:

Tuesday, August 27, 1991—7 p.m. until 9 p.m.

(1) Begin deliberations on what technical and scientific questions are necessary to make a determination that adequate technology is available to safety store high-level radioactive wastes (spent fuel) resulting from nuclear power plant operations on an interim basis for the next 50 years.

Wednesday, August 28, 1991—8:30 a.m. until 6:30 p.m.

(1) DOE to present a summary and discussion of the DOE responses to comments by EPA, NRC and State of Nevada on Yucca Mountain Site Characterization Plan.

(2) Presentation by the NMSS High Level Waste staff on the results of the review of DOE's responses to the NRC staff's Site Characterization Analysis.

(3) Presentation on the proactive program for High Level Waste. This involves planned rulemakings, guidelines, and technical positions in support of the High Level Waste program.

(4) Prepare the next Program Plan for ACNW activities over the next four months.

Thursday, August 29, 1991—8:30 a.m. until 5 p.m.

(1) State of Nevada to present a summary and discussion of the State's review and comments on DOE's Site Characterization Plan and related Study Plans.

(2) Discuss the proposed OGE rule on ethical conduct of employees of the Executive Branch and the impact it will have on the personal and professional (non-government) activities of Committee members as well as its impact on the functioning of the Committee. Portions of this session will be closed as necessary to discuss information the release of which would represent a clearly unwarranted invasion of personal privacy.

(2) Review the NRC staff's current position on the Working Draft #3 of the U.S. Environmental Protection Agency's High-Level Waste Disposal Standards, and a revised NRC staff paper on their approach for dealing with uncertainties in implementing the EPA high-level waste standards.

(4) Review the staff's response to the ACNW's May 30, 1991, report on alternative approach to the probabilistic section of the containment requirements in 40 CFR part 191 ("The Three-Bucket Approach").

(5) Discuss Committee activities, future meeting agenda, administrative, and organizational matters, as appropriate. Also, discuss matters and specific issues that were not completed during previous meetings as time and availability of information permit.

I have determined in accordance with subsection 10(d) (Public Law 92–463 that it is necessary to close the portion of this meeting noted above to discuss information the release of which would represent a clearly unwarranted invasion of personal privacy per 5 U.S.C. 552b(c)(6).

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 written 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 practical 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 F. Fraley (telephone 301/492-4516), 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 or call the recording (301/492-4600) for the current schedule if such rescheduling would result in major inconvenience.

Dated: August 13, 1991.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 91-19753 Filed 8-16-91; 8:45 am]

BILLING CODE 7590-01-M

[Docket Nos. 50-424 and 50-425]

Georgia Power Co., et al.; Notice of Consideration of Issuance of Amendments to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. NPF-68 and NPF-81 issued to Georgia Power Company, et al. (the licensee) for operation of the Vogtle Electric Generating Plant, Units 1 and 2, located in Burke County, Georgia.

The proposed amendments would change Technical Specifications (TSs) associated with reactor coolant system (RCS) flow measurement and its associated uncertainty. The changes would decrease the flow measurement uncertainty to be applied to the RCS flow surveillance, lower the RCS flow limit, increase the power level at which the flow is determined by precision heat balance, and supplement the corresponding TS Bases. Specifically:

1. TS 4.2.5.3 presently requires that RCS flow be determined by precision heat balance prior to operation above 75% rated thermal power (RTP). The proposed change would replace the phrase "prior to operation above 75% RTP" with the phrase "within 7 days after exceeding 90% RTP (Unit 1) or prior to operation above 75% RTP (Unit 2)."

2. TS 3.2.5 presently requires that RCS flow be maintained within a limit of no less than 396,198 gpm, and contains a footnote stating that this flow limit includes a 3.5% flow measurement uncertainty. The flow uncertainty in the footnote would be changed from "3.5%" to "2.7% (Unit 1) or 3.5% (Unit 2)." The associated flow limit would be changed from "396,198 gpm" to "393,000 gpm (Unit 1) or 396,198 gpm (Unit 2)."

3. The above described changes would become effective with the initial use of VANTAGE-5 fuel on Vogtle Unit 1 Cycle 4. With the initial use of VANTAGE-5 fuel on Unit 2 Cycle 3, the phrases "(Unit 1) or prior to operation above 75% RTP (Unit 2)" and "(Unit 1) or 396,198 (Unit 2)" would be deleted.

4. TS Bases 3/4.2.5 would be supplemented to describe the bases for the uncertainty used for the measurement of RCS flow. This supplement would state: "The measurement uncertainty for the RCS total flow is based upon performing a precision heat balance flow measurement above 90% RTP and using the results to correlate the flow indication channels with the measured flow. If a precision heat balance flow measurement is performed below 90% RTP, the effect on the measurement uncertainty shall be taken into account. Potential fouling of the feedwater venturis which might not be detected could bias the results from the precision heat balance in a non-conservative manner. Therefore, a penalty of 0.1% for undetected feedwater venturi fouling is included in the measurement uncertainly. Any fouling which might bias the RCS flow rate measurement by more than 0.1% may be detected by monitoring and trending various plant performance parameters. If detected, action shall be taken before performing subsequent precision heat balance flow measurements, i.e., either the effect of the fouling shall be quantified and accounted for in the RCS flow rate measurement, or the affected venturis shall be cleaned to eliminate the fouling. The indicated RCS flow value of 393,000 gpm corresponds to an analytical value of 382,800 gpm with allowance for measurement and indication uncertainties."

In a previous Federal Register notice dated May 1, 1991 (56 FR 20037), the NRC discussed the licensee's plans to convert to VANTAGE-5 fuel, starting with the Unit 1 Cycle 4 reload in September 1991. That notice also discussed associated changes in DNB parameters, including RCS flow, and the treatment of flow uncertainties using newer methodologies such as the Westinghouse Revised Thermal Design Procedure (RTDP). Similarly, in a previous notice dated May 28, 1991 (56 FR 24101), and repeated June 26, 1991 (56 FR 29284), the NRC discussed planned modifications to eliminate the bypass manifold used to measure RCS delta temperature and substitute fast-response resistance temperature detectors (RTDs) in thermowells directly in the hot and cold legs of the RCS loops. Changes for the conversion to VANTAGE-5 fuel and elimination of the bypass manifold are based upon flow that is determined using the Westinghouse RTDP. Accordingly, the latest proposed amendments supplement these prior notices with respect to the determination of RCS flow and its associated uncertainties.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the license has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. The revised RCS flow uncertainty basis does not involve a significant increase in the probability or consequences of an accident previously evaluated. The reactor coolant flow will continue to be monitored once per 12 hours in accordance with TS 4.2.5.1. Although the revised uncertainty results in the requirement for higher flow value to be measured, no new performance requirements are being imposed on the RCS in order to satisfy this criteria. The revised RCS flow requirement of 393,000 gpm remains smaller than the 396,198 gpm value required with a 3.5% uncertainty, for which previous RCS flow surveillances were routinely satisfied. This indicated that the RCS configuration is capable of providing the required flow. In addition, no new requirements must be considered by the safety analyses which model RCS flow since the design flow value of 382,800 gpm used as a basis for the VANTAGE-5 and RTD bypass loop elimination programs remains unchanged. Reactor coolant system flow is an assumed initial condition in the safety analyses and does not act as an initiator for any transient. Therefore, the probability of occurrence of an accident is not affected.

The consequences of an accident previously evaluated are not significantly increased due to the revised RCS flow uncertainty basis. Given that the accident analyses are unaffected, no additional fuel failures or mass releases will result. Therefore, no more severe conditions than those already assumed in the radiological dose consequence analysis will result, and

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

REV.1/8/13/91

SCHEDULE AND OUTLINE FOR DISCUSSION
34TH ACNW MEETING
AUGUST 27-29, 1991

Tuesday, August 27, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

1) 7:00 - 7:15 p.m. — Opening Remarks by ACNW Chairman
- 1.1) Opening Remarks (DWM/RKM)
- 1.2) Items of Current Interest (DWM/RKM)

2) 7:15 - 9:~~00~~ 07 p.m. — Interim Spent Fuel Storage (Open) (DWM/HJL)
- 2.1) Begin deliberations on what technical and scientific questions need to be answered to make a determination that adequate technology is available to safely store high-level radioactive wastes (spent fuel) resulting from nuclear power plant operations on an interim basis for the next 50 years. (DWM/HJL)
- 2.2) Future plans concerning this topic.

9:~~00~~ 07 p.m. — ***** RECESS *****

Wednesday, August 28, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

3) 8:30 - ~~11:45~~ 12:00 a.m. — Presentation on the proactive program for high-level waste. (Open) (PWP/CEA)
- 3.1) This program involves planned rulemakings, guidelines, and technical positions in support of the high-level waste program. (J. Linehan, NMSS)
- 3.2) Committee discussion and questions

(10:~~00~~ 10 - 10:~~15~~ 27 BREAK

~~11:45~~ 12:00 - ~~12:45~~ 1:05 ***** LUNCH *****

4) ~~12:45~~ 1:05 - ~~2:30~~ 1:50 p.m. — Presentation by the NMSS Division of High-Level Waste Management staff on the results of the review of DOE's responses to the NRC staff's Site Characterization Analysis. (WJH/CEA)
- 4.1) NRC Staff presentation
- 4.2) Committee discussion and questions

2:~~30~~ 20 - 2:~~45~~ 40 p.m. ***** BREAK *****

[= Transcribed portion of meeting

5) ~~2:45~~ 1:50 - ~~5:30~~ 4:25 p.m. DOE presentation on response to comments on the Site Characterization Plan (WJH/CEA)
5.1) Summary and discussion of responses to comments made by EPA
5.2) Summary and discussion of responses to comments made by State of Nevada
5.3) Summary and discussion of responses to comments made by NRC
5.4) General discussion and questions

~~5:30~~ 4:40 - ~~6:30~~ 5:50 p.m. Prepare the next four month Program Plan for ACNW activities (Open) (DWM/RKM)

~~6:30~~ 5:50 p.m. ***** RECESS *****

Thursday, August 29, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

6) 8:30 - ~~10:00~~ 9:35 a.m. State of Nevada presentation, summary and discussion of the State's review and comment on: (Open) (WJH/CEA)
6.1) DOE's Site Characterization Plan
6.2) Related DOE study plans
6.3) General discussion and questions

~~10:00~~ 9:35 - ~~10:15~~ 10:00 a.m. ***** BREAK *****

7) 10:~~15~~00 - ~~12:00~~ 10:50 a.m. ~~NOON~~ Committee review of NRC staff's response to the Committee's May 30, 1991 report on alternative approach to the probabilistic section of the containment requirements in 40 CFR Part 191 (three-bucket approach) (Open) (MJS/HJL)

~~12:00~~ 11:35 - 1:00 p.m. ***** LUNCH *****

8) ~~1:00~~ 10:50 - ~~2:30~~ 1:50 p.m. Review the NRC staff's current position on Working Draft #3 of the U.S. EPA's high-level waste disposal standards, and a revised NRC staff paper on their approach for dealing with uncertainties in implementing the EPA high-level waste standards (Open) (MJS/HJL)

~~2:30~~ 1:50 - ~~2:45~~ 2:00 p.m. ***** BREAK *****

9) 2:~~45~~00 - 3:~~45~~15 p.m. Meeting with Office of General Counsel on proposed Office of Governmental Ethics rule on Ethical Conduct of Government Employees (T. Rothschild) (Open/Closed)

10) 3:45 - ~~5:00~~ 4:45 p.m. Anticipated ACNW activities (Open) (DWM/RKM)

10.1) The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, and organizational matters as appropriate

- 10.1.1) Set September agenda
- 10.1.2) Anticipated activities through December
- 10.1.3) EPRI workshop on Working Draft #3 of EPA's HLW standards
- 10.1.4) ACNW staff "Fellows" projects

~~5:00~~ 4:45 p.m. ***** ADJOURN *****

CERTIFIED

Issued: September 27, 1991

MINUTES OF THE 34TH MEETING OF THE
ADVISORY COMMITTEE ON NUCLEAR WASTE
AUGUST 27-29, 1991
BETHESDA, MARYLAND

The 34th meeting of the Advisory Committee on Nuclear Waste was held Tuesday, Wednesday, and Thursday, August 27-29, 1991, at 7920 Norfolk Avenue, Bethesda, Maryland.

Dr. Dade W. Moeller, Committee Chairman, convened the meeting at 7:00 p.m. and briefly reviewed the schedule for the meeting. He stated that the meeting was being conducted in conformance with the Federal Advisory Committee Act. He announced that a transcript of some open 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. [Copies of the transcript taken at this meeting may be purchased from Ann Riley & Associates, Ltd., 1612 K Street, N.W., Washington, D. C. 20006.]

ACNW members, Drs. William J. Hinze, Dade W. Moeller, Martin J. Steindler and Paul W. Pomeroy were present. [For a list of attendees, see Appendix I.]

I. CHAIRMAN'S REPORT (Open)

[Note: Mr. Richard K. Major was the Designated Federal Official for this part of the meeting.]

Dr. Moeller identified a number of items that he believed to be of interest to the Committee, including:

- Mr. Leroy Person, Office of Nuclear Material Safety and Safeguards (NMSS), is on a rotational assignment with the ACNW staff for three to six months. During his stay, Mr. Person will learn about and participate in all Committee support activities.

- Commissioners of the Midwest Interstate Low-Level Radioactive Waste (LLW) Compact Commission voted 5 to 2 to suspend Michigan's membership in the Compact for its failure to meet obligations as the Compact's host state. The Commissioners also voted 5 to 1 to appoint Ohio to take Michigan's place as host for the LLW facility.

- The Congressional Office of Technology Assessment concluded in a study, dated August 1, 1991, that if there

is to be a revival of the nuclear energy option, progress on radioactive waste disposal must be sufficient to demonstrate convincingly that technology and sites will be available for safe, permanent disposal.

- If Congress does not allow the State of California to ban radioactive waste from states that are not signatories to the region's disposal compact, Lt. Governor Les McCarthy and State Controller Gray Davis say that they will block the title transfer of a proposed disposal facility site near Needles, California.

- Mr. Harold Denton, Director of the Office of Governmental and Public Affairs (GPA), has been tapped by NRC Chairman Selin to be a special assistant to the Chairman on international affairs.

- As a follow-up to a recent visit to the Center for Nuclear Waste Regulatory Analyses (CNWRA), the attention of the Committee members was directed to a staff requirements memorandum that instructs the NRC staff to "document specific contributions of the CNWRA; to continue to develop a performance assessment (PA) capability; and to continue to interact with the U.S. Environmental Protection Agency (EPA) on the High-Level Waste (HLW) standards."

- In conjunction with the NRC, the CNWRA sponsored a workshop on the "Role of Natural Analogs in Geologic Disposal of High-Level Nuclear Waste," on July 23-25, 1991.

- On the basis of a review of the relevant Pennsylvania Code (Chapter 236), Mr. Howard Larson, ACNW staff, has prepared a list of "disqualifying criteria" for an LLW disposal facility in that Commonwealth. Dr. Moeller suggested that the Committee may want to learn more about the criteria.

- SECY-91-246, dated August 7, 1991, on staff expertise and capabilities to utilize analytical codes, relates to the ACNW assignment to review the NRC staff's capabilities in performance assessment.

II. INTERIM SPENT FUEL STORAGE (Open)

[Note: Mr. Howard J. Larson was the Designated Federal Official for this part of the meeting].

This session was held to begin deliberation on what technical and scientific questions need to be resolved in order to make a determination that adequate technology is available to store high-level waste safely on an interim basis for the next 50 years. The Committee will consider the development of a response to the question Chairman Selin addressed to the Committee during the July 25, 1991, public meeting with the Commissioners (Staff requirements memorandum, dated August 21, 1991, summarizes this inquiry).

Mr. Frederick "Fritz" Sturz, NMSS, the section leader responsible for the licensing of spent fuel storage outside the reactor pools, presented an overview of interim spent fuel storage. Such facilities are licensed under 10 CFR Part 72. His presentation covered four areas, viz.: technical basis for confidence in storage, an overview of related waste confidence decisions, the surveillance practices for stored fuel and an update on NRC dry spent fuel storage licensing activities.

Mr. Sturz noted that, in the initial 1984 waste confidence decision, the Commission evaluated long-term integrity in pool water, structural and component safety, the safety of the evolving dry storage systems and the risks of accidents and sabotage. Some underlying considerations associated with each of these areas were described, such as hot cell metallurgical examinations of spent fuel after being subjected to varying environments, overseas reactor experience and the 80-plus spent fuel pool rerack evaluations conducted to date. Dr. Moeller noted that, even in the worst case, the impact on public health and safety from a fuel storage accident would be small. Mr. Sturz concurred. He noted that aged spent fuel could not produce sufficient force for driving radioactive releases off site.

Mr. Sturz discussed on-site storage practices in Great Britain and dry storage cask instrumentation. He noted that the casks were pressurized with an inert gas to preclude oxidation and that in the four or five years that Surry Nuclear Power Plant casks have been in place, no loss of pressure alarms have been actuated.

Dr. Moeller requested to be informed whether the Surry Nuclear Power Plant technical specifications required the utility to notify the NRC should the pressure in the casks drop. Mr. Sturz was unsure and offered to provide the answer at a later date.

Dr. Hinze asked about cask degradation in 50 years or so and was told that the license is issued for only 20 years, at which time

there is an option to renew. At the time of license renewal, weld and cask/lid integrity will be considered. Sandia National Laboratory has also looked at the response of current generation casks to explosive charges and concluded, even under such extreme measures, it would be difficult to transport enough material off-site such that EPA protective action guidelines (PAG) would be exceeded.

In 1990, the waste confidence decision was revisited and the safety and minimal environmental impacts of spent fuel storage were upheld again.

Mr. Sturz noted that at General Electric's Morris, Illinois facility, fuel in the underwater storage pool is monitored by water level, water chemistry, water temperature, and radiation sensors as well as other environmental monitoring devices.

Experience with, and monitoring of, various dry storage canister systems were discussed. It was noted that fuel with gross cladding defects cannot be stored dry. (Only pinhole leaks are acceptable.) Furthermore, most fuel problems occur in the higher pressure and temperature conditions existing in the nuclear reactors. Each dry cask design has limits on permissible fuel assembly burnup. Maximum clad temperatures are calculated based on passive cooling only.

Mr. Sturz described various dry spent fuel storage systems. There are many cask vendors and designs utilized in the storage pad systems. The NUHOMS modular concrete vault system in use (or planned) at H.B. Robinson and Oconee Nuclear Power Plants was also discussed. It was noted that the Fort St. Vrain (FSV) Nuclear Generating Station decommissioning could result in a stand-alone Independent Spent Fuel Storage Installation (ISFSI). The modular dry storage vault system proposed for FSV was discussed.

Some of the most recent designs assume burnup credit, that is, that subcriticality in the water is assured by the presence of a specified level of boron, which must be monitored.

Current staff topical report review efforts for waste storage facilities were discussed. It was noted that, although there is not a standard review plan for topical reports (Lawrence Livermore National Laboratory has a plan under development), there are regulatory guides available to provide application guidance.

The NRC is in the process of initiating a rulemaking to certify certain casks for a generic site. The applicant need only perform an evaluation to assure that cask design parameters bound the site. It is expected that no nuclear power plant sites will be disqualified.

Mr. Sturz discussed the compatibility considerations for dry storage and transport systems. Although a significant amount of spent fuel will be in dry storage, most spent fuel will be stored in the reactor pools and shipped from there to a monitored retrievable storage (MRS) facility or repository. At this time, it is not possible to identify the final spent fuel canister design. He also noted that while it may be assumed that such dual purpose casks minimize fuel handling, in actuality they may not, the reason being that the amount of required handling depends on the particular storage system and site characteristics (such as availability of rail transport).

Dr. Hinze questioned whether the various cask types had different safety factors and was told that, while costs may differ (concrete casks tending to be cheaper), safety analyses reveal few differences. No design "stands out" above the others.

It was noted that the Sacramento Municipal Utility District (SMUD) decided that they would opt for dry casks rather than spend $5 to $10 million per year to operate the spent fuel storage pool. SMUD is attempting to develop a cooperative demonstration project with the Electric Power Research Institute (EPRI) and the U.S. Department of Energy (DOE) for a cask-to-cask (dry) transfer system. This proposed project is in the DOE FY 1992 budget and is awaiting approval.

Dr. Hinze observed that economics seem to be driving the utilities toward dry storage. He asked about the degradation monitoring and inspections of the dry storage systems. In response, Mr. Sturz stated that, at the time of the recertification and relicensing, systems degradation will be thoroughly reviewed.

Dr. Steindler asked whether utilities could band together and, for economy of scale, in effect, establish an MRS. Mr. Sturz observed that it would be possible, however, he was not aware that the utilities are considering this strategy.

In response to Dr. Moeller's question, Mr. Sturz pointed out that the stored spent fuel short term temperature excursions are kept well below cladding failure temperatures. The recent review by the ACRS of the draft standard review plan was noted.

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

III. PROACTIVE PROGRAM OF THE DIVISION OF HIGH-LEVEL WASTE MANAGEMENT (Open)

[Note: Ms. Charlotte Abrams was the Designated Federal Official for this part of the meeting.]

Prior to the NRC staff's presentation on the proactive program, Dr. Pomeroy, ACNW Committee member, commented on the importance of the proactive program and its significance in assuring an effective review process and license application. Dr. Pomeroy also noted the importance of the proactive program as it related to the assignment of priorities in the Division of High-Level Waste Management (HLWM) and the CNWRA programs.

The presentation on the proactive program was given by Mr. Joseph Youngblood and Mr. John Linehan, Director and Deputy Director of the HLWM. The program was described and changes made since the program originally started and the status of the current program were discussed. Mr. Youngblood stated that the proactive program has allowed the HLWM staff to continue its work when the active program (submittals from DOE on the license application) was slow. Mr. Youngblood indicated that the presentation will focus on how work is identified and prioritized by the HLWM staff.

Mr. Youngblood briefed the Committee on two major proactive program areas of activity. He stated that the Nuclear Waste Policy Act (NWPA) program regulatory requirements and technical guidance consisted of five sub-areas: 1) rules and amendments support; 2) standard format and content regulatory guide support; 3) license support for topical guidelines; 4) regulatory guide support; and 5) Nuclear Waste Policy Act and Nuclear Waste Policy Amendment Act Amendment (NWPAA) mandated actions. Dr. Steindler asked what resources were being devoted to NWPA requirements and technical guidance. Mr. Joseph Holonich, NMSS, stated that about 7 full time employees (FTE) are assigned to these areas.

Mr. Youngblood described the activities that will be taking place in the five sub-areas. The staff will be engaged in several activities related to potential rulemakings identified in SECY-91-225, "Second Update of the Regulatory Strategy and Schedules for the High-Level Waste Repository Program." In the standard format and content (SF&C) area, there will be the preparation of a regulatory guide. In the licensing support and regulatory guides area, the staff is preparing a regulatory guide to identify areas to be included in the scope of the licensing support system (LSS). In the staff positions/technical positions area, four staff technical positions are being developed. Staff positions will be identified when there is need to document the staff's interpretation of 10 CFR Part 60.

In the area of the NWPA and NWPAA mandated actions, the staff is reviewing the project decision schedule that was issued by DOE in August 1991. Mr. Youngblood indicated that a memorandum of understanding (MOU) had recently been signed regarding interactions

between NRC and the Nuclear Waste Negotiator. Mr. Youngblood noted that time spent with the ACNW is not reflected in the HLWM budget. In response to a question from Dr. Moeller, Mr. Youngblood stated that the MOU reflects the cooperation NRC will provide to the Negotiator.

Dr. Steindler asked what was indicated by the regulatory guide on "topical guidelines" and what would be accomplished in the guide? Mr. Youngblood stated that it was a regulatory guide that describes what the content of the licensing support system should be. Dr. Steindler asked about the progress of the LSS and said that he read that DOE was setting this work aside. Mr. Youngblood responded that NRC was continuing to work with DOE on this topic.

Dr. Pomeroy asked why some staff technical positions (TPs) were mentioned in earlier versions of SECY documents but not in later ones. Mr. Linehan pointed out that a lack of staff experience at the early stage required the development of a sound technical basis before a particular topic could be addressed. This also required development of an explanation how it pertained to other aspects of the regulation.

Many topics were selected for technical positions prior to the Systematic Regulatory Analysis (SRA). The SRA will aid the staff in identifying what technical positions are appropriate.

Dr. Steindler asked what is the legal impact of a staff position? Mr. Youngblood said that it was not a requirement, but was only for purposes of interpretation.

Mr. Youngblood discussed the technical assessment capability for license reviews and its three sub-areas: 1) review plan preparation; 2) analysis method preparation; and 3) iterative performance assessment (IPA). In the review plan preparation area, the staff is developing the License Application Review Plan (LARP) and the Exploratory Studies Facility Alternatives (ESFA) review strategy. They are also developing a review plan for submittals related to the vitrification process. The analysis method preparation focuses on the development of methods for determining compliance with 10 CFR Part 60 Subsystem performance requirements. The iterative performance assessment allows the staff to develop its capabilities to review the license application, the EPA Standard, and subsystem performance objectives.

Dr. Moeller asked if HLWM would review the Savannah River Solidification Process? Mr. Youngblood said that he expects HLWM to be asked although there was no legal basis for review at this time. The staff will be concerned with the quality assurance program and what is in the glass product if it is to be placed in the repository. Dr. Steindler asked whether the waste acceptance process would address this question? Mr. Youngblood stated that it may not until

after DOE has already started making glass. The staff has told DOE of their concern; however, the staff also recognizes the problem associated with large quantities of liquid waste at a site. Glass is considered by the staff to be an acceptable medium to put in the repository, although the product quality is not currently known by NRC. Mr. Youngblood indicated that the DOE is not, at present, placing a performance allocation on the glass or the canister. The DOE will not depend on the canister overpack, but will take credit for the overpack with regard to the overall system performance.

Mr. Youngblood stated that the SRA system development and operation at the CNWRA consisted of five activities that include engineering barriers; waste system engineering and integration; geologic setting; repository design, construction, and operation; and performance assessment. The SRA is a process developed by the staff and the CNWRA to apply the principles of systems engineering to the needs of the HLW program.

Dr. Moeller inquired about work in the area of rules and amendment support for natural systems within the geologic setting. Mr. Linehan indicated that, for Fiscal years 1991 and 1992, no activities have been identified at this time. However, the staff is looking at groundwater travel time as part of the SRA. This analysis could potentially indicate any necessity for a rule change related to the natural system.

Mr. Linehan addressed the Committee on the development and implementation of the proactive program and provided a paper to the Committee that contains details of identification, prioritization and integration of work. These areas of concern were identified during the recent meeting held by the Committee at the CNWRA.

Mr. Linehan noted that the staff had laid out their overall strategy in the three SECY documents (SECY-88-285, SECY-90-207, and SECY-91-225).

Mr. Linehan said that the staff began the SRA and IPA in 1988. However, time was needed to integrate these activities into the overall program. The activities discussed by Mr. Youngblood (NWPA regulatory requirements, capabilities for licensing reviews, and systematic regulatory analysis and CNWRA operation) were identified and conducted by the NRC and CNWRA staffs without the aid of SRA or IPA.

Mr. Linehan stated that proactive work identification had been performed in three ways: 1) independent staff judgment; 2) results of research (through NRC research program efforts, DOE program efforts and through international activities); and 3) through interaction with other parties; e.g., the State of Nevada, EPA and EEI. Another method for identifying work is through technical information exchanges with the DOE staff and others. Also work is

identified through specific requests such as the petition from DOE on design basis accident dose limits.
Mr. Linehan stated that the priorities on the work are established according to pragmatic needs based on past licensing experience, significance to repository performance, and the immediate need to resolve issues or uncertainties. He mentioned that future states and residual uncertainties must be dealt with in implementing the EPA standard. The staff developed the IPA to help focus on how one could deal with such uncertainties. Dr. Steindler asked if there is an order of importance to any of the work. Mr. Linehan responded that each was equally important at various stages. For example, during the site characterization period, work related to those investigations would be considered more important (because of the stage of the program).

Dr. Steindler asked how often the order of priority was reviewed for topics such as future states and residual uncertainties. Mr. Linehan said that a formal review was conducted on an annual basis and an informal management review was conducted monthly.

Mr. Linehan pointed out that timing is a consideration in that anything related to site characterization, such as a technical position or staff position should be made available to DOE before the start of a related activity. Finally, Mr. Linehan pointed out that staff resources are a very important constraint.

Dr. Steindler inquired whether the staff had accomplished its goal of providing information to DOE before they started site characterization activities? Mr. Linehan reminded the Committee of the Technical Positions on the Exploratory Shaft Facility, Thermal Loads, and Seismic Investigations.

Dr. Hinze asked if the type of repository excavation (by drilling, blasting etc.) was considered by the staff in any guidance to the DOE? Mr. Ronald Ballard, NMSS, responded that the staff believes it will be possible to map faults in a mechanically excavated repository. No regulatory position is being taken on this. Dr. Hinze stated his concern that other countries have determined that they cannot map properly in certain types of rock materials when mechanical excavation methods are used. Mr. Ballard indicated that DOE has a program to look at blasting and drilling and that a number of DOE design alternatives propose to use the drill and blast technique for at least portions of the repository. Dr. Hinze asked if staff resources were assigned to this problem? Mr. Linehan stated that the staff identified the issues regarding drilling and blasting, but that DOE would present their choice of a method and, until that time it is an open issue. The staff believes that people with field experience would be better to work on this issue. Mr. Linehan said that the staff is proactively monitoring DOE's program.

Dr. Pomeroy asked the staff to comment on the schedule for the LARP. Mr. Holonich stated that the review plan is scheduled for issuance in FY 1998. Mr. Linehan said that the staff will be reviewing the various regulatory topics in Part 60 to establish which are the most important. This is part of an effort to develop review strategies and to determine areas where the staff may need to develop its own independent methodology for reviewing the license application. Between now and throughout the 1990's the staff will be dealing with pieces of the review plan in this fashion.

Dr. Pomeroy inquired whether the review plan would contain a "road map" that the Committee had requested regarding uncertainties? Mr. Linehan stated that the road map would be present in a document, entitled License Application Review Strategy, which will be used to develop the review plan.

Dr. Pomeroy asked if development of the review plan by 1998 was consistent with DOE's need for guidance in developing their license application. Mr. Linehan noted that the staff will issue guidance separately and this will become part of the review plan. These guidance documents will make the staff's position clearer, including what procedures the staff will follow in review and what acceptance criteria are being established.

Dr. Steindler asked if technical positions or similar documents would be issued only when there is a difference of view between NRC and DOE as to what should be accomplished? Mr. Linehan answered in the affirmative. He also pointed out that a TP would not always be issued to provide guidance. In some cases, a letter may be sufficient.

Mr. Youngblood stated that the staff would not leave an issue hanging, but may memorialize it in some formal way once it was resolved.

Mr. Linehan stated that, following identification and prioritization, the work was being integrated through the Division's matrix management organization. A project manager has the technical lead for review of study plans, development of staff technical positions, and the development of the standard format and content guide. The work is done by teams that identify any needed support and integration. There is a formal review plan for more significant activities such as the Site Characterization Plan (SCP). This review plan is developed by an interdisciplinary team prior to the start of the review. As an example, a review plan was developed for the SCP that lays out the scope, purpose, how the review will be conducted and provides a matrix showing the needed interfaces and integration among technical disciplines.

Mr. Linehan spoke about how SRA and IPA could be utilized. SRA is a disciplined and documented process adopted for systematically and comprehensively analyzing Part 60 to identify and conduct staff work that is needed to support licensing activities both during pre-licensing and licensing review. The SRA defines a general framework in which technical work is conducted and documented, using the technical judgment of the staff. Initially, not enough effort was placed on how the SRA process could help the staff conduct its work in a comprehensive and thorough manner. The staff responded more positively after a training session explained the SRA process and how it affects their work.

Dr. Moeller noted that, under the SRA review process the staff could accomplish all of its goals only if Part 60 was perfect. He asked Mr. Linehan, what effort was underway to identify errors or problems with Part 60? Mr. Linehan stated that the first step under the SRA is to determine problems with the regulation. Dr. Moeller inquired whether SRA not only identified staff work but also looked critically at Part 60. Mr. Linehan responded that it does look critically at Part 60 and that the way Part 60 has held up is a credit to the parties who helped develop it.

Dr. Pomeroy asked Mr. Linehan for the number of NRC staff who are engaged in work related to the SRA? Mr. Linehan responded that a majority of the HLWM staff are involved in looking at SRA by working on rulemakings, technical positions and developing strategies for various parts of the regulation.

Dr. Steindler offered a comment regarding the relationship between the EPA standards and the subsystem performance criteria for the NRC. He asked whether NRC should devote time to such a philosophical question to which the answer is known? Mr. Youngblood responded that was a question that would arise and the staff might as well address that question now. Mr. Linehan stated that, as questions were first raised regarding interpretation of Part 60, the issue came up as to whether there must be a nexus between Part 60 and the EPA standards. The staff is trying to determine what action may be needed. The staff may be looking at other aspects of Part 60 to determine if there is a benefit to have a nexus between that regulation and the other NRC regulations, such as Part 72 and Part 100. Originally, approximately 40 uncertainties were identified through the SRA process, of which half required no change to the regulations. Mr. Linehan stated that the systematic approach of the SRA has a trade-off which requires thorough documentation so that the same question will not arise at licensing. Additional work is being performed on 18 to 20 uncertainties to determine what, if any, work is needed and should be planned.

Mr. Linehan stated that the IPA was a joint activity between the Office of Nuclear Regulatory Research (RES), HLWM, and CNWRA staff. IPA is a process that utilized predictive models to obtain

quantitative estimates of repository performance. Key features and purposes are to develop and maintain a staff capability to review DOE's performance assessment in its license application and also provide a tool to assess site characterization activities and data. IPA provides a structure for examining couplings between phenomena in different disciplines. It allows the identification of those aspects of a repository system important to site performance through sensitivity analysis and it is being used to evaluate the feasibility of implementing the performance objectives in Part 60 and the requirements of the EPA standards. IPA also supports the development of regulatory guidance and provides insight into needed areas of research. Mr. Linehan stated that the staff would be discussing Phase II of the IPA activity with the Committee later in the year.

Dr. Pomeroy inquired whether the staff was developing a full blown capability to produce an independent performance assessment that would stand alone? Mr. Linehan suggested that the staff was not attempting to develop a full blown capability. Dr. Pomeroy inquired whether it would be complete in some sense and be able to be presented before the Atomic Safety and Licensing Board as a performance assessment for the site. Mr. Linehan stated that it was only what the staff believed it needed to assess Part 60 compliance. Ms. Margaret Federline, NMSS, stated that all steps of a performance assessment will be performed, but not in detail, and emphasis will be placed on having the capability to conduct the review when the time comes. Ms. Federline stated that the staff would expect to have the capability to monitor DOE to the extent needed in any area; however, the staff would try not to forge ahead of DOE.

Mr. Linehan discussed how the staff uses the SRA to assist them in identifying work. The first step in the process is a systematic approach to the identification of areas in Part 60 where the rule is incomplete or unclear. This process helps the staff in its decision on whether the concerns should be addressed in the Standard Format and Content Regulatory Guide or in a technical position.

Dr. Moeller asked Mr. Linehan what provides the main guidance on identifying work? Mr. Linehan stated that the SRA was a help, however, basic reliance is placed on the staff.

The information needs from the SRA and staff assessment will be documented in the final SF&C regulatory guide. A draft regulatory guide was generated based on experience and what the staff thought was required.

Dr. Steindler asked if he should interpret Mr. Linehan's comment as meaning that the resolution of technical uncertainties can be guided by the SRA process? Mr. Linehan stated that the SRA would

develop the process for dealing with the uncertainties. Dr. Steindler stated that one of the questions posed by the Commission paper on uncertainties was what strategy the staff was using. He added that the staff should have mentioned the SRA in the uncertainties paper since the SRA allows the staff to meet specific information needs, with precision and accuracy. Ms. Federline said that the staff considered that good advice.

Mr. Linehan pointed out that the SRA provides a process for identifying and developing review strategies and procedures and acceptance criteria. The SRA also analyzes regulatory requirements. The SRA is also used to identify programmatic technical needs and activities. The IPA identifies where technical work and research is needed and where technical problems in the regulation exist based on the exercise of codes and practical experience.

Dr. Pomeroy asked Mr. Linehan to explain the relationship between IPA and SRA. Mr. Linehan observed that both the SRA and IPA are identifying areas where technical work is being performed. Mr. Linehan said that the two activities were conducted in parallel. IPA is a tool within the overall SRA process and complements some of the more procedural aspects of the SRA. Mr. Youngblood stated that he hoped that the IPA would help reduce unnecessary information gathering.

Mr. Linehan explained that, with respect to the interpretation of the work using SRA and IPA, the SRA process helps provide a systematic process for identifying interface points than would occur only through the use of multidisciplinary teams and a review plan. The SRA provides a common and consistent data base. The computerized SRA database provides a common access for various technical disciplines and for staff at all levels. The IPA process helps in identifying points of technical interface and integration in the evaluation of system and subsystem performance. SRA provides programmatic interface and integration, IPA provides technical interface and integration.

SRA and IPA give assurance that all work is being performed to achieve the objectives of the program in a consistent and coordinated way. A clear, documented basis for the interpretation of the rule is being provided including what was performed and why. This will be available for future reference.

Mr. Linehan also discussed the HLW Management Division's process for identifying, developing and coordinating research between the offices of NMSS and RES. The role of research in the HLW program is commensurate with its role as an independent agency under the NWPAA. Research in HLW is performed for three reasons: 1) to develop licensing tools to judge DOE's application; 2) to assure sufficient independent understanding of basic physical processes in a geologic repository; and 3) to maintain a limited confir-

matory, independent research capability. While it is DOE's job to characterize the site, NRC staff needs to develop its own capability and understanding.

Dr. Pomeroy asked Mr. Linehan how the decision was made to have the CNWRA develop a program on volcanology when an expert could have been hired by CNWRA instead? Mr. Melvin Silberberg, RES, answered that the NRC staff and CNWRA staff were looking at what combinations of outside expertise and staff could best address the volcanism question.

Mr. Linehan stated that the process for identifying user needs and developing research is performed by NMSS in coordination with RES. In 1984, a user needs letter was developed and was supplemented with much more detail in 1989 and 1990. The CNWRA staff recommends research needs and the NRC staff makes the decisions. The CNWRA (under SRA) is to identify research needs and to evaluate how well research programs are providing the Commission staff with the types of information necessary to do its job. Once user needs are established, NMSS in coordination with the Office of Nuclear Regulatory Research is responsible for developing statements of work (SOWs) that address the user needs. Dr. Pomeroy asked if the CNWRA staff could identify a research need and then pass it on for RES to develop a SOW. Mr. Silberberg said that was within the Center's charter and the CNWRA had the responsibility to identify areas where additional work is needed and why.

Mr. Linehan reminded the Committee that most research programs are only one or two years old and that greater feedback will occur once the programs proceed. Mr. Linehan stated that the CNWRA is in a unique role of doing both technical assistance and research work. The Office of Nuclear Regulatory Research, in coordination with HLWM and CNWRA, is developing an overall research program plan that will be published as NUREG-1406. In the future, rather than issue a user needs letter and wait for a response from RES, there will be more of a cooperative effort in establishing research needs.

Mr. Silberberg noted, in response to an earlier question by Dr. Pomeroy, that the staff's methodology for ascertaining its research needs is an evolutionary process. The IPA process is one place where work can be identified. Other areas of research may develop where new concerns have been identified that should be addressed by DOE, or because the staff's ability to pursue or understand the concern is limited by NRC experience or budget constraints.
Dr. Steindler questioned whether a research program could be run properly with three parties, as a minimum, trying to assess what should be performed by a fourth party. He believes that the research direction should be driven by performance assessment results. Mr. Linehan stated that, in the future, it will be, but this driving force is not quite evident because the staff is just developing their performance assessment capability. As the program

office, NMSS has overall program responsibility for what needs to be performed. The Office of Research deals with user needs from NMSS using their independence in a way to do what they think is technically necessary. The CNWRA provides independent advice to NMSS. Each of the three parties have different backgrounds and different interests and the process is not just one of coordination. The NMSS staff must consider all these inputs and decide about the direction of the program. Dr. Steindler wanted to know what was the deciding factor for what was being assigned to the CNWRA. Mr. Linehan explained that the information presented on identification and prioritization for the proactive program also applies to the research program.

Coordination between HLWM, RES and CNWRA includes technical integration of the SRA, feeding back information to RES through the iterative performance assessment, and integration through the CNWRA by their conduct of research and technical assistance.

The feedback of information through the IPA and the SRA has just begun and should provide the predominant driving force, particularly with regard to the research program. Dr. Pomeroy asked Mr. Linehan whether there was informal coordination and if he met with Mr. Silberberg on a monthly basis. Mr. Linehan indicated that, for particular areas of research and technical activities, the HLWM staff work with the RES staff. These individuals coordinate new ideas and proposals as feedback is obtained from the research program. At the management level, periodic meetings are held at least bimonthly to discuss issues and general strategies. The RES staff also participates in meetings on the reactive programs and in various reviews that the staff conducts.

Dr. Moeller asked about the frequency with which the HLWM staff met with the CNWRA staff. Mr. Linehan responded that CNWRA has four professionals in the Washington, D. C. area and their geologist spends time with the staff, at least weekly. The CNWRA staff attends or participates in these meetings through a telephone conference network.

Mr. Youngblood stated that there are approximately 56 or 57 FTEs in the HLWM Division. Dr. Hinze asked about the LSS. Mr. Youngblood stated that the HLWM staff has provided the LSS staff with the topical guidelines for what is needed. Dr. Moeller asked whether representatives of HLWM routinely attend the meetings of the Nuclear Waste Technical Review Board (NWTRB). Mr. Linehan stated that he believed that HLWM has someone present at every NWTRB meeting related to the repository. The HLWM staff usually attends as observers, but the NWTRB has also asked the staff to be present to respond to questions on NRC's positions or on a particular document.

Dr. Pomeroy asked about the Calico Hills Risk/Benefit Analysis (CHRBA) and the Exploratory Studies Facility Alternatives (ESFA) study and site prioritization testing and if the staff would review those documents and issue a formal response. Mr. Linehan stated that the staff would review the documents and that the Committee will receive a copy of the formal response. The staff has asked DOE to define that portion of the ESFA study that relates to the staff's Site Characterization Analysis (SCA) Objection. Once DOE provides a response to these questions, the staff will know what portions of the study need to be reviewed in detail. Dr. Pomeroy asked if the DOE could proceed with site investigations without resolving the objection. Mr. Linehan observed that there is nothing that states that they cannot proceed with Title II design. There is, however a commitment from the DOE to work to resolve the Objection prior to proceeding with work on the exploratory shaft. He noted that a number of concerns supported the objection, such as the design control process and specifics with respect to the layout of the facility for testing. The DOE plans to meet with the NRC staff on September 16, 1991, to present the design control process. Items such as layout and test interference can be addressed in a general sense if DOE has criteria set up as they go through Title I and Title II design.

Mr. Linehan also discussed the observation of quality assurance (QA) audits. He stated that the QA objection to the SCA is virtually resolved. Dr. Pomeroy asked Mr. James Wolf, OGC, if there were any legal objections to DOE starting the excavation prior to resolution of an objection. Mr. Wolf replied that there is no legal requirement and DOE can do what it wants during the site characterization phase but DOE would do so at the risk of not getting a construction permit. NRC can, at any time, state specific objections with respect to DOE's program for characterization of the area concerned. What DOE must do in response will have to be carefully determined by examining 10 CFR Part 60.18. He also stated that it is in DOE's interest to communicate with NRC.

Dr. Steindler asked about the list of staff technical positions in the back of SECY-91-225 and stated that some documents were still in draft and are dated six years prior. Dr. Steindler asked two questions: 1) What is the reason for leaving the TPs in draft form and does it make any difference? And 2) Why not convert the TPs into a serial set to make them easier to obtain on computer? Mr. Linehan responded that the staff has instituted a program to issue the TPs as NUREGs. The TPs that are in draft form have not been completed either because ongoing activities have overtaken what was being addressed or the staff recognized they needed to do more work. The HLWM staff has made a commitment to DOE to provide them with a status report on the TPs and what the future activities might be. Dr. Steindler stated that regulatory guides are periodically and systematically withdrawn when they go out of date or are superseded. Should the same process apply to TPs? Dr.

Pomeroy asked if staff resources will be increased in the performance assessment area as it becomes more important? Mr. Linehan stated that resources in that area have been increased over the past 2 or 3 years; however, there are funding limitations. The staff recognizes the importance of performance assessment and, as the IPA is exercised, more resources may be reassigned to performance assessment. As of now, there has been no firm decision to expand resources in this area.

Mr. Steve Frishman from the State of Nevada asked to address the Committee. He stated that his presentation will focus on how the staff is going to review the CHRBA and ESFA study. He expressed concern about whether DOE may make a formal decision on finalizing the design for the ESF, even though the staff's concerns have not been met. The DOE, according to Mr. Frishman, is not looking at Greater-Than-Class-C waste in their planning of the repository. It is important that the staff look at disposal of this waste in relation to substantially complete containment and repository performance, since geologic disposal is the most likely acceptable approach for Greater-Than-Class-C disposal.

With regard to vitrification, the staff should be concerned with the quality of the Savannah River Plant product. The vitrified product should be treated like spent fuel from the standpoint of waste form and performance. Mr. Frishman also expressed concern that DOE will initiate a phased construction of the repository and the NRC staff may be asked to issue a construction permit for something that is incomplete in design and construction. It appears that the DOE is not going to construct a complete repository before they start loading it with waste. Receipt and possession will be in a stepwise process and the staff will need a process for reviewing what the DOE is doing. The staff needs to figure out what the steps are for this type of licensing and how it affects the current performance assessment.

IV. NRC REVIEW OF RESPONSES TO THE SITE CHARACTERIZATION ANALYSIS BY THE U.S. DEPARTMENT OF ENERGY (Open)

[Note: Ms. Charlotte Abrams was the Designated Federal Official for this part of the meeting.]

Dr. King Stablein, NMSS, briefed the Committee on the results of the NRC staff's review of DOE's responses to the Site Characterization Analysis (SCA). He introduced the topic by noting that the review was conducted by staff from all disciplines (e.g., geology, engineering, hydrology) with an attempt to provide an integrated review that was internally consistent.

Dr. Stablein provided the Committee with a review of the chronology of events leading up to the review. The DOE Site Characterization

Plan (SCP) was received by the NRC in December 1988 and the staff reviewed that document and transmitted their responses to the DOE in the form of the SCA in July 1989. DOE responded to the NRC's SCA in December 1990 and NRC transmitted their review of the responses to the DOE in July 1991.

Dr. Moeller asked if there would be a DOE comment on the review and Dr. Stablein stated that DOE has that option, but the staff anticipates that continued interaction on this topic would be via meetings, technical exchanges, or reviews of other DOE documents, such as study plans, until all of the open items are closed.

The purpose of the staff's review, according to Dr. Stablein, was to facilitate early identification and resolution of potential licensing issues. Concerns or issues identified by the staff in the SCA are identified as open items. The staff did not assume that DOE could close all the open items at this time in their responses to the SCA. DOE indicated in its cover letter to the response package that some open items could not be closed at this time.

Dr. Stablein explained how the staff evaluated the DOE responses. The staff determined whether each open item should be closed based on the DOE response and then explained the rationale for their determination. If the item remained open, the staff attempted to suggest methods for resolution.

Because DOE did not request closure of open items in their responses nor did it attempt to answer all bases of the NRC open items, the NRC staff found it necessary to review carefully all of the material provided by DOE and make a determination on the status of each open item.

Criteria for the staff's determinations were explained by Dr. Stablein. An open item was considered closed if DOE recognized a concern and provided sufficient information at the SCP level of concern. The staff was very careful in their review of the SCP and in their review of the DOE responses to be concerned only with the level of information expected for the SCP. Open items remained open 1) if DOE recognized the concern, but deferred SCP level details of response to a yet to be released DOE document; 2) if DOE believed that the concern was valid, but could not redefine testing plans until some preliminary testing was completed; or 3) if DOE recognized the concern, but presented an approach to resolution not sufficient for the NRC staff. Items under criterion 3 could involve questions from the NRC staff that could be easily resolved via meetings or discussions with the DOE.

Dr. Stablein stated that there were very few instances where the DOE just disagreed with the NRC open item and did not offer any resolution. In most cases if DOE disagreed, they offered some

rationale for the disagreement. If that rationale was not convincing, the item remained open. There were no areas where DOE disagreed with the concern and NRC dropped the concern.

Dr. Stablein noted that fifty-nine of the 198 open items were closed. He also noted that DOE had made considerable progress on many items that remain open. With regard to the two Objections made by the staff in the SCA, Dr. Stablein noted that DOE has made a request to close the Objection related to quality assurance and the NRC was considering that request.

With regard to the Objection on the exploratory shaft facility design and design control, Dr. Stablein explained that DOE has several projects underway. The NRC staff has met with DOE on this Objection and has noted some progress in this area.

Dr. Hinze asked Dr. Stablein if the staff had identified any new Objections in their review and Dr. Stablein explained that no new Objections were identified, but there were several new concerns in the performance assessment area. Those two concerns are incorporated into the wording of the NRC review of why the SCA items are still open. The staff is also considering writing a letter to DOE highlighting those concerns, but those concerns will remain part of the official documentation.

Dr. Stablein explained that the tracking system for open items will include study plan comments and review comments for other DOE documents in addition to SCA open items. Dr. Hinze asked how progress reports fit into the plans and Dr. Stablein stated that as DOE puts more information into the progress reports, the staff will review those reports for progress toward closure of open items. He noted that, in the third progress report, DOE did attempt to answer some comments the staff had made on the first progress report.

Dr. Pomeroy stated that the DOE progress reports would be more useful if they were issued in a timely fashion. Dr. Stephen Brocoum, DOE, responded that DOE is making an effort to issue progress reports before completion of the next reporting period.

Dr. Moeller noted that closure of approximately 30 percent of the SCA comments showed significant progress.

Dr. Pomeroy noted that an SCA comment that was closed had been used as a comment to a Study Plan. Dr. Stablein stated that the staff had received the study plan prior to receiving DOE's responses to the SCA. The DOE response to the SCA comment was sufficient to close the comment and, when the DOE responds to the study plan comments, it is assumed that the staff will close the same comment to that document.

Dr. Hinze asked if the staff automatically closed a comment when it appeared that DOE had addressed it or does the staff wait for a request from the DOE? Dr. Stablein responded that in various letters the staff has requested that when the DOE submits material to NRC, DOE indicate if the material is to address an open item, how the open item is addressed, and where that discussion is found within the material.

Dr. Hinze asked if the ESF Alternatives Study (ESFA) recently received by the staff will address Objection 1 of the SCA. Dr. Stablein stated that the Objection has 31 elements. DOE has a letter pending on how they propose to handle the Objection. When the staff receives that letter they will better know how to review the ESFA.

Dr. Stablein explained that the tracking system for open items is intended as a computerized system where the staff can follow all open items from genesis to closure. Right now open items are mainly those from the SCA, study plans, and quality assurance.

Dr. Seth Coplan, NMSS, stated that the staff is disappointed with DOE's handling of open items in the areas of performance allocation, expert judgment, and alternative conceptual models. All three areas are still considered open due to a lack of information from DOE. The staff noted that they have scheduled a meeting with DOE to discuss some of these topics.

V. U.S. DEPARTMENT OF ENERGY RESPONSES TO COMMENTS ON THE YUCCA MOUNTAIN SITE CHARACTERIZATION PLAN (Open)

[Note: Ms. Charlotte Abrams was the Designated Federal Official for this part of the meeting.]

The DOE presentation was made by Dr. Thomas Bjerstedt and Dr. Stephen Brocoum. Dr. Bjerstedt opened the presentation.

Dr. Bjerstedt explained the process that DOE used to address comments on its program. They have a statutory requirement to receive and consider comments. The responses are a way to demonstrate that comments have been considered. Since the issuance of the Consultation Draft Site Characterization Plan (CDSCP), DOE has received approximately 4,600 comments. These comments have been received in writing or through formal meetings and letters. Comments on the SCP were received from NRC, the State of Nevada, Edison Electric Institute, the U. S. Geological Survey (Reston, VA), EPA, and private individuals. The DOE is required to hold formal hearings which also generated some comments. Those hearings were held in March 1989. All comments, except those from the State of Nevada, have been addressed. Due to the large quantity of comments from the State of Nevada, DOE needed to take additional

time, however, these responses are expected to be completed in the very near future.

Dr. Bjerstedt stated that DOE has an internal group of scientists that integrates comments and then responds. These responses are concurred upon by a review group composed of DOE management. When the comments are received by DOE they are separated by subject matter and distributed to the appropriate persons. The internal group is assembled as needed to discuss comments and the review. Many of the same persons who wrote the SCP are part of this group.

Those technical comments that need some element of policy review are referred to a program review group. This group evaluates responses that are controversial or that commit DOE to some specific action or task. These are called commitments and are similar to NRC's open items. All reviews of comments are documented.

Dr. Bjerstedt explained that the DOE Office of Civilian Radioactive Waste Management (OCRWM) has developed a computer database (Comment and Response Status database or CARS) to manage all of the comments. It is developed on the VAX mainframe in Las Vegas and can be searched by key words or categories. The CARS is also used to track commitments that originated from study plans, peer reviews, the Nuclear Waste Technical Review Board, and technical assessments. Annually, the OCRWM reviews the database to determine what commitments are still pending.

Dr. Bjerstedt provided the Committee with an example of how the system works. He noted that comments that are of a general nature such as why DOE is doing geologic disposal are not placed in the system, but are answered by the DOE.

Dr. Hinze asked how the DOE handles comments that the NRC believes to be still open and Dr. Bjerstedt responded that when DOE receives notification from NRC that they are considering the item still open, the DOE evaluates what the next course of action will be. Because the NRC's review of the DOE responses has just been received, DOE has not determined how it will proceed with closure. The DOE does not have a resolution process for comments other than the NRC's at this time.

Dr. Hinze asked if DOE will request that open items be closed based on some future reports? Dr. Brocoum responded that they will request closure when they have the information to supply to the NRC to close an item.

Dr. Bjerstedt acknowledged that, as a result of comments from external agencies, changes to the DOE program are extensive. He

cited the test prioritization study as an example of one way the DOE is responding.

Dr. Brocoum discussed the DOE's responses to EPA comments. He noted that EPA had nine comments attached to a letter to the DOE. DOE interpreted the letter to have three additional comments. EPA expressed general agreement with the SCP. Their comments ranged from recommending that DOE determine the origin of the calcite-silica deposits, to items such as determining the boundary of the hydrostratigraphic subbasins, evaluating fracture versus matrix flow, and consideration of the effects of faulting on the waste package. DOE considers that there are various studies scheduled that will address these concerns.

EPA also had a comment about performance assessment that stated that the CCDF must incorporate both natural and human initiated processes and events. Dr. Brocoum noted that EPA is revising its standards and DOE will comment on the revision. Because this affects both the OCRWM and the Waste Isolation Pilot Plant (WIPP), those comments are being put together by Mr. Edward Reigner, Office of Environment, Safety and Health, DOE. Members of both programs are working together to share experience on lessons learned from the WIPP. OCRWM is also meeting with NRC to discuss what they are learning from WIPP.

Dr. Brocoum stated that the two groups conducting the performance assessment work for both projects and are located at the Sandia National Laboratory. These two groups are in the same building, however, the two sites are very different and should be treated differently.

Dr. Pomeroy asked about the use of expert panels and if OCRWM planned this course of action similar to WIPP. Dr. Brocoum responded that OCRWM proposes to gather as much information as possible prior to resorting to expert panels.

EPA also recommended that the DOE use expert judgment or peer reviews in the performance assessment program. The DOE has committed to using a wide spectrum of participants in peer reviews. Mr. Brocoum noted that, in the ESF peer review that is just beginning, DOE plans to use 15 persons who are not associated with the OCRWM program.

Dr. Bjerstedt discussed the DOE's responses to the State of Nevada's comments. He explained that the State submitted two packages on the SCP. The first package was submitted in May 1989 and contained comments on the studies specific to the ESF. The second package commented on the entire SCP, was much larger (1,917 comments), and was submitted in September 1989. He noted that the SCP comment period had been extended to June 15, 1989, but the DOE still agreed to treat the State's comments like all others.

SCP comments were answered in the order in which they were received from the commenting agencies. In December 1990, the DOE responded to the State's comments on the ESF and to comments on two study plans. Most of the ESF comments were made specific to the original ESF site and will be superseded or made irrelevant by new ESF configurations or locations.

State commenters focused on the technical aspects of the SCP. The comment form used by the State allowed an easy cross referencing to the SCP text. Some comments generated commitments from the DOE that will impact the planning process for study plans. Because comments from all state contractors were simply bundled together, many comments were repetitive.

Dr. Bjerstedt discussed changes in the DOE program that have resulted from technical and programmatic concerns on the SCP. Some major comments were on integration of the technical programs, the unrealistic program schedule, site suitability, alternative conceptual models, performance goals, and lack of prioritization. In response, Dr. Bjerstedt noted that the DOE has set up various studies to address these concerns. In response to the State's comment that the DOE's program schedule was unrealistic, the Secretary of the U.S. Department of Energy presented a new program schedule in November 1989 that recognizes there are certain factors beyond DOE's control.

With respect to a comment that the DOE program requires beyond the state of the art methodology and equipment, Dr. Bjerstedt noted that there is an extensive prototype testing program.

Dr. Bjerstedt also noted that the DOE believes the SCP was sufficient for its intended purpose and that it fulfilled the statutory and regulatory requirement for a general plan. He also stated that the Secretary of DOE, in 1989, stated that DOE would first conduct a surface-based program to understand some of the more important issues and then proceed with the ESF.

Dr. Pomeroy asked about the status of the site suitability study and whether it had been folded in with Phase II of the test prioritization study. Dr. Brocoum stated that this was correct and the site suitability study is now in draft form and should be issued to the NRC within the next few months.

Dr. Bjerstedt noted that the State had a concern that the DOE did not respond to the CDSCP comments. He stated that DOE responded to the State's CDSCP comments in a letter of October 1989. DOE also responded to the State's ESF letter in December 1990, to the site suitability concerns in April 1991, and to the State's comments on study plans.

Dr. Bjerstedt also noted that the State has a very competent technical staff, but much of the information that they have requested is not available at this time and is not at the level of detail necessary for the SCP. He then discussed some details of the State technical comments.

Dr. Hinze asked if the DOE had plans to close out State comments in the same manner as the NRC open items. Dr. Bjerstedt responded that they do not envision doing that at this time, but noted that the DOE has offered responses to the State on their study plan comments and will continue to have an ongoing oversight relationship with the State.

Dr. Brocoum discussed the DOE's response to the NRC's SCA. He stated that in July 1991 DOE received NRC's review of DOE's responses. These responses have not been fully examined, but the DOE did note that NRC indicated that significant progress had been made towards closing the two Objections. He also noted that the DOE will be more careful to highlight in its reports what and where NRC open items are addressed. DOE also plans to be clearer about where open items are addressed in future progress reports.

Dr. Brocoum noted that a very important item is the iterative development and revision of the annotated outline. This will help NRC with the standard format and content guide. This way it is hoped that there will be no surprises in completing the license application. Ms. Mary Birch from the DOE contractor, TRW, stated that the DOE will have a preliminary draft of the annotated outline for NRC to review by October 1991. Then talks can be started between the DOE and NRC staffs on the content of the license application.

Dr. Brocoum discussed the two NRC Objections. He noted that NRC has observed all DOE audits and surveillances to verify the DOE program. On August 21, 1991, DOE sent NRC a letter requesting that the QA Objection be lifted. With respect to Objection 2 on the ESF design control process, Dr. Brocoum stated that DOE is preparing a similar letter.

Dr. Brocoum also discussed DOE responses to several NRC comments. These included comments on DOE's approach for identifying information needs, using expert judgment, characterizing the saturated zone, and investigating seismic hazards and fault displacements. Mr. Brocoum stated that DOE will:

1. Use iterative performance assessments and site suitability methodology to help determine any additional information needs;

2. Not use expert judgment as a substitute for data and thoroughly document all use of expert judgment;

3. Evaluate what additional testing is needed to characterize the saturated zone; and

4. Produce a topical report on seismic design using an American Society of Civil Engineers report as a guideline.

Dr. Hinze asked if there was a schedule in place for the start of the ESF. Dr. Brocoum replied that there is a baseline schedule, however, due to budget constraints that schedule is being reassessed. Mr. Carl Gertz, Associate Director for Geologic Disposal, DOE, explained that DOE is reevaluating schedules due to budget cuts and offered to provide the Committee with the preliminary plans of DOE in response to these cuts.

Mr. Gertz explained that in FY 1992 the DOE plans to do as much surface-based testing as possible with the limited funds available and defer comprehensive ESF design until FY 1993. With the funds available the DOE cannot do both, so plans are to gather limited field data. The only design that the DOE will be completing deals with the site preparation package for the portals, roads and drill pads. In FY 1993, DOE will design the portals and the ramps, underground facilities, and surface facilities and begin construction of roads and pads. He also noted that the ESF construction will be in a phased approach using data from each section to design the next phase.

Mr. Gertz stated that the DOE OCRWM budget has been cut from approximately 400 million dollars to 170 million dollars. This funding will be used to conduct shallow drilling, trenching, and other surface studies such as those related to volcanism. No programs will be cut, just deferred. DOE will continue to run the seismic network, monitor water levels, and gather data that would be irretrievable. Mr. Gertz concluded his presentation by stressing that the information he had provided was all preliminary.

VI. STATE OF NEVADA REVIEW ON SITE CHARACTERIZATION PLAN AND RELATED DOE STUDY PLANS (Open)

[Note: Ms. Charlotte Abrams was the Designated Federal Official for this part of the meeting.]

Mr. Steve Frishman, State of Nevada Nuclear Waste Project Office, made the presentation. He stated that he had revised his presentation based on comments by the DOE the previous day. He noted that the State had not yet seen DOE's responses to the State's comments.

Mr. Frishman stated that the State's present recommendation is that DOE should issue a revised Site Characterization Plan for review and comment based on the changes in the program. He cited the revisions to the exploratory shaft (studies) facility design as part of the rationale for this recommendation. Dr. Moeller noted that the understanding was that the SCP was a "living" document that was subject to semiannual updates.

Mr. Frishman stated his concerns with the timeliness of the SCP updates and listed the issues of concern to the State at this time. Those issues included site suitability, prioritization of tests, the exploratory shaft, and overall project changes.

Dr. Hinze noted that the SCP was the starting point for the study plans and more information will appear in those documents. Mr. Frishman explained that the State does not understand the study plans and cannot unless they understand the master plan. In a number of strongly worded statements, Mr. Frishman explained that the State does not agree with the DOE's program for investigations at Yucca Mountain. He also noted that site suitability was addressed in the regulations of DOE (10 CFR Part 960) and licenseability is addressed by Part 60. He believes that Part 960 contains disqualifiers, but Part 60 does not and the State believes that Yucca Mountain meets some of the disqualifying conditions of Part 960. Part 60 contains trade-offs and the site cannot be disqualified over the loss of one characteristic.

Mr. Frishman used the area of hydrology as an example of where DOE is not conducting appropriate studies to address the state's concerns. Mr. Frishman believes that DOE is concentrating on matrix flow and should be examining to a greater extent the potential for fracture flow. Another example cited by Mr. Frishman was the assessment of natural resources at the Yucca Mountain site. He believes that DOE again has not focused on the full range of models. Other areas of technical concern cited by Mr. Frishman were tectonics and volcanism.

Dr. Steindler suggested that if the State does not agree with the SCP, why does the State not write one as an example? Dr. Moeller also agreed with Dr. Steindler's suggestion stating that it would be a constructive exercise. He also noted that the State in their comments on the SCP also appeared to have taken a "shotgun" approach through the submission of many comments, and that priorities were unclear and the comments were not categorized.

Mr. Frishman also stated his concerns with the DOE's approach to issue resolution strategy, stating that it is two years too late for discussion of the State's concerns and DOE is pursuing only the site model they believe to be appropriate.

Dr. Moeller also noted that the State's argument appeared to be more with the Congress than DOE.

Dr. Pomeroy asked about the State's plans with respect to the Calico Hills Risk/Benefit Analysis (CHRBA). Mr. Frishman stated that the State does plan to review the CHRBA, the ESF Alternatives Study, and other DOE reports.

Dr. Hinze noted that the Committee was interested in the State technical staff's reaction to the NRC review of the DOE responses.

VII. NRC STAFF POSITION ON U.S. ENVIRONMENTAL PROTECTION AGENCY'S HLW STANDARDS (WORKING DRAFT NO. 3) (Open)

[Note: Mr. Howard J. Larson was the Designated Federal Official for this part of the meeting.]

Dr. Moeller led the discussion on the NRC staff's position. He noted that the NRC staff had provided to the Committee a copy of proposed responses that combines both the ACNW and the staff's comments to the six questions accompanying the Working Draft No. 3 of 40 CFR Part 191, EPA's high-level waste standards. The proposed combined responses were enclosed with a memorandum from Mr. B. J. Youngblood to Mr. Raymond F. Fraley, dated August 20, 1991. Drs. Seth Coplan and Daniel Fehringer, NMSS, were called on to elaborate on either the staff's position or the proposed responses.

Each question was read, followed by the NRC staff's position and the Committee's response (ACNW letter to Chairman Carr, dated June 27, 1991). The proposed combined response to each question was discussed in detail. The Committee accepted, as drafted, the proposed responses to Questions Nos. 1 through 4 and Question No. 6. The response to Question No. 5 was proposed to be rewritten, in part, as follows: Revise 3rd sentence to read, "However, EPA has not demonstrated that either option is appropriate for protection of public health or the environment."

The Committee approved a memorandum to Mr. B. Joe Youngblood indicating acceptance of the combined responses with the exception of the change in the response to Question No. 5.

VIII. ALTERNATIVE APPROACH TO THE PROBABILISTIC SECTION OF THE CONTAINMENT REQUIREMENTS IN 40 CFR PART 191 (THE "THREE-BUCKET APPROACH") (Open)

[Note: Mr. Howard J. Larson was the Designated Federal Official for this part of the meeting].

Dr. Seth Coplan, NMSS, stated that he is scheduled to brief the Committee during its next meeting on the cut-off point between "unlikely" and "extremely unlikely" events (buckets 2 and 3). It was also the intention of the NRC staff to present a concrete example how the so-called "three-bucket approach" would be implemented.

Dr. Steindler noted that the last bucket, by definition, is for very unlikely events, not incredible ones. He also pointed out the significance of determining where human intrusion fits into this alternative approach and suggested perhaps there is a "two-bucket" approach for human intrusion -- one that differentiates between intrusion into the geology constituting the repository horizon as opposed to one involving intrusion into the waste canister itself.

Dr. Hinze also commented on the need to be quantitative and the significance of a dividing line between bucket one and bucket two. He noted that the first approach should always be deterministic and, in order to do that, one must have facts. For example, more data on drilling are needed. After further discussion, Dr. Pomeroy conveyed a statement made during a recent Nuclear Waste Technical Review Board meeting; Dr. Werner North had pointed out that probabilities on the order of a tenth provided a relatively solid basis for determinations while analyses using much smaller probability numbers were fundamentally guesses.

Dr. Coplan discussed the rationale behind the 1983 final criteria issued by the NRC insofar as consideration of human intrusion events, i.e., at that time it was almost considered not to happen. The public comments received made it an issue. Dr. Fehringer added that the initial proposal endeavored to do everything reasonable to prevent intrusion, such as the use of markers, detailed land use records, et al. After further discussion on the philosophy of the predictability of human intrusion, Dr. Coplan agreed to research the earlier rulemaking and include the results of that research in the next presentation to the Committee.

After further discussion on various scenarios, possible probabilities, continuum of probabilities, the proper "bucket" placement of human intrusion and the need to quantify the boundary areas, Dr. Coplan stated that the staff position is to quantify the boundary between buckets one and two but qualitatively define the boundary between buckets two and three.

Dr. Steindler emphasized his belief that the issue will not come to closure without a quantitative determination that would be more useful than a qualitative one.

In closing, Dr. Moeller stated that the Committee was looking forward to the staff's next presentation and the details of their followup to these discussions.

IX. FINAL NRC STAFF PAPER ON DEALING WITH UNCERTAINTIES IN IMPLEMENTING THE EPA HIGH-LEVEL WASTE STANDARDS (Open)

[Note: Mr. Howard J. Larson was the Designated Federal Official for this part of the meeting.]

Dr. Moeller stated that the revised uncertainties paper, SECY-91-242, was not only helpful but also resolved many issues identified by the Committee in its comments on the draft paper (such as the delineation of the different types of uncertainties and the insertion into an Appendix of the analysis of EPA's HLW standards.) He also noted several relevant items that arose during the NRC staff's presentation to the Commissioners during the prior week.

Dr. Coplan, NMSS, noted that the staff would probably return in October to discuss the significance of various alternatives and alternative assumptions. He also noted that SECY-91-242 would not be rewritten. In response to a question regarding health effects, uncertainties associated with that issue are to be displaced to the rulemaking rather than be included in the licensing of the HLW repository.

Dr. Pomeroy asked about a suggestion proposed by the Committee that an overall strategic "road map" be developed. Dr. Coplan stated that the staff believes the Systematic Regulatory Analyses (SRA) process would essentially result in a "road map."

Dr. Pomeroy also asked about an umbrella document for the licensing activity and was informed by Dr. Coplan that a "license application review strategy" is being developed that would lay out the broader aspects of the strategies.

Dr. Coplan discussed the elements considered in both future states uncertainty and modeling uncertainty. He noted the difference in the approaches followed in each case, particularly for an HLW repository. He indicated that the staff has been involved with the Performance Assessment Advisory Group, Nuclear Energy Agency, in planning a compilation of scenarios used by different countries. The compilation will begin next year. It is hoped that this will be sufficiently mature for use in rulemaking proceedings. Additionally, it was believed that by indicating, in words, in the Part 60 language, that while proof cannot be had in the ordinary sense, by a mix of natural analogs and laboratory data, for example, one could be "reasonable assured."

Dr. Pomeroy asked for further discussion on the ability of natural analogues to provide code validation. Dr. Coplan agreed that analogues alone could not provide validation. He noted that the NRC is working with SKI, the Swedish regulatory authority, to develop a strategy for regulating the validation of models. The Committee expressed interest in being kept informed of progress as this effort proceeds.

X. EXECUTIVE SESSION (Open/Closed)

[NOTE: Mr. Richard K. Major was the Designated Federal Official for this part of the meeting.]

A. Memoranda

- 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.)

- Program Plan for the Advisory Committee on Nuclear Waste (Report to Chairman Selin, dated September 3, 1991.)

B. ACNW Four-Month Plan (Open)

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.

C. Proposed Rule on Ethical Conduct of Employees (Closed)

The Committee discussed the Office of Government Ethics (OGE) proposed rule on ethical conduct of employees of the Executive Branch and the impact it will have on the personal and professional (non-government) activities of Committee members as well as its impact on the functioning of the Committee. [This session was closed to the public to discuss information the release of which would represent a clearly unwarranted invasion of personal privacy.]

D. Groundwater Protection in the Regulatory Process (Open)

The Committee discussed a proposed statement-of-work for a literature review and synthesis of groundwater protection requirements specified in various federal and state regulations. Mr. Howard Larson has gathered background documents on this subject. Dr. Steindler recommended that the draft statement-of-work be further refined by the ACNW staff. The work statement should include as a goal the development of an

internal report that summarizes the current state of rulemaking on groundwater protection.

E. Visit to the Waste Isolation Pilot Plant (WIPP) (Open)

The Committee discussed the proposed 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.

F. ACNW Future Activities (Open)

- 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. Several symposium papers will be presented on the hydrology, risks, and hazards related to the Yucca Mountain site.

- The Committee requested that the meeting with the Commissioners be rescheduled from October 23 or 24, 1991, to December 18 or 19, 1991.

- 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.

- The members discussed the merits of holding full Committee meetings twice a year outside of the Washington metropolitan area. Las Vegas and Chicago (near Argonne National Laboratory) were mentioned as potential meeting sites.

- Dr. Steindler requested that Mr. Robert Bernero be invited to the next meeting to discuss how much staff resources are devoted to ACNW briefing preparation and what are the briefing preparation procedures used by the staff.

G. Future Meeting Agenda

Appendix II 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.

The meeting was adjourned on Thursday, August 29, 1991, at 4:45 p.m.

APPENDIX I: MEETING ATTENDEES

34TH ACNW MEETING
AUGUST 27-29, 1991

ACNW MEMBERS	1st Day	2nd Day	3rd Day
Dr. William J. Hinze	X	X	X
Dr. Dade W. Moeller	X	X	X
Dr. Paul W. Pomeroy	X	X	X
Dr. Martin J. Steindler	X	X	X

NRC STAFF		1st Day	2nd Day	3rd Day
Ron Ballard	NMSS	X		
David Brooks	NMSS		X	X
Unte Cheh	NRR		X	
Seth Coplan	NMSS		X	X
Frank A. Costanzi	RES		X	
Ken Dattilo	OC		X	
Abraham Eiss	NMSS		X	
Margaret Federline	NMSS		X	X
Shirley Fortuna	NMSS		X	
Greg Galletti	NRR			X
Robert Hogg	NMSS			X
Joseph Holonich	NMSS		X	
Kenneth R. Hooks	NMSS		X	
Robert L. Johnson	NMSS		X	
Philip Justus	NMSS		X	X
Mike Lee	NMSS		X	
John Linehan	NMSS		X	
Don Loosley	NMSS		X	
Chris McKenney	NMSS			X
Bill Morris	RES		X	
Mysore Nataraja	NMSS		X	
George Pangburn	OCM			X
Michael Ratky	OGC			X
Trip Rothschild	OGC			X
Melvin Silberberg	RES		X	
King Stablein	NMSS		X	X
Frederick "Fritz" Sturz	NMSS	X		
Warren H. Swenson	NRR		X	
John Trapp	NMSS		X	
Rosetta Virgilio	GPA		X	X
Kathryn Winsberg	OGC		X	
James Wolf	OGC		X	X
B.J Youngblood	NMSS		X	

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

Bob Adler	CNWRA
Michael Bauser	EEI
Mary L. Birch	NWMS
Thomas Bjerstedt	DOE
Jim Bresee	DOE
Stephen Brocoum	DOE
Hal Cleary	Weston
Maureen Conley	Radioactive Exchange
Thomas A. Cotton	NWMS M&O
Jack DeMastry	FPL Co
Linda J. Desell	DOE
Stan Echols	Winston & Strawn
David F. Fenster	NWMS M&O
Steve Frishman	State of Nevada, NWPO
Bob Gamble	Weston
Carl Gertz	DOE
April V. Gil	SAIC
Richard Goffi	Weston
James Gruhlke	EPA
William Haslebacher	Weston
Chris Henkel	EEI
Gary Jones	ICF
Julie M. Jordan	EEI
Dan Kane	DOE
Paul M. Krishna	Battelle
Pat LaPlante	CNWRA
Walter Matyskiela	NWMS
Terry McLaughlin	EPA
Cliff Noronha	Weston
Edward Reginer	DOE
Kyle Rogers	EPA
Roles	DOE
Bill Russo	EPA
G. Salamon	FPL
Stephanie Slewka	Las Vegas, NV
Steve Spector	CNWRA
Eric Swanson	B&W
Edward Taylor	TRW/M&O
Karen Unneistall	Newman & Holtzinger
Ray Wallace	USGS-Hq/DOE
Stephan Zroco	DOE

APPENDIX II. FUTURE AGENDA

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

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.

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.

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.

APPENDIX III. DOCUMENTS RECEIVED

A. Documents Received from Presenters and ACNW Staff

AGENDA ITEM NO. — DOCUMENTS

1 Chairman's Report

1. Items of Possible Interest to ACNW Members and Staff, dated August 25, 1991, by Dade W. Moeller [Official Use Only]
2. Memorandum to Raymond Fraley from Dade Moeller, dated August 24, 1991, re Location of ACNW Meetings
3. Memorandum to Richard Major from Dade Moeller, dated August 24, 1991, re Miscellaneous Items
4. Memorandum to Richard Major from Dade Moeller, dated August 24, 1991, re Mishaps in Handling Radioactive Wastes
5. Memorandum to Richard Major from Dade Moeller, dated August 24, 1991, re Biological Treatment of Radioactive Wastes
6. Memorandum to ACNW Members from Howard Larson, dated August 22, 1991, re Staff Requirements Memo (SRM) - Periodic Meeting of the Advisory Committee on Nuclear Waste with the Commissioners, July 25, 1991

2 Spent Fuel Storage

7. Draft Memorandum to Dade Moeller from Martin Steindler, dated August 26, 1991, re An Alternate Response to Chairman Selin Regarding the Storage of HLW [Official Use Only]
8. Interim Spent Fuel Storage Presentation to the Advisory Committee on Nuclear Waste, by Fritz Sturz, August 27, 1991 [Viewgraphs]

8A. Waste Confidence Rulemaking Memoranda

a. ACRS Letter Report to Chairman Ahearne, dated December 10, 1980, re Waste Confidence Rulemaking - Storage and Disposal of Nuclear Waste
b. ACNW Letter Report to Chairman Zech, dated May 3, 1989, re Proposed Waste Confidence Decision by the Waste Confidence Review Group
c. ACNW Letter Report to Chairman Carr, dated May 1, 1990, re Waste Confidence Decision Review

3 Proactive Program for High-Level Waste

9. Paper entitled, "Development and Implementation of the Division of High-Level Waste Management Proactive Program", dated August 1991, Division of High-Level Waste Management
10. Proactive Program from Division of High-Level Waste

Management, dated August 28, 1991 [Viewgraphs]

4 NRC Staff's Review of DOE's Responses to the Site Characterization Analysis

11. Letter to John Bartlett, OCRWM, from Robert Bernero, dated July 31, 1991, re SCA Response Evaluation, with enclosure
12. Presentation to the ACNW entitled, "NRC Staff Review of DOE Responses to the NRC Site Characterization Analysis (SCA) of the DOE Site Characterization Plan (SCP) for the Proposed High-Level Waste Repository Site at Yucca Mountain, Nevada" by King Stablein, dated August 28, 1991 [Viewgraphs]

5 DOE Responses to Comments on the Yucca Mountain Site Characterization Plan

13. DOE Summary and Discussion of Responses to Comments on the Site Characterization Plan, dated August 28, 1991, by Thomas Bjerstedt, DOE [Viewgraphs]
14. Responses to EPA's Comments on the Site Characterization Plan, dated August 28, 1991, by Stephen Brocoum [Viewgraphs]
15. DOE Summary and Discussion of Responses to Comments Made by the State of Nevada, dated August 28, 1991, by Thomas Bjerstedt [Viewgraphs]
16. Management of Comments on DOE's Site Characterization Plan (SCP) and Integration with the Planned Geotechnical Program by Thomas Bjerstedt etal, from Proceedings of the Second Annual International Conference on High-Level Radioactive Waste Management, Volume 2
17. DOE Presentation on Response to Comments on the Site Characterization Plan [Handout No. 5-1]
    a. Letter to Richard Sanderson from Dwight Shelor, dated January 4, 1991, re DOE's Responses to SCP Comments by EPA, with enclosures
    b. Letter to Robert Loux from Carl Gertz, dated December 13, 1990, re DOE Responses to Comments in the State of Nevada's May 30, 1989, Letter on the Exploratory Shaft Facility, with enclosures
18. Responses to NRC's Site Characterization Analysis, dated August 28, 1991, by Stephen Brocoum [Viewgraphs]
19. Charts of the DOE Proposed FY92 Surface Disturbing Activities and Proposed ESF Design Activities (FY92 & 93), undated [Viewgraphs used by Carl Gertz]

6 State of Nevada's Comments on the DOE's Site Characterization Plan for Yucca Mountain

20. State of Nevada's Review and Comment on U.S. Department of Energy Yucca Mountain Site Characterization Plan and Related Study Plans, dated August 29, 1991, by Carl Johnson [Viewgraphs]

8 NRC Staff Position on: 1) Working Draft #3 of EPA's HLW Standards, and 2) Dealing with Uncertainties in Implementing EPA's HLW Standards (40 CFR Part 191)

21. Addition to Comment on Question 6, undated
22. Memorandum to ACNW Members from Howard Larson, dated August 21, 1991, re Responses to EPA's Six Questions Appended to Working Draft #3 (WD3) 40 CFR Part 191, with enclosure
23. Memorandum to Dade Moeller from James Taylor, dated August 13, 1991, re Staff's Approach for Dealing with Uncertainties in Implementing the EPA HLW Standards

B. Meeting Notebook Contents Listed by Tab Number

TAB CONTENTS

1 Chairman's Report

1. Introductory Statements by ACNW Chairman for the 34th Meeting, dated August 27-29, 1991
2. Items of Possible Interest to ACNW Members for the 34th Meeting, dated August 27-29, 1991

2 Spent Fuel Storage

3. Status Report on Spent Fuel Storage, dated August 27, 1991
4. Memorandum to NRC Commission from Samuel Chilk, dated August 8, 1991, re Staff Requirements Memorandum, with enclosure
5. Partial Transcript of Periodic Meeting with Advisory Committee on Nuclear Waste, dated July 25, 1991
6. Draft Memorandum to Paul Pomeroy from Raymond Fraley, dated July 26, 1991, re Questions Raised by Chairman Selin Regarding ACNW Review of Interim Storage of High-Level Waste Resulting from Licensed Nuclear Power Plant Operations
7. "Consideration of Environmental Impacts of Temporary Storage of Spent Fuel After Cessation of Reactor Operation," Federal Register, Vol. 55, No. 181,

September 18, 1990 (Also known as the Waste Confidence Hearing)

3 Proactive Program for High-Level Waste

8. Status Report on Second Update of the Regulatory Strategy and Schedule for the High-Level Waste Repository Program, dated August 27-29, 1991
9. SECY-91-225, Second Update of the Regulatory Strategy and Schedules for the High-Level Repository Program, dated July 29, 1991
10. SECY-90-207, First Update of the Regulatory Strategy and Schedules for the High-Level Waste Repository Program, dated June 7, 1990
11. SECY-88-285, Regulatory Strategy and Schedules for the High-Level Waste Repository Program, dated October 5, 1988

4 NRC Staff's Review of DOE's Responses to the Site Characterization Analysis

12. Status Report on Staff's Review, dated August 28, 1991
13. Memorandum to ACNW Members from Charlotte Abrams, dated August 1, 1991, re NRC Review of DOE Responses to the Site Characterization Analysis (NUREG-1347), with enclosure

5 DOE Responses to Comments on the Yucca Mountain Site Characterization Plan

14. Memorandum to ACNW Members from Charlotte Abrams, dated March 19, 1991, re DOE Responses to NRC Site Characterization Analysis, without enclosure
15. Letter to Samuel Rousso, DOE, from Richard Sanderson, EPA, dated May 30, 1989, re Environmental Protection Agency's Comments on the Yucca Mountain Site Characterization Plan

5a 16. Draft Letter Report to Chairman Selin, dated August 1991, re Program Plan for the Advisory Committee on Nuclear Waste

6 State of Nevada's Comments on the DOE's Site Characterization Plan for Yucca Mountain

17. Status Report on State of Nevada's Comments on the DOE Site Characterization Plan for Yucca Mountain, dated August 29, 1991
18. Letter to Samuel Rousso, DOE, from Robert Loux, State of Nevada, dated September 1, 1989, re State's Comments on the Yucca Mountain Site Characterization Plan, with enclosure
19. Letter to Carl Gertz, DOE, from Robert Loux, State of Nevada, dated May 30, 1989, re State of Nevada

Preliminary Comments on the Site Characterization Plan for Yucca Mountain Candidate High-Level Nuclear Waste Repository Site, with enclosure

7 Alternative Approach to the Probabilistic Section of the Containment Requirements in 40 CFR Part 191 ("The Three-Bucket Approach")

20. Status Report on Alternative Approach to the Probabilistic Section of the Containment Requirements in 40 CFR Part 191 ("The Three-Bucket Approach"), dated August 29, 1991, with enclosures

8 NRC Staff Position on: 1) Working Draft #3 of EPA's HLW Standards, and 2) Dealing with Uncertainties in Implementing EPA's HLW Standards (40 CFR Part 191)

21. Status Report on NRC Staff Position on: 1) Working Draft #3 of EPA's HLW Standards, and 2) Dealing with Uncertainties in Implementing EPA's HLW Standards (40 CFR Part 191), dated August 27-29, 1991, with enclosures

9 Conduct of Employees

22. Memorandum to ACNW Members from Raymond Fraley, dated August 13, 1991, re Conduct of Employees - Proposed OGE Rule on Ethical Conduct, with enclosure
23. Memorandum to ACRS/ACNW Members from Michael MacWilliams, dated August 15, 1991, re Conduct of Employees - Additional Information, with enclosures

10 Future Meeting Agenda

24. Lists of Tentative Meeting Agenda Items, undated

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

October 23, 1991

NOTE TO: Donald H. Lanham, Acting Chief
Docketing and Document Control Desk Section
Document Control Branch

FROM: Ethel M. Barnard
Advisory Committee on Nuclear Waste

SUBJECT: PLACEMENT OF "FULL TEXT" ACNW DOCUMENTS ON NUDOCS

In accordance with direction from Jim Blanton, I have attached the following documents for "full text" processing through the NUDOCS system:

ACNW-0035 - WORKING GROUP MEETING ON INTEGRATION OF GEO-PHYSICAL TESTS INTO SITE CHARACTERIZATION OF A HIGH-LEVEL WASTE REPOSITORY, 4/22/91
ACNW-0036 - 31ST ACNW MEETING, 5/22-23/91
ACNW-0038 - 32ND ACNW MEETING, 6/20/91
ACNW-0040 - 33RD ACNW MEETING, 7/25-26/91
ACNW-0041 - 34TH ACNW MEETING, 8/27-29/91

Also enclosed is a 3 1/2" diskette containing the "electronic text" of the documents. The documents are in "WORDPERFECT" format. Your signature in the space below, will serve as confirmation of receipt of the "Hard Copy" and "Electronic Copy". Please return a copy of this note to me at Mail Stop P-315. If you have any questions concerning this matter, please feel free to contact me on x27691.

Ethel M. Barnard, ACNW

Received by Donald H. Lanham:

Signature:_____ Date:_____

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

October 23, 1991

MEMORANDUM FOR: Jim McKnight
Document Control Systems

FROM: Ethel Barnard
Advisory Committee on Nuclear Waste

The attached **ACNW** Documents are being provided to you for listing on the accessions list. Please forward to the Public Document Room.

Attachments:
As Stated

ACNW MINUTES AND CONSULTANT REPORTS

(PDR 102391)

1. ACNW-0035 WORKING GROUP MEETING ON INTEGRATION OF GEO-PHYSICAL TESTS INTO SITE CHARACTERIZATION OF A HIGH-LEVEL WASTE REPOSITORY, 4/22/91

2. ACNW-0036 31ST ACNW MEETING, 5/22-23/91

3. ACNW-0038 32ND ACNW MEETING, 6/20/91

4. ACNW-0040 33RD ACNW MEETING, 7/25-26/91

5. ACNW-0041 34TH ACNW MEETING, 8/27-29/91

6. ACNWS-0030 Moeller ACNW ltr 5/17/91 to Carr NRC, Summary Report - Thirtieth Meeting of the ACNW, April 23-24, 1991

7. ACNWS-0031 Moeller ACNW ltr 6/15/91 to Carr NRC, Summary Report - Thirty-First Meeting of the ACNW, May 22-23, 1991

8. ACNWS-0032 Moeller ACNW ltr 7/18/91 to Selin NRC, Summary Report - Thirty-Second Meeting of the ACNW, June 20, 1991

9. ACNWS-0033 Moeller ACNW ltr 8/27/91 to Selin NRC, Summary Report - Thirty-Third Meeting of the ACNW, July 25-26, 1991

10. ACNWS-0034 Moeller ACNW ltr 9/19/91 to Selin NRC, Summary Report - Thirty-Fourth Meeting of the ACNW, August 27-29, 1991

11. Fraley ACNW Memo 6/13/91 to Taylor EDO, 31st ACNW Meeting Follow-Up Items

12. Fraley ACNW Memo 7/17/91 to Taylor EDO, 32nd ACNW Meeting Follow-Up Items

13. Fraley ACNW Memo 8/27/91 to Taylor EDO, 33rd ACNW Meeting Follow-Up Items

14. Fraley ACNW Memo 9/19/91 to Taylor EDO, 34th ACNW Meeting Follow-Up Items

15. Fraley ACNW Memo 10/16/91 to Taylor EDO, 35th ACNW Meeting Follow-Up Items

16. Fraley ACNW Memo 7/10/91 to Hoyle ACMO, Quarterly Report on Closed Meetings of the Advisory Committee on Nuclear Waste