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9TH ACNW MEETING
APRIL 26-28, 1989

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MINUTES OF THE THE 9TH MEETING OF THE
ADVISORY COMMITTEE ON NUCLEAR WASTE
APRIL 26-28, 1989
BETHESDA, MD

The 9th meeting of the Advisory Committee on Nuclear Waste was convened by Chairman Dade W. Moeller at 8:30 a.m., on Wednesday, April 26, 1989, at 7920 Norfolk Avenue, Bethesda, Maryland.

[Note: For a list of attendees, see Appendix I, ACNW members, Drs. Dade. W. Moeller and Martin J. Steindler were present. ACNW consultants, Drs. William J. Hinze, Judith B. Moody, Donald A. Orth, and Mr. Eugene E. Voiland were also present.]

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

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

I. CHAIRMAN'S REPORT (Open)

[Mr. R. F. Fraley was the Designated Federal Official for this portion of the meeting.]

Dr. Moeller announced that the NRC has established an Office of Inspector General effective April 17, 1989. Mr. Martin G. Malsch, former Deputy General Counsel for Licensing and Regulation is the Acting Inspector General. The functions of the former Office of Inspector and Audit have been transferred to the new office. The Office of Inspector and Audit has been abolished.

Dr. Moeller announced that on April 7, 1989, the Commission approved the final rule that provides for issuance of early site permits, standard plant design certification, and combined construction permits and conditional operating licenses.

Dr. Moeller noted that Mr. James Watkins, Secretary of the Department of Energy (DOE), has proposed to name Mr. Victor Stello, NRC Executive Director for Operations, as the DOE Assistant Secretary for Defense Programs. In order to complete the proposed appointment, Mr. Stello would need to be nominated for the position by President Bush, and confirmed by the Congress.

Dr. Moeller announced that Dr. Herbert Kouts, former ACRS member, had recently had a heart attack. Fortunately, he is recovering and is expected to be released from the hospital soon.

Dr. Moeller observed that the construction of a second NRC building on the White Flint site has been approved by the Montgomery County Planning Board. The building permit is expected to be issued within 90 days. The Advisory Committee on Nuclear Waste is slated to occupy a portion of the new building.

II. TECHNICAL POSITION ON POSTCLOSURE SEALS IN AN UNSATURATED MEDIUM (Open)

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

A. Discussion of the Technical Position (TP)

In covering this subject, Dr. Dinesh Gupta, Engineering Branch, Division of High-Level Waste Management, reviewed the following topics: (a) the Department of Energy's (DOE) proposed conceptual design of the repository, (b) DOE's current seal design concepts, (c) NRC's regulatory requirements, 10 CFR Part 60, that pertain to the seal design, performance requirements, and performance confirmation testing, (d) the need for this technical position (TP), and (e) a discussion of the TP for the Yucca Mountain site.

Dr. Gupta exhibited and discussed a scale model of the repository, which showed both surface and underground facilities. The model gave the Committee a perspective of the repository and the location of the seals that would be discussed. He said that in the final repository there will be six underground openings from the surface: (1) a waste handling ramp, (2) a ramp for removing excavated rock, (3) two exploratory shafts that will be used as ventilation shafts, (4) a workers and materials shaft, and (5) an emplacement exhaust shaft, which is essentially a ventilation shaft for removal of the exhaust air from the repository. In addition to these six openings there will be approximately 40 to 50 exploratory boreholes, including those for hydrologic testing. DOE uses the term, sealing, in reference to all activities that are associated with closure of the underground facility -- the shafts, ramps, and boreholes. The seals may be required to limit water flow from the surface (due to flooding and rainfall) into the underground facility, and to limit the gaseous flow from the underground facility to the surface.

Dr. Gupta said that the current position of DOE is that the seals are not needed to meet the performance objective requirements of 10 CFR Part 60. However, during the construction of the facility, DOE may evaluate the need for seals -- the location and number of which will be determined by DOE based on what is found underground.

He described the general arrangement for sealing the four shafts. It consists of a concrete surface cover, a concrete collar core, and an anchor-to-bedrock concrete plug seal. The shaft itself will be filled with crushed tuff. If necessary, a concrete settlement plug may be added to avoid settlement of the crushed tuff. The shaft

would be covered with riprap along the surface. Dr. Moeller asked if the riprap would be good for 10,000 years. Dr. Gupta said that the riprap would be good only for 1,000 years and agreed with Dr. Moeller's expressed understanding that, according to DOE, even if the shafts were left open, there would be no problem. However, the shafts would be sealed primarily for safety reasons and to prevent human intrusion. Water would still be able to flow through the shafts to sumps and thence to the water table, there being barriers to prevent contamination of the drain water. Faults and fractures that are interrupted by drifts will also be sealed.

Dr. Moody asked if sealing the holes for no other reasons than for that of safety was sufficient argument for sealing them. Dr. Gupta assented.

Dr. Moeller asked about water penetration of the Calico Hills unit which he understood to be an impervious barrier between the unsaturated and saturated zones. Dr. Gupta said it is hydraulically not impervious, that water would be able to go through it, and that this water should not be contaminated since the water that flows through these rapid pathways would not, by design, have been in contact with the waste packages.

Dr. Gupta said that DOE also plans to seal the boreholes and the two ramps in a manner similar to that for the shafts. He said that the sealing of the underground facility itself is an area not covered by this technical position, but that DOE is examining several options for this purpose, their principal emphasis being in all cases on dealing with flow-through water only, and not with the movement of gaseous radionuclides.

Dr. Hinze asked how the fracture flow concept, as contrasted with flow in the coarse medium, is being taken into consideration in regard to these ramp and borehole sealing options. Dr. Gupta said that DOE is considering that there might be some fracture flow and that water may not necessarily remain within the matrix. DOE wants to control the water flow and ensure that it will drain out of the faults, to the extent possible.

Dr. Steindler asked about DOE's approach to the restriction of gas flow. Dr. Gupta responded that DOE's analysis assumes the medium is a continuum and that air would flow through the matrix; DOE is not specifically addressing the possibility of air outflow through fractures and faults. Their analysis does not envision any problem with air outflow.

Mr. Voiland asked what volume of water is NRC concerned with in the whole system. Dr. Gupta said it is uncertain and only speculative at this time since there are no data. DOE's estimates are that

there will be only very small quantities of water, approximately 15 gallons per day through each fracture.

Dr. Hinze asked if any consideration has been given to the fracture of liners as a result of movement along faults, commenting that the concern is with the passage of seismic waves and not with the physical movement due to an earthquake. He added that it must be of concern if the liners are part of the whole system and that their integrity be maintained through any earth movement. Dr. Gupta said that DOE is designing the liners to the same criteria as for seismic loadings in nuclear power plants, i.e., for a movement of about five centimeters.

Dr. Hinze also asked if DOE's position, as expressed by their proposed methods of handling the incoming water, is an admission that there is no way that water can be kept out of the system. Dr. Gupta said that NRC's perception of the DOE position is that the water quantities are going to be extremely small and therefore of no concern.

Dr. Moeller noted that it appears that DOE is acknowledging that water may gain access to the repository and that they are going to take care of it if it does. He said that the idea of putting a collection basin beneath a fracture to receive and hold the water is a reasonable approach. Dr. Gupta agreed, but said that the NRC staff's concern is whether the drainage passageways could remain effective for the number of years that DOE will be relying on that drainage, adding that some testing, data or evidence to that effect would have to be provided by DOE to address that question.

In regard to the NRC Standards, Dr. Gupta cited the overall system performance and objective of Parts 60.112 and 60.134 that provide the design criteria and the selection of materials and placement methods of seals for shafts and boreholes, and Subpart F, the performance confirmation program; Parts 60.140, general requirements; 60.142, design testing; and 60.24(a), the application and environmental report. Part 60.24(a) states that the report shall be as complete as possible in the light of information that is reasonably available at the time of docketing.

With regard to the need for a TP on seals, Dr. Gupta emphasized (1) that the sealing design concepts are different for an unsaturated medium, (2) that the regulatory requirements (Part 60.134) for those concepts are not self explanatory, and (3) that the NRC staff needs to clarify the Q-list requirements for seals (Part 60.151), and the intent of performance confirmation testing requirements for seals [Parts 60.140, 60.142, and 60.24(a) as cited above].

Dr. Gupta concluded by stating that the staff also needs to clarify that uncertainties in predicting the longevity of seals must be

considered in evaluating the role of seals in meeting the requirements of Part 60.112. He added that TPs are not substitutes for regulations but that they provide one way for the license applicant to comply with the regulations. Alternate positions are acceptable if they can be justified to meet the applicable regulations.

He added that the TP emphasizes: (1) use of design features to reduce the need for seals, (2) early collection of data, and (3) use of redundancy and consideration of uncertainties in long-term performance evaluation.

In regard to Q-listing of this issue, Dr. Gupta said that the position NRC has taken is that DOE should use NUREG-1318, (Technical Position on Items and Activities in the High-Level Waste Repository Program, April 1988) to determine the Q-list. If seals are determined not to be important to waste isolation, they can be removed from the Q-list. However, if seals are included on the Q-list, sealing activities should be covered by an adequate QA plan. Dr. Moody asked if DOE has put forward a paper that articulates why they think sealing is not needed? Dr. Gupta said that DOE's current position on the Q-list is that there are no items, including this sealing item, that they think are important to safety or to waste isolation. But NRC's position, as expressed in NUREG-1318, is that unless DOE can show otherwise, this sealing item should be on the Q-list and can be removed only, if and when, sufficient data are collected which show, in a reasonable manner, that it does not need to be on the Q-list. It is NRC's position that the data are insufficient to exclude the seals from the Q-list.

With regard to preventing significant amounts of gases from escaping through the sealed shafts, Dr. Steindler asked if NRC or DOE has indicated that this is a worthwhile endeavor and therefore should be part of the technical position that the staff should take. Dr. Gupta said that DOE is currently investigating this matter but the question is whether there are sufficient data for them to draw a conclusion. The results of a 1985 DOE study indicated that there was a marginal factor of safety regarding gaseous outflow, which is still a concern of both NRC and DOE.

Dr. Hinze commented on statements in the position paper regarding the number of drill holes, which he believed should be emphasized more. He said that the amount of information obtained from drill holes should be maximized by the use of nondestructive geophysical types of tests, thus resulting in a fewer number of drill holes. Dr. Moody agreed, but Dr. Steindler recommended caution in this area until more data are available, also stressing that the emphasis in this document is on sealing shafts and boreholes, not how many there should be or for what purpose they are and will be drilled. Dr. Hinze agreed with Dr. Steindler's position, adding that there may

well be a couple of faults that provide sufficient vertical movement that would swamp the effect of the drill holes.

B. Summary of Public Comments on the Technical Position

Mr. John Buckley, Division of High-Level Waste Management, discussed the proposed resolution of public comments on the draft TP that was published in the Federal Register in October 1988. A total of 66 comments were received, 30 from DOE, 32 from the state of Nevada, 3 from the U.S. Bureau of Reclamation and 1 from the U.S. Geological Survey. Twenty-two of the comments dealt with design considerations, 19 with the introduction of the TP, 10 with the performance analysis, 8 with site characterization, and 7 with performance confirmation. NRC was in agreement with the majority of the comments. There were 32 changes made as requested. NRC has not identified any major areas of significant technical disagreement.

Regarding the location of the shafts and ramps, Dr. Steindler commented that he was curious why this topic was raised in a technical position dealing with barriers and seals. Mr. Bunting said that the NRC staff's purpose in doing so was so they could minimize the damage that would have to be compensated for with the seals and so they would not have to rely on seals to provide any performance. Mr. Buckley added that as long as the DOE meets the performance objectives, NRC cannot dictate to DOE the locations of shafts and ramps. He added that the locations as discussed in the technical position were only included for the purpose that they may affect: (1) the performance of the seals, (2) the required testing of the seals, or (3) the design of the seals.

In regard to performance confirmation considerations, Mr. Buckley said that DOE's position is that data for the license application will be collected under the performance confirmation program. However, NRC's position is that, although 10 CFR 60 requires the PC program to begin during site characterization, the data may not be available to support the license application; any data that are required for seal design must be collected during the site characterization program rather than during the performance confirmation program.

III. WASTE CONFIDENCE REVIEW GROUP REPORT (Open)

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

Dr. Moeller summarized the ACNW Working Group meeting held on April 19, 1989. During that meeting, Mr. Robert Bernero, Director, NMSS, described the formation of the review group, its membership, and function. The method by which the report was developed was described as was the history of the

original Waste Confidence Decision. The five findings of the original decision were also detailed and reviewed by Mr. Bernero.

During his summary Dr. Moeller noted where major changes in the original findings had been proposed. The first modified finding was that one repository would be available by 2007 or 2009. This has been altered to indicate that a repository will be available in the first quarter of the next century. The second notable change in the 1984 findings was that it is possible to store spent fuel for up to 100 years. Dr. Moeller noted that this included the option of dry cask storage at individual nuclear power plant sites. Finally, the staff has attempted to separate the current decision and individual findings from specific licensees or judicial proceedings.

The dry cask storage system being used in a demonstration project at the Surry Nuclear Power Plant was described in detail at the meeting on April 19th and Dr. Moeller mentioned that technique for on-site storage.

Dr. Moeller specified several questions that arose in his mind. First, what is our confidence that a high-level waste repository can be constructed and be available in the time frame set by the staff, i.e., the first quarter of the next century. It was noted that this estimate included an allowance for the possibility that the Yucca Mountain site might not prove to be suitable. The second question proposed by Dr. Moeller was: "Will the NRC staff be able to demonstrate that the facility proposed by DOE will meet the probabilistic standards promulgated by EPA." It was noted that this question is a recurring one that will be difficult to resolve affirmatively. The third question was whether delays in the acquisition of data related to site characterization need be considered in particular detail.

Dr. Moeller also commented that decommissioning wastes were not considered explicitly by the staff. It was noted further that Congress has tended to avoid the implementation of a centralized surface storage option, the Monitored Retrievable Storage (MRS) facility. As a consequence, individual utilities are developing their own on-site facilities for dry cask storage to relieve spent fuel storage pool crowding.

Dr. Steindler commented that the findings appear to be outside the scope of the original judicial orders. Mr. Robert MacDougall, NMSS, explained that the Commission, in its original decision and findings, chose to go beyond the scope of the court order. Thus, these findings are also generic in extent and are not limited to specific licensees or facilities. Dr. Moeller noted that the staff had indicated that the Yucca Mountain site is not large enough to contain the currently legislatively mandated volume of spent fuel.

Mr. Eugene Voiland had prepared comments on the staff's presentation of April 19, 1989. They were distributed and he proceeded to explain them in detail. He noted that the draft findings were perfectly consistent with Mr. Bernero's presentation on April 19, 1989. He found them to be well and clearly written. The 1984 deliberations were systematically detailed and the effects of technical advances and legislative changes, the 1987 Nuclear Waste Policy

Amendments Act in particular, were taken into account. He noted that the current review group had found no reason to abandon the 1984 findings. In fact, they had determined that they, given certain caveats, had decided to extend them. Mr. Voiland also noted that some editing of the draft report would be necessary.

Mr. Voiland also addressed the question of the site's capacity to contain the mandated volume of spent fuel that. Mr. Voiland stressed that the capacity of the site should be determined by technical features of the site or the wastes. It should not be arbitrarily set or mandated. Dr. Moeller noted that the capacity had been legislatively mandated. Mr. Voiland agreed but suggested that the "stretch" capacity of the site should be determined in regard to the 70,000 MT limit. Dr. Parry noted that it was likely that the oldest fuel at a utility might not be the first fuel sent to the repository.

Mr. Voiland questioned the cost of extended dry cask storage at reactor sites. Mr. Roberts, NMSS, Dr. Steindler and Mr. Voiland discussed this point at some length. Dr. Moody noted that transportation has not appeared to have been considered as a critical factor.

Dr. Steindler questioned the role of the Committee and the timing of any comment from the Committee. It was indicated, and agreed, that the staff would appreciate it if the Committee could complete its comments during the 9th meeting.

There was a discussion among Dr. Steindler, the consultants, and the staff about the extension of the repository availability date into the first quarter of the next century. Ms. Karen Cyr, OGC, provided an interpretation of the judicial intent which clarified the concerns raised. Ms. Cyr indicated that this draft decision will be reviewed and published by the Commission for public comment. A further review will occur after receipt of the comments and before the decision is finalized. Further, the decision is to be revised in five years. Dr. Parry asked Ms. Cyr if this proposed finding inferred that the regulations could be met. She indicated that the working group's assumption was that a licensed repository would be available. They did not address the question of the practicality of the regulations themselves.

Dr. Moeller questioned the staff as to the scenarios that had been considered. Mr. MacDougall indicated that they were necessarily limited in number and scope. Basically, the alternatives were either the Yucca Mountain site works, or it doesn't, and another site is chosen. The process then is repeated.

Dr. Donald Orth questioned the availability and practicality of the EPA standard. Mr. MacDougall indicated that the revised standard is scheduled to be available in early 1990. It was also stated that few changes in the standard are expected, and that the staff is working to clarify the means of compliance with the standard.

The Committee and its consultants had numerous detailed editorial comments at this point, including suggestions regarding decommissioning and utility bankruptcy.

The Committee went into executive session at 2:45 p.m. to discuss the proposed comments to be included in the draft letter. The Committee recessed at 4:00 p.m.

IV. MEETING WITH THE NRC COMMISSIONERS (Open)

The meeting was reconvened by Dr. Moeller at 8:30 a.m., on Thursday, April 27, 1989. The Committee reviewed the areas of interest to be discussed with the Commissioners. The Committee recessed at 9:10 a.m. to travel to the One White Flint North building, Rockville, MD.

The NRC Commissioners and the Committee discussed the following topics:

- Anticipated ACNW Activities
- West Valley Demonstration Project
- Design Acceptability Analysis for the Exploratory Shaft Facility
- Greater-Than-Class-C Low-Level Radioactive Waste
- Scoping Study Probabilistic Risk Assessment for the Yucca Mountain Site
- Management of Mixed Hazardous and Low-Level Radioactive Wastes
- Nuclear Waste Technical Review Board

[In accordance with Memorandum for Parler from Chilk, June 9, 1989, regarding Staff Requirements, a transcript was provided to the ACNW by the Office of the Secretary of the Commission as the record for this portion of the meeting. The transcript is attached as Appendix V.]

The meeting was adjourned at 11:10 a.m. by Chairman Zech.

V. DISPOSAL OF MIXED WASTES (Open)

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

Two presentations were made on this topic, one by the NRC staff, the other by a representative of the NUMARC.

A. NRC Staff Presentation

Mr. Daniel Martin, Low-Level Regulatory Branch, NMSS, discussed the NRC-EPA preparation of joint guidance documents for the dual regulation of mixed wastes, which is the term used to designate a hazardous (toxic) chemical waste (under EPA jurisdiction) containing low-level radioactive waste (under NRC jurisdiction). He said that, to date, three joint guidance documents have been issued -- one on definition, one on siting, and one on facility design. Current efforts are being directed toward four other joint guidance

documents: (1) waste characterization, which has been drafted by EPA, (2) inspection, being drafted by NRC, which is almost complete, (3) storage, which is being prepared by an EPA contractor but has no scheduled completion date, and (4) licensing/permitting (NRC/EPA), whose reactivation is under way but which also has no scheduled completion date. For clarification, Mr. Martin answered a question from Dr. Steindler by stating that joint guidance documents are statements of position signed by both agencies to provide guidance for the dual regulation of mixed wastes.

After summarizing NRC/EPA correspondence from September 1988 to April 1989, recent mixed wastes meetings from July 1988 to April 1989, and the interim status and state mixed wastes authorizations, Mr. Martin said that the major perceived mixed wastes issues are:

1. 100 gram minimum sample size in the toxicity characteristic leaching procedure.
2. Land-ban storage restrictions for solvents, dioxins, and halogenated organic compounds.
3. Required testing at disposal sites, and by mixed waste storage and treatment facilities.

He added that there is currently no scheduled date for agreement between NRC and EPA on the mixed waste issue in general.

Mr. Martin concluded by stating that:

1. The issue of mixed wastes is on the agenda for the next NRC/EPA Interface Council meeting, a 2-year old chartered group between the two agencies that deals with all interactions such as air quality and below regulatory concern, not just mixed wastes.
2. The NRC's mixed wastes guidance is budgeted at 0.5 FTE in FY 1990 and FY 1991.
3. Mixed wastes disposal capability is included in plans for LLW disposal sites in Illinois, Nebraska, Nevada, Pennsylvania, and Texas toward which all are actively moving.
4. One utility (Toledo Edison) was fined by EPA for storing PCB and Cs-137 for more than one year at the Davis-Besse Nuclear Power Plant site.

B. NUMARC Presentation

Mrs. Lynne Fairbent, NUMARC, briefed the Committee on the contents of a report that will be available in late June 1989. The report

will address the management of mixed low-level radioactive wastes in the commercial nuclear power industry.

Mrs. Fairobent described NUMARC's mission, purpose, and organization, as well as operational and technical interfaces with NRC and utilities, owners groups, and industry associations. Mrs. Fairobent discussed the NUMARC mixed waste task force. It consists of representatives from 15 utilities, 10 consultant organizations, 3 liaison agencies (NRC, DOE, and EPA), and 3 other industry organizations (Utility Nuclear Waste Management Group, the Electric Power Research Institute, and the Atomic Nuclear Energy Council).

After defining mixed wastes and hazardous wastes, Mrs. Fairobent described the task force's methodology for estimating mixed wastes generation rates at nuclear power plants, including pertinent limitations, cautions, and conservative assumptions. The results of an example of "as-generated" and "as-disposed" volumes for BWR and PWR nuclear power plants were presented; they were ultraconservative. By applying reasonable changes to the assumptions, more realistic estimates were determined. She also discussed avoiding mixed wastes generation, managing unavoidable mixed wastes, occupational radiation exposures from mixed wastes, and disposal performance assessment.

Mrs. Fairobent concluded by indicating, once again, that the final report on this study is to be issued by the end of June 1989. She also said that the dual guidance documents being developed by NRC and EPA are very critical and useful to NUMARC and the nuclear industry. She recommended that the ACNW hold a 1-2 day meeting, possibly in a workshop format, to discuss with all involved parties the various problem areas related to the mixed wastes issue. (The ACNW subsequently agreed to convene a Working Group session on this subject in August 1989.)

VI. SUMMARY OF THE SCP REVIEW AND PREPARATION (Open)

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

(Note: This topic was addressed in the Working Group meeting held on April 19, 1989.)

Mr. Robert Browning, Division of High-Level Waste Management (HLWM), reviewed recent progress in reviewing DOE's Site Characterization Plan (SCP) and in preparing the Site Characterization Analysis (SCA). He noted that briefings had been provided to the Committee on the staff's SCP review plan and that the program was essentially on schedule. He summarized the staff's current activities and stated that a branch level draft of the SCA point papers would be available for review by the Committee prior to the 10th ACNW meeting on May 11, 1989.

Dr. Moeller noted that the Committee plans to have individual consultants review specific portions of the staff's point papers. The consultants will then report on their findings during the 11th ACNW meeting on June 13, 1989. A letter summarizing the Committee's comments will be provided to the staff during or before the 12th ACNW meeting on June 28-30, 1989.

Mr. Browning generally supported that approach, but expressed the hope that the Committee would inform the staff of major problems or questions as they arose, rather than deferring discussion of them to the later stages of the review.

Dr. Steindler asked if the review program was defined in scope and actions by a plan. Mr. Browning said that it was. Additionally, he noted that the experience gained in reviewing the Consultation Draft SCP had been used to modify the original plan. Most particularly the review plan calls for the integration of comments from various technical disciplines to produce a self-consistent document. Mr. Browning also noted that the staff plans to interact with both DOE and the state of Nevada.

Dr. Moody questioned the staff's capability to take into account ACNW comments that might not be available until June 30th when the staff plans to submit the final SCA to the Commission on the 30th also. Mr. Browning expressed the hope that the continuing liaison between the HLWM and ACNW staff's would enable the HLWM to respond to the major portion of the Committee's comments before they were formally submitted.

Dr. Steindler suggested that the ACNW should formalize its approach to, and plan for, reviewing the staff's development of the SCA. (Note: This was agreed to and Dr. Steindler provided a memorandum to that effect at the 10th ACNW meeting.)

In closing, Dr. Stablein, HLWM, provided further details of the staff's proposed actions.

The Committee went into executive session at 4:25 p.m. to discuss the proposed comments to be included in the draft letters. The Committee recessed at 5:35 p.m.

VII. BELOW REGULATORY CONCERN POLICY STATEMENT (Open)

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

The meeting was reconvened by Dr. Moeller at 8:30 a.m., on Friday, April 28, 1989.

Mr. William LaHS, Office of Nuclear Regulatory Research (RES), briefed the Committee on the current status on the proposed NRC Policy Statement on Exemptions from Regulatory Control. Mr. LaHS noted that the title was changed so that it no longer includes the term, Below Regulatory Concern

(BRC). The Research Draft Revised Policy Statement which had been sent out to the various NRC offices for concurrence and comments was the latest draft provided to the Committee for review. It was also the same draft used by RES in a recent meeting with the Environmental Protection Agency (EPA) to discuss the draft policy.

Mr. Lahs said that over 220 comments identifying 20 major issues were received in response to the advanced notice on the proposed policy published in the Federal Register on December 12, 1988. Many comments address the basic philosophy of radiation protection. The comments have been incorporated, to the extent possible, into the current draft of the proposed policy. Summaries and responses to public comments are being developed.

He said that the major policy improvements and clarifications accomplish the following:

1. Emphasize policy applicability to exemption from some or all regulatory controls, and drop the reference to BRC.
2. Clearly state that policy also includes criteria that define when further incremental compliance with the ALARA principle is not warranted.
3. Clarify the concept of what constituted a "practice."

He added that the major policy additions do the following:

1. Explicitly define the need for a policy.
2. Establish that "Justification of Practice" is applicable to all exemption decisions, although a given practice may have already been justified (e.g., within the larger practice by public law).
3. Describe individual and collective dose criteria as providing a two-parameter basis to determine a "floor" for curtailing incremental application of the ALARA principle.

Regarding this last item, Dr. Moeller said that the ACNW is concerned that the NRC staff did not add an additional statement to the effect that when the individual dose increases, the collective dose limit should decrease. Mr. Lahs said that, although such a sliding scale is difficult, he agrees with the ACNW and that they still might include such a statement.

In regard to the NRC's proposed policy position versus the extensive ACNW comments in the December 30, 1988 report to Chairman Zech on this matter, Mr. Lahs said the following:

1. Exclusion of practices from justification -- NRC staff agrees with ACNW's position.

2. Need for collective dose criterion/truncation -- NRC staff agrees on the need, i.e., as individual doses decrease, collective doses may increase. However, the NRC staff wants to keep the policy simple but accomplish the same objective (e.g., consumer products for large population groups result in very small, individual doses but large collective doses).
3. Designation of exemption levels -- NRC staff tried to clarify both ALARA and collective dose criteria; in the case of ALARA it may be more of an administrative than a policy matter.
4. Exposures to multiple practices -- NRC staff agreed that from all exemptions people should not receive a dose approaching the 100 millirem per year limit.
5. Misuse/accident provisions, monitoring, modeling, procedural flexibility -- NRC staff considered a number of comments on these terms. Dr. Moeller had previously emphasized procedural flexibility, with which Mr. Lahs agreed. Mr. Lahs also said that if you have the possibility of misuse or accidents causing significant levels of exposure, such practices would not be conducive for exemption.

Additional highlights of the discussion follow:

1. Dr. Moeller said that the difference in doses due to background radiation, e.g., Washington, D.C. versus Denver, is useful in perspective, but should not be considered in the policy.
2. Dr. Steindler asked if the policy is likely to challenge the Commission's prior position or statement in regard to justification of practice. Mr. Lahs said it would not. Dr. Steindler added that he hoped the policy statement would be short enough and clear enough so that the staff's response to the public regarding this policy could be predictable.
3. Dr. Steindler asked if there is an irreversibility of practices, that is, does the policy take into account long-term dose commitment from practices involving radionuclides with long half-lives? Dr. Steindler expressed concern that impact estimates are unlikely to be measurable (they would have to be calculated) and that if there is any one thing that characterizes the Commission's position, it is irreversibility. Mr. Lahs said that it would be an extremely small problem. Dr. Moeller said that it was nevertheless very important and should have been included, but it was not.
4. Dr. Steindler cited the individual dose rate limit (page 9, paragraph 2, lines 1 and 2 of the preliminary RES draft) which reads, "Individual doses from practices exempted should generally not be allowed to exceed a small fraction of 100 mrem per year." After stating that his basic concern is that the consequences of a more frivolous application of the word "generally" can be irreversibly severe, he recommended that the

limit be set at 10 mrem per year which can, under certain conditions or occasionally (if it can be justified), exceed this value. Mr. Laha responded that the NRC received a number of comments on this point. He expressed personal concern about the consistency of risk-based dose limits set by other agencies which, if not consistent, at least should be explainable.

5. Dr. Moeller recommended that the 7-10 mrem dose which an individual would receive on a single round trip coast-to-coast aircraft flight (page 12, paragraph 1, lines 4 and 5) be replaced with 2-3 mrem to be consistent with values in some of the NCRP reports.
6. Mr. Voiland expressed concern about the public's perception of dose limits, percentages, fatality figures, which the public really cannot relate to. For example, if you talk about 10 millirem, most people do not know what that means; some might mean that as 5 to 10 percent of natural background radiation and consider it too high. He said, in effect, that the policy statement should be understandable and acceptable to the general public. Mr. Laha responded that, to do that and not mislead, it has to be done very carefully.

VIII. EXPEDITED HANDLING OF PETITIONS FOR DISPOSAL OF RADIOACTIVE WASTE STREAMS BELOW REGULATORY CONCERN (Open)

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

Mr. Donald R. Hopkins, RES, briefed the Committee on this topic. He explained that this subject is presently independent of the proposed Policy Statement on Exemptions from Regulatory Control discussed above. The policy under which this matter is regulated is Appendix B to Part 2, "General Statement of Policy and Procedures Concerning Petitions Pursuant to Paragraph 2.802 (Petition for Rulemaking) for Disposal of Radioactive Waste Streams Below Regulatory Concern," which was published in the Federal Register on August 29, 1986 (51FR30839). He said that the 1986 policy statement states basically that petitioners for exemptions of such waste streams can get expedited handling from the Commission if, in fact, they supply all the information that is necessary for the staff to process and approve the petitions.

He went on to say that, at a meeting of the various members of the staff who will be implementing this policy in preparation for NRC's expected receipt of a large petition from NUMARC (originally expected last January, now expected in June), they discovered that there were parts of the policy statement that NRC would have difficulty implementing, particularly the time restraints in the petition within which the staff is required to propose a rule to the Commission in response to the petition. Paraphrasing a portion of "IV. Administrative Handling" in the implementation supplement to Appendix B, Mr. Hopkins said that the proposed rules to satisfy expedited handling petitions will be forwarded to the Commission on a 6-month schedule to the extent

permitted by resource limits, comments and approval procedures, with an extra 30 days permitted for the Committee to Review Generic Requirements (CRGR) review when necessary -- which makes it essentially a 7-month schedule. He said that since the normal process used by the staff for responding to petitions is not adequate to respond to the 6-month time period requirement, the staff is proposing a 210-day (7 month) time line for expedited handling of such petitions. This time line starts at minus 40 days when the petition is received and the determination is made that it is legally and technically sufficient, for docketing. Time zero then starts with the publication of the Notice of Petition Receipt for Public Comment. ACNW's proposed role would be to be briefed by the staff on the petition (potential rulemaking) at 60 days. Copies of the proposed rule would, if changed in the interim, be provided to the ACNW at 130 days and to the Commission at 210 days.

In response to a question by Dr. Moody to Dr. Moeller about why the ACNW should be involved in this activity, Dr. Moeller said that the Committee should be involved with the first few petitions which will be dealing with waste streams from nuclear power plants, and consideration of exempting them. He said it might be that after they have looked at some, they could either provide general approval or agree with the staff on how to proceed with the others.

In response to the proposed schedule and after a relatively short discussion of it, Dr. Moeller said that the ACNW would like to have two briefings. The initial one would be at 60 days as scheduled; the second one would be between 100 and 130 days so, even if the proposed rulemaking package is not changed as a result of comments reviewed and analyzed between 100 and 130 days, the Committee would have the opportunity to be briefed on the public comments and how the staff responded to them, which is important for the Committee to know. Mr. Hopkins said that by doing it this way they would get the biggest part of the briefing out of the way early, followed by an analysis of the public comments at the later time. Dr. Moeller added that the second briefing would, hopefully, be short and simple. Mr. Hopkins said that it would be adequate for this request to appear in the minutes of this meeting.

IX. LICENSING SUPPORT SYSTEM (LSS) (Open)

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

A. Background and Provisions of the Rule

Mr. Francis "Chip" Cameron, OGC, briefed the Committee on the background of the rulemaking and provisions of the rule on the Licensing Support System (LSS) for the High-Level Waste (HLW) Repository. Mr. Cameron said he was the Project Manager on the LSS rulemaking.

He said that the Commission approved the rule on November 3, 1988 and that the LSS rulemaking appeared as a final rule in the Federal

Register on April 14, 1989. The rule adds a new Subpart J to 10 CFR Part 2, which contains the rules of practice for Commission licensing proceedings. The LSS rulemaking establishes the procedures for the HLW licensing proceeding including the use of a full text electronic information management system, which is the LSS in the proceeding.

Mr. Cameron said that the LSS concept had its genesis in 1983 when there were a number of concerns expressed by the NRC staff and others over documents for the HLW licensing proceeding. The Nuclear Waste Policy Act requires the Commission to rule on the construction authorization three years after DOE submits a license application. There was considerable concern about how the NRC was going to meet this schedule, and how the resulting multi-million page data base could be handled. The licensing of the HLW facility will involve a large number of novel and complex technical issues where enormous amounts of research data will be generated not only by DOE and NRC, but also by the state of Nevada and possibly other groups.

Mr. Cameron said that, based on an OGC study of past nuclear power plant licensing cases where it took an average of 5 to 6 years to conduct an operating license (OL) proceeding, it was found that most of the time was devoted to document discovery. He explained that "discovery" is a legal term wherein both sides have the opportunity to learn about the other side's information pertaining to the case so that there are no surprises to either side during the hearing and so that each side can prepare the most thorough case in the filing of motions to obtain documents, responses to the motions, counter-responses, the delivery of the documents, sorting through and deciding which documents are relevant, searching the documents for the information desired, etc., all of which have to take place during the proceeding (i.e., after submission of the license application). Since the NMSS technical staff determined that the existing NMSS document management procedures would be inadequate for the HLW licensing proceedings, NMSS began a pilot project using an electronic full-text-search and retrieval system. The above and other concerns resulted in an agreement, in principle, between the NRC and the DOE. In 1984 an agreement was signed between these two agencies to develop the LSS.

Mr. Cameron explained that the major objectives of this program are:

1. To make available to potential parties to the proceeding, including NRC and DOE, pertinent data and information in advance of the hearing proceeding.
2. To provide for the efficient identification and review of technical documents by the NRC staff and others throughout both the prelicensing and licensing phases.

3. To reduce hearing time by providing for the electronic submission of pleadings during the hearing.
4. To ensure that all the relevant documents for the proceedings are identified by having a quality assurance (QA) function as part of the LSS.

Mr. Cameron said that the Commission used the negotiated process for this rulemaking. He said negotiated rulemaking has been used successfully many times by other agencies (e.g., FAA, EPA, and DOA), but that this was the first time for NRC. Negotiations began in September 1987 and were completed in July 1988 with seven participating groups involved in its compilation following the passage of the NWPA (Amendments) Act of 1987, which reduced the number of sites from three to one, Yucca Mountain, Nevada. The seven members of the Negotiating Committee were: (1) NRC, (2) DOE, (3) State of Nevada, (4) local Nevada governments, (5) national environment groups, (6) the National Congress of American Indians representing Indian tribes, and (7) an industry coalition composed of utilities and nuclear equipment vendors.

All parties except the industry coalition reached consensus on the proposed rule. Industry's objection was that they did not believe that the benefits of the LSS would outweigh its costs and would therefore not result in the elimination of licensing delay. However, a cost-benefit study by DOE concluded that the LSS would cost approximately \$200 million to build and operate during the entire period critical to the issuance of the construction authorization. The analysis also showed that the savings to utilities and taxpayers for each year of licensing delay saved by the use of the LSS would also be approximately \$200 million. So if only one year of delay were eliminated, the use of the LSS would pay for itself.

Dr. Moeller asked if the Yucca Mountain site was found to have a "fatal flaw" and therefore eliminated from further consideration, would the negotiated rulemaking have to be repeated to start up a new LSS for the new sites that would be selected. Mr. Cameron said that the current rule was written in terms of the likely candidate site for the repository so, although it is focused on the Nevada site, the same rules would apply if another site was selected. There would, however, have to be some backfit to capture documents for the new site.

Mr. Cameron identified and discussed the two basic components to the rule: (1) provisions relating to the use of the LSS, and (2) non-LSS provisions that have to do with the hearing proceeding. This part of his presentation discussed the type of documents that would and those that would not go into the system, the use of "headers" for identification of documents that an involved party may

wish to search, how so-called "privileged documents" such as personal notes will be handled, etc.

He then discussed what he said was a big part of the rule, i.e., who has to submit documents for entry into the LSS and what the initial cutoff date is for such documents. The DOE, NRC, and the state of Nevada will be the principal entities in this regard.

Mr. Cameron explained that all documents will be submitted to the new NRC Office of the LSS Administration, which office is totally separate from the NRC/NMSS staff and which is designated in the rule itself. The function of this office is to provide oversight responsibilities for all parties to the proceeding, including the NRC/NMSS staff. In response to a query by Dr. Steindler regarding the rationale for establishing this office, Mr. Cameron explained that, originally the DOE was designing the system because at that time they had sole access to the Nuclear Waste Fund. But now that a portion of that Fund is available to participants in the program other than DOE, the system will be administered by the NRC in a neutral capacity. DOE will still design the system in cooperation with the LSS Administrator (with input from an advisory review panel). This arrangement also assuages the concerns of the State of Nevada and environmental groups that their documents would be placed into a system that the license applicant (DOE) would be controlling.

The major LSS provisions discussed by Mr. Cameron were:

1. The NRC Steering Committee, of which he is chairman, and whose function it is to coordinate the NRC concerns and interests on the LSS. The committee is currently drafting the procedures that the NRC staff will use to determine what documents will go into the system, i.e., to make sure that all relevant documents are captured.
2. A Memorandum of Understanding with DOE on how the coordination between DOE and NRC will take place.
3. Access to the system -- people or organizations who qualify as potential parties will have access to all the documents that are in the system during the prelicense application phase. And, if they qualify as a party in the hearing, they will have access to all of the documents during the proceeding.
4. The setting up of a Prelicensing Application Licensing Board that will rule on requests for access to the system and to rule disputes on whether a document is relevant, and whether it is privileged. He added that the public will essentially be excluded from full-text access to the system during the prelicensing phase.

5. In response to a question from Dr. Steindler, Mr. Cameron said that for every electronic copy in the system there will be a hard copy available somewhere, including the filing of the pleadings during the hearing, which are required by the rule to be submitted to the Secretary of the Commission.
6. Compliance provisions in the rule that require that the LSS Administrator: (a) evaluate DOE's compliance with the document submission requirements of the rule six months after his or her appointment, and at six-month intervals thereafter, and (b) certify that DOE is in compliance with the rule at least six months before DOE submits any license application.
7. Participation in the hearing as a party requires that the LSS rules be followed. The LSS will be used during the hearing for electronic transmission and for on-line access.

Mr. Cameron mentioned two non-LSS provisions:

1. Appeals from a Licensing Board decision, which is mainly aimed at contentions where, if a contention is not allowed immediately when made by a Licensing Board, one must wait until the Licensing Board issues its initial decision before that contention goes to the Appeal Board. And, if the Appeal Board finds that the contention should have been allowed, one must go all the way back for a Licensing Board proceeding.
2. Once the Licensing Board has made a decision on the construction authorization making it immediately effective, if there is not a stay granted by the Appeal Board and if the Commission reviews it under its immediate effectiveness rule, the construction authorization will be granted while the appeal process proceeds. He said that this is a change from the existing rule.

B The LSS Computer Based Information Management System

Mr. Avi Bender, Office of Information Resources Management, briefed the Committee on the design and implementation of the LSS by NRC and DOE. He started by reemphasizing the more salient features of the system, i.e., that it:

1. Is a computer based information management system now defined in 10 CFR Part 2.
2. Provides comprehensive and early access to documents.
3. Offers full-text search and image retrieval.
4. Provides electronic mail (E-mail) capability during the licensing process.

He pointed out that its principal attributes are that:

1. It contains relevant documents of all parties.
2. All parties have full-text access.
3. The system will be available before license application, i.e., during the prelicensing application phase.
4. Motions can be filed electronically.
5. It provides for quality assurance and quality control (QA/QC) for data management.

Reiterating what Mr. Cameron said, he said that the Part 2 changes provide information and instruction on discovery, intervention, immediate effectiveness, and appeals.

Mr. Bender described the NRC LSS organization, emphasizing that the LSS Administrator will report directly to the NRC Chairman, essentially providing guidance to that office, and administering, operating, and maintaining the system. DOE's responsibility will be to design, develop, and ultimately redesign the system, as necessary. He also emphasized that an Advisory Review Panel (ARP), DOE, NRC, State of Nevada, Indian tribes, industry, the University of Nevada at Las Vegas, and possibly others will all be involved in coordinating activities with the NRC LSS Administrator. ARP will be composed of representatives from each of these groups. In addition, the NRC has an LSS Steering Committee whose role was described above by Mr. Cameron.

In regard to the projected LSS data base from 1990 to 2009, the life cycle of the system, Mr. Bender said that approximately 50 million pages will be entered into the system (according to DOE estimates). NRC is now and will continue to be responsible for reviewing much of that information, which is one of the reasons for the need of the LSS; another principal reason is the need for retaining corporate memory.

Mr. Bender said that as of March 10, 1988, DOE's Office of Civilian Radioactive Waste Management (OCRWM) automated record system data base contained 113,088 documents having a total of 657,300 pages. Of this total, 62% are correspondence, 26% are reports, 6% are publications, 3% are governing documents, and the remaining 3% are graphics, procurement, raw data, and legal documents. He commented that there are essentially nine sources of NRC's portion of the LSS data base, including NMSS, RES, ACNW, OGC, Commissioners (SECY), etc.

Mr. Bender described the base conceptual design hardware architecture which consists of three major components as follows:

1. The Capture System: Documents will be captured by a scanning device to capture the images of the documents. It may have a mini-computer, storage devices (such as tape and optical disks), a station for text conversion, and it will be receiving word processing files from all documents.

Capture stations will be located at DOE, DOE's Las Vegas office, NRC, State of Nevada, environmental groups, and Indian tribal organizations.

2. The Search System: The mainframe system that will probably be housed at the University of Nevada at Las Vegas. Users will be able to access the search system through local Personal Computer, do a full-text search, and retrieve the images. The mainframe system will contain full-text indices to the headers, bibliographic citations (that will allow users to narrow their search to potentially relevant documents), structural indices, and electronic images of documents.

3. The Image System: Consists of tape and optical disks of images, bit maps containing images of all pages (with a juke-box-type controller interfacing with it that can be used for central image printing and work stations. There will be two types of work stations from which the images and texts will be retrieved. These are referred to as Levels 1 and 2. Level 1 refers to a personal computer, which may allow communication with other data bases, do a full-text search, but not display any graphic images. Level 2 will have the same capability, plus a high-resolution monitor and a series of boards within the PC that will display graphic images. Level 2 stations will not be available for some time.

He said that the three systems, which constitute the LSS, will be linked together by a communications network and a local area network with various types of PCs and high-resolution graphic terminals. Final systems integration is expected to be completed and available for users in the 1991-1992 time frame, although it will not be complete with all the information by that time. The capturing of the backlog of information that needs to be put into this system will start in 1990 and is scheduled to be completed by 1994, along with the continuing entry of current information. As stated earlier, the NRC LSS Administrator is to certify that the LSS is complete (fully operational) and ready six months prior to DOE's submittal of their license application, which is scheduled for 1995.

Dr. Steindler expressed concern about the proposed uninterrupted operation of the LSS for long periods of time. Mr. Bender cited the Lexis system, which has over seven gigabytes of information in it and operates 24 hours a day for extended periods of time. This is possible because Lexis has back-up and control mechanisms in place to eliminate such eventualities. The LSS will be designed to provide that kind of reliability.

Dr. Steindler expressed interest in the type of equipment DOE plans to use to provide high-resolution, such as microphotographs of corrosion interfaces. Mr. Bender said that the technology is available to give high-resolution images, but it has not yet been decided whether that technology will be incorporated into this system. If high resolution is required, examination of the original photographs might be better.

Dr. Steindler asked what constitutes an acceptable quality assurance (QA) aspect of a particular data package. More specifically, how can one know, in advance, what kind of quality rating a particular set of data has. Mr. Bender said that NRC has not actually looked at that aspect, but he believes it to be very worthwhile as NRC reviews the DOE documents to consider the QA aspect.

Dr. Steindler also asked about how LSS would treat older, very important pertinent information in a foreign language. Mr. Bender said, from a technical point of view, it could be done although it may be necessary to have it translated into English. According to Mr. Cameron, from a legal point of view, it would have to be translated. If it were introduced as new information during the proceeding, although it would be difficult to do, translation could be done at that time.

X. EXECUTIVE SESSION (Open/Closed)

A. Reports, Letters and Memoranda (Open)

1. The Committee completed letters on the following subjects:

Draft Technical Position on Postclosure Seals in an Unsaturated Medium (Letter for Chairman Zech dated May 3, 1989)

The Committee offered comments on the five areas:

- a. The draft technical position needs to be expanded to explicitly address such factors as seismicity, tectonics, and long-term changes in geology, hydrology, and climate.

- b. The draft technical position should include a statement addressing the backfill materials for shafts and seal cements for boreholes that would provide additional protection against unanticipated events.
- c. The rationale to support the position that outflow of radioactive gases could be significant should be provided.
- d. Because fracture flow may prove significant, its potential impact on the performance requirements for the barriers needs to be addressed.
- e. The title of the draft technical position should reflect that the closures might be better characterized as "barriers" rather than "seals."

Proposed Waste Confidence Decision by the Waste Confidence Review Group (Letter for Chairman Zech dated May 3, 1989)

The Committee concluded that the report appears to be technically sound. The Committee endorsed both the expanded application of the generic approach to the majority of nuclear power plants and the incorporation into the proceedings of a more realistic timetable. The Committee continues to have concerns about the ability of the NRC staff to confirm that the repository complies with the probabilistic standards developed by the U.S. Environmental Protection Agency.

Proposed Commission Policy on Exemptions from Regulatory Control (Letter for Chairman Zech dated May 3, 1989)

The Committee stated that the latest version of the proposed Policy Statement has successfully addressed a number of formerly unresolved issues and identified four areas that still need to be strengthened and/or clarified.

Management of Mixed Hazardous and Low-Level Radioactive Wastes (Letter for Chairman Zech dated May 3, 1989)

The Committee concluded that the problems associated with the development of a joint NRC/EPA regulatory approach for licensing facilities for the disposal of mixed wastes are primarily institutional. The Committee provided four comments that will serve as a stimulus for the development of approaches for resolving these problems.

2. In response to an inquiry during the meeting with the Commissioners on April 27, 1989, Dr. Moeller completed a memorandum to

Commissioner Curtiss on the Activities of the Nuclear Waste Technical Review Board. (May 5, 1989)

The memorandum outlines the differences between the functions of the NWTRB and those of the ACNW.

3. The Committee completed a memorandum to Mr. Victor Stello, Executive Director for Operations, on ACNW Meeting Follow-up Items. (May 1, 1989)

The memorandum expresses the Committee's appreciation to the NRC staff or their efforts to keep the Committee informed.

4. The Committee discussed a draft of a letter to Dr. Forrest Remick, ACRS Chairman, on the separation of activities of the two Committees. Mr. Fraley was directed to make the draft available to Dr. Remick.

B. Future ACNW Activities

1. Site Visits (Open)

The Committee agreed to review the programs of the Center for Nuclear Waste Regulatory Analyses (CNWRA) in the near future. The Committee does not plan to visit the Center anytime soon.

The Committee reconfirmed its intention of visiting the West Valley Demonstration Project in October 1989.

2. ACNW Meeting Schedule for 1989 and 1990 (Open)

Dr. Moeller requested that ACNW Members be asked to indicate their availability to attend future meeting during the last three months of 1989 and during calendar year 1990.

3. Scoping PRA Study (Open)

The Committee requested that an expert be invited to present a briefing on the development of a scoping study PRA for Yucca Mountain.

4. Design Acceptability Analysis Report (Open)

The Committee invited Mr. Voiland to discuss the Design Acceptability Analysis Report at a future meeting.

5. Rulemaking Activities (Open)

The Committee discussed the proposed schedule for conduct of rulemaking activities associated with the High-Level Waste Program for FY 1989. The ACNW expressed interest in participating in a number of the ongoing rulemakings. The Committee requested that Mr. Blaha, Assistant for Operations, be advised of the Committee's interest.

The Committee also expressed interest in learning more about rulemaking on the disturbed zone and pre-waste emplacement ground water travel time before deciding if it wants to be involved

6. Review of SCP/SCA (Open)

The Committee assigned consultants to review individual portions of the Site Characterization Analysis in preparation for the May and June ACNW meetings:

<u>SUBJECT</u>	<u>CONSULTANTS</u>
Geology	W. Hinze
Hydrology/Geochemistry	J. Moody
Engineering (ESF)	C. Siess (tentative)
Waste Package	P. Shewmon
Performance Assessment	P. Pomeroy
Quality Assessment	E. Voiland

The Committee agreed to examine the following questions while reviewing the SCA/SCP:

- * Are the high priority items of concern to the staff related to the most important site characteristics?
- * How important is it that the NRC objections be resolved? Can the objections be resolved in ways other than those proposed by NRC? What are the technical bases for the NRC objections?
- * Are there any "fatal flaws" being overlooked?

C. Future Agenda

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

The 9th ACNW meeting concluded at 4:00 p.m. on April 28, 1989.

APPENDICES

- I. MEETING ATTENDEES
- II. FUTURE AGENDA
- III. OTHER DOCUMENTS RECEIVED
- VI. ACNW LETTERS REPORTS
- V. TRANSCRIPT OF ACNW MEETING WITH NRC COMMISSIONERS, 4/27/89

APPENDIX I - ATTENDEES

9TH ACNW MEETING
APRIL 26-28, 1989

ACNW MEMBERS:

Dr. Dade W. Moeller

Dr. Martin J. Steindler

ACNW CONSULTANTS:

Dr. William J. Hinze

Dr. Judith B. Moody

Dr. Donald A. Orth

Mr. Eugene E. Voiland

APPENDIX I - 9TH ACNW MINUTES

APPENDIX I - ATTENDEES (CONT'D)

NRC AND CONTRACTORS

G. Lear
D. Cool
J. Lyash
D. Hopkins
W. Lahs
C. Mattsen
M. Lopez-Otin
F. Cameron
A. Bender
D. Martin
P. Justus
S. Coplan
R. Ballard
J. Bunting
J. Buckely
J. Peshel
B. Thomas
D. Gupta
J. Wolf
M. Nataraja
K. Cyr
C. Prichard
S. Burns
J. Greeves
S. Hsiung - CNWRA
N. Brown - CNWRA
S. Spector - CNWRA
P. LaPlanta - CNWRA

DOE AND CONTRACTORS

R. Jackson - Weston
E. Regnier
S. Brocoum
R. Lark
H. Minwalla - Weston/Jacobs (Licensing)
P. Sobel - Weston
P. Berger - Energetics Inc.
A. Kimmins - Weston
J. Blair - Weston

U.S. GEOLOGICAL SURVEY

R. Wallace - USGS-HQ/DOE-HQ
G. Roseboom

STATE OF NEVADA

L. Lehman

U.S. ENVIRONMENTAL PROTECTION AGENCY

B. Shackelford
S. Rudzinski

PUBLIC

S. Sharron - SERCH
P. Austin - SAIC
F. Killar - USCEA
E. Helminski - The Radwaste Exchange
D. Caldwell - Golden
P. Krishna - Battelle
D. Hill - HLHC
B. Farrell - EEI - UWASTE
L. Fairbent - NUMARC
B. Watson - Baltimore Gas & Electric
E. Miller - Afton Associates

D. D'Arrigo - NIRS
M. Byrne - State of California
M. Bauser - N&H
J. Daemen - Univ. of Arizona
T. Timmons - Westinghouse
M. Hawkins - ICF
C. Henkel - EEI/UWASTE

APPENDIX II
FUTURE AGENDA

10th ACNW Meeting on May 11, 1989

Update on the Site Characterization Plan (Open) - The Committee will be briefed on the status of the NRC review of the SCP and will review selected sections of the Branch Draft Site Characterization Analysis (SCA).

Final Technical Position on Environmental Monitoring (Open) - The Committee will be briefed on the final technical position of environmental monitoring of LLW disposal facilities.

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

11th ACNW Meeting on June 13, 1989 (tentative schedule)

Site Characterization Analysis (SCA) (Open) - The Committee will be briefed on the status of the NRC review of the Site Characterization Plan (SCP) and will continue its review of the SCA.

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

12th ACNW Meeting on June 28-30, 1989 (tentative schedule)

Waste Management Research Program and Strategy Plan (Open) - The Committee will be briefed on the HLW and LLW research programs, including the activities of the Center for Nuclear Waste Regulatory Analyses.

Status of Cementitious Waste Forms (Open) - The Committee will be briefed on the status of cementitious LLW forms and the reporting of mishaps involving LLW forms prepared for disposal, SECY-89-116, (H. Thompson).

Site Characterization Analysis (Open) - The Committee will finalize comments on the SCA/SCP, if not completed on June 13, 1989.

Greater-Than-Class C Radioactive Wastes (Open) - The Committee will be briefed on the DOE storage and disposal of Greater-Than-Class C radioactive wastes.

13th ACNW Meeting on July 26-27, 1989 (tentative schedule)

Meeting with the Commission (Open)

APPENDIX II - 9TH ACNW MINUTES

Performance Assessment (Open) - The Committee will be briefed on the NRC approach to performance assessment and status of (internal) activities (NMSS/RES Memorandum of Understanding).

EPA Low Level Waste Standards (Open) - The Committee will be briefed on radionuclide release standards for LLW disposal sites.

Status of NRC/DOE Interactions on DOE Quality Assurance (Open)

14th ACNW Meeting on September 13-15, 1989 (tentative schedule)

Retrievability Demonstration (Open) - The Committee will be briefed on the Technical Position on demonstration of retrievability during site characterization.

Tectonic Models (Open) - The Committee will be briefed on the technical position on tectonic models.

Data Availability (Open) - The Committee will invite representatives of DOE and USGS to discuss problems related to delays in making data available and coming to closure.

Meeting with Director of Office of Nuclear Reactor Regulation (NRR) (Open) - The Committee will be briefed by NRR on the licensing program for LLW handling systems, fuel compaction, decontamination and decommissioning. The Committee will discuss any crossover issues with representatives of NMSS and the EDO.

APPENDIX III - OTHER DOCUMENTS RECEIVED

A. Meeting Handouts from ACNW Staff and Presenters

AGENDA
ITEM

II. Technical Position on Postclosure Seals in an Unsaturated Medium

1. Draft Technical Position on Postclosure Seals in an Unsaturated Medium, April 26, 1989, by D. Gupta, NMSS
2. Summary of Public Comments on Draft Technical Position on Postclosure Seals in an Unsaturated Medium, April 26, 1989, by J. Buckley, NMSS
3. Memorandum for Major from Linehan, April 19, 1989, re Transmittal of Public Comment Resolution Regarding Draft Technical Position on Postclosure Seals in an Unsaturated Medium, with enclosure

III. Preliminary Findings of the Waste Confidence Review Group

4. Memorandum for ACNW Members from Parry, dated April 25, 1989, re Draft Summary - ACNW Working Group Meeting, April 19, 1989, with attachments
5. Summary/Discussion on Waste Confidence, West Valley Project, Status of SCP/SCA Review, by D. Moeller (Meeting Handout #4)
6. Memorandum for the File from Voiland, April 26, 1989, re Commentary on Preliminary Draft - Proposed 1989 Waste Confidence Decision - Prepared by Waste Confidence Review Group, April 17, 1989
- 6a. 10 CFR Parts 50 and 51, Federal Register Notice, Friday, August 31, 1984

V. Disposal of Mixed Waste

7. Letter for All NRC Licensees from Knapp, October 24, 1988, re Clarification by EPA of Requirements for Facilities that Treat, Store or Dispose of Radioactive Mixed Waste to Obtain Interim Status Pursuant to Subtitle C of the Resource Conservation and Recovery Act (RCRA)
8. NRC-EPA Joint Guidance Documents, April 27, 1989
9. Package of 12 documents entitled "Disposal of Mixed Waste" (Meeting Handout #7)

APPENDIX III, MEETING HANDOUTS, 9TH ACNW MEETING

10. The Management Mixed Low-Level Radioactive Waste in the Commercial Nuclear Power Industry, by NUMARC, April 27, 1989

VI. Summary of the SCP Review and Production of the SCA

11. Schedule of Major SCP Review Activities, undated

VII. Below Regulatory Concern

12. Proposed Policy Statement on Exemptions from Regulatory Control, April 28, 1989

13. Scheduling of BRC Petition Submitted for Expedited Handling Under 10 CFR Part 2, Appendix B, undated

VIII. Licensing Support System

14. Memorandum for ACNW Members from Merrill, April 26, 1989, Licensing Support System, with attachments (Meeting Handout #2)

15. Licensing Support System for the High-Level Waste Repository, April 27, 1989, by A. Bender and F. Cameron

IX. Executive Session

16. Additional Future Agenda Items (Meeting Handout #1)

17. The Health Physics Society's Newsletter, Vol. XVII, No. 4, April 1989 (Meeting Handout #3)

18. Letter for Moeller from Stein April 25, 1989, re USGS Data Availability and Transmittal (Meeting Handout #5)

19. Documents Provided by DOE in Response to ACNW Requests Made During the February 23, 1989 ACNW Meeting (Meeting Handout #6)

20. Memorandum of Understanding Between Office of Geologic Repository Deployment (DOE) and U.S. Geological Survey (USGS), U. S. Department of Interior, Related to the DOE Office of Civilian Radioactive Waste Management Program (Meeting Handout #8)

21. Administrative Session (Meeting Handout #9)

22. NRC Organization Chart, undated

APPENDIX III (CONT'D)

B. Meeting Notebook Contents Listed by Tab Number

TAB

1. Schedule and Outline for Discussion
2. Index
2.
 3. Status Report on Draft Technical Position on Postclosure Seals in an Unsaturated Media
 4. Memorandum for Major from Linehan, March 31, 1988, re Transmittal of Draft Technical Position on "Postclosure Seals in an Unsaturated Media," with attachments
3.
 5. Status Report on Waste Confidence Finding, April 12, 1989
 6. Viewgraphs from Briefing of ACNW Working Group on April 19, 1989
 7. Memorandum for Moeller from Bernero, April 17, 1989, re Preliminary Draft of Waste Confidence Review Group Proposal Waste Confidence Decision, with attachments (Official Use Only)
 8. Memorandum for ACNW Members from Parry, November 10, 1988, re Waste Confidence Rulemaking, with attachments
 9. Memorandum for Zech, et al., from Parler, September 9, 1988, re Establishment of Review Group for Review of the Commission's Waste Confidence Proceedings' Findings
 10. SECY-88-343, Plan for Five-Year Review of Waste Confidence Findings, December 15, 1988
5.
 11. Memorandum for Smith from Parry, April 17, 1989, re Commission Briefing Package - West Valley Demonstration Project, with attachment
 12. Memorandum for Steindler from Parry, April 17, 1989, re Commission Briefing Package - GTCC Rulemaking, with attachments
 13. SECY-89-083, Department of Energy Storage of Surplus Sealed Sources Exceeding Part 61 Class C Concentrations, March 8, 1989
 14. Memorandum for ACNW Members from Parry, March 17, 1989, re Commission Briefing on Greater Than Class C Rulemaking - March 15, 1989, with attachments

APPENDIX III, NOTEBOOK CONTENTS, 9TH ACNW MEETING

15. ACNW Letter for Zech from Moeller, February 24, 1989, re Final Rulemaking on 10 CFR Part 61 Relative to Disposal of Greater-Than-Class-C Low-Level Radioactive Wastes
- 7.
16. Status Report on Disposal of Mixed Waste, April 13, 1989
 17. Portion of Certified Minutes of the 4th ACNW Meeting, September 13-14, 1988
 18. Memorandum for Greeves from Bell, March 8, 1989, re Report of Meeting with EPA on Mixed Waste
 19. Letter for Zech from Holeman, Yale University, March 20, 1989, re Mixed Low-Level Dual Regulations
- 8.
20. Status Report on SCP Review and SCA Preparation, April 12, 1989
 21. Viewgraphs from April 19, 1989, Briefing of ACNW Working Group
- 10a.
22. Status Report on Update on the Below Regulatory Concern (BRC) Policy Statement, April 14, 1989
 23. ACNW Letter for Zech from Moeller, December 30, 1988, re Comments on Advance Notice on the Development of a Commission Policy on Exemptions from Regulatory Control and Practices Whose Public Health and Safety Impacts Are Below Regulatory Concern
 24. Memorandum for ACNW Members from Merrill, dated March 7, 1989, re Public Meeting Held on January 12, 1989, with attachment
 25. Memorandum for Fraley from Morris, April 2, 1989, re Ninth ACNW Meeting Schedule, with attachment (Official Use Only)
- 10b.
26. Status Report on Petitions for Disposal of Radioactive Waste Streams Below Regulatory Concern, April 13, 1989
 27. Memorandum for Fraley from Morris, January 9, 1989, re ACNW Briefing for Petitions Which Qualify for Expedited Handling
 28. Memorandum for Morris from Hopkins, November 9, 1988, re Below Regulatory Concern (BRC) Petition Coordination
 29. 10 CFR Part 9, Appendix B

APPENDIX III, NOTEBOOK CONTENTS, 9TH ACNW MEETING

11.

30. Status Report on Licensing Support System, April 13, 1989
31. Final Draft Rule on the Submission and Management of Records and Documents Related to the Licensing of a Geologic Repository for the Disposal of High-Level Radioactive Waste, April 7, 1989
32. Memorandum for Parler from Chilk, April 7, 1989, Staff Requirements Affirmation/Discussion and Vote 3:30 p.m., Thursday, March 30, 1989
33. SECY-89-027, Final Rulemaking on the Licensing Support System for the High-Level Waste Licensing Proceeding, January 30, 1989 (without attachments)

APPENDIX IV - ACNW LETTER REPORTS/MEMORANDA

The letters/memoranda listed below were issued as result of the 9th ACNW meeting and are attached.

1. Draft Technical Position on Postclosure Seals in an Unsaturated Medium
2. Proposed Waste Confidence Decision by the Waste Confidence Review Group
3. Proposed Commission Policy on Exemptions from Regulatory Control
4. Management of Mixed Hazardous and Low-Level Radioactive Wastes



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

May 3, 1989

The Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Zech:

SUBJECT: DRAFT TECHNICAL POSITION ON POSTCLOSURE SEALS IN AN UNSATURATED
MEDIUM

During its ninth meeting, April 26-28, 1989, the Advisory Committee on Nuclear Waste (ACNW) met with members of the NRC staff to discuss the draft Technical Position on Postclosure Seals in an Unsaturated Medium. Representatives from the U.S. Department of Energy were present at this meeting. We also had the benefit of the document referenced.

On the basis of this review, we offer the following comments:

1. The draft technical position does not deal adequately with factors such as seismicity, tectonics, and long-term changes in geology, hydrology, and climate that might affect seal or barrier performance. Long-term projections on the geology, seismicity, tectonics, and climate of the Yucca Mountain area contain uncertainties and each of these factors could have impacts on the design, location, and performance of the seals. For these reasons, we believe that the draft technical position needs to be expanded to explicitly address these considerations.
2. Backfill materials for shafts and seal cements for boreholes can be selected to have sorptive properties for radionuclides. Such materials would provide added protection against unanticipated events, even if no containment functions are assigned to the backfills and seals. We recommend that the draft technical position include a statement addressing this additional consideration.
3. The draft technical position indicates that the outflow of radioactive gases from the repository could be significant and needs to be prevented. We believe that a rationale to support this position should be provided, as well as some perspective on the significance of this potential release.
4. Whether fracture or matrix flow predominates within the repository is an unresolved issue, and its resolution could have an impact on the method of control of potential releases. Because fracture flow may prove significant, its potential impact on the performance requirements for the barriers needs to be addressed in the draft technical position.

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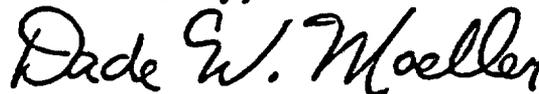
May 3, 1989

5. It appears that the closures that the U.S. Department of Energy proposes to install in the Yucca Mountain facility might be better characterized as "barriers" rather than "seals." If appropriate, the title of the draft technical position should be altered to reflect this fact.

The Committee wishes to express concern about the apparent lack of response from the geological community to which the draft technical position was available for review. The NRC should consider implementation of a more active program for soliciting reviews from such groups.

On the basis of our review, we believe that development of the draft technical position is justified. We hope these comments will be helpful.

Sincerely,



Dade W. Moeller
Chairman

Reference:

Memorandum dated March 31, 1989 from John J. Linehan, NRC, to Richard K. Major, ACNW, Subject: Transmittal of Draft Technical Position on "Postclosure Seals in an Unsaturated Medium"



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

May 3, 1989

The Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Zech:

SUBJECT: PROPOSED WASTE CONFIDENCE DECISION BY THE WASTE CONFIDENCE
REVIEW GROUP

During its ninth meeting, April 26-28, 1989, the Advisory Committee on Nuclear Waste (ACNW) met with members of the NRC Staff to discuss the preliminary draft of the proposed Waste Confidence Decision (see reference) by the Waste Confidence Review Group. This matter was also a subject of discussion during a meeting held on April 19, 1989 by an ACNW Working Group.

On August 31, 1984, the NRC issued a final decision on what has come to be known as its "Waste Confidence Proceeding." The current review is an update of that assessment, and a significant feature in this latest review is the incorporation of the changes brought about by the Nuclear Waste Policy Amendments Act of December 1987.

On the basis of our discussions on this matter, we offer the following comments:

1. We believe the present report appears to be technically sound, and in this assessment, we endorse both the expanded application of the generic approach to the majority of nuclear power plants and the incorporation into the proceedings of a more realistic timetable for the availability of a licensed repository and an extended time interval for the storage of spent fuel.
2. We continue to have concerns about the ability of the NRC staff to confirm that the repository complies with the probabilistic standards developed by the U.S. Environmental Protection Agency. The explanations given in the proposed Waste Confidence Decision on how this is to be accomplished do not illuminate the process nor do they provide convincing arguments that it can be accomplished.

~~8/17/89~~

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The Honorable Lando W. Zech, Jr. - 2 -

May 3, 1989

The report also needs organizational and editorial changes to enhance the ease with which it can be read and assimilated.

Sincerely,

Dade W. Moeller

Dade W. Moeller
Chairman

Reference:

Memorandum dated April 17, 1989 from Robert M. Bernero, Director, Nuclear Material Safety and Safeguards, to Dade Moeller, Chairman, ACNW, transmitting Preliminary Draft of Waste Confidence Review Group Proposed Waste Confidence Decision (PREDECISIONAL)



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

May 3, 1989

The Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Zech:

SUBJECT: PROPOSED COMMISSION POLICY ON EXEMPTIONS FROM REGULATORY CONTROL

During its ninth meeting, April 26-28, 1989, the Advisory Committee on Nuclear Waste (ACNW) met with members of the NRC staff to discuss the proposed Commission Policy on Exemptions from Regulatory Control. We also had the benefit of the document referenced. This matter was also a subject for discussion at several of our previous meetings. We most recently commented to you on this matter on December 30, 1988.

As a result of our review, we believe the latest version of the proposed Policy Statement has successfully addressed a number of formerly unresolved issues. Areas that still need to be strengthened and/or clarified are listed below:

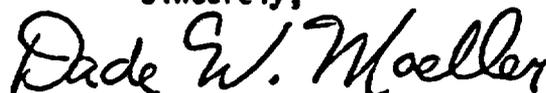
1. The Policy Statement should state unequivocally that practices (including sources and devices) that are candidates for exemption should not, taking into consideration all such practices, result in an annual dose rate greater than a small fraction [i.e., about 10 mrem (about 0.1 mSv) per year] of the long-term annual dose limit [100 mrem (1 mSv) per year] for individual members of the public. Although this could mean that the dose rate from individual sources might approach 10 mrem (0.1 mSv) per year, suitable adjustments will need to be made where a given population group might be exposed to multiple sources.
2. Another important consideration, particularly in terms of releases of radioactive materials into the environment which represent an irretrievable action, is the associated longer-term dose commitment to the affected population. In essence, the proposed policy must take into consideration both the annual dose and the dose commitment.
3. We continue to believe that the permissible annual collective dose limit should be reduced as the allowable dose rate to members of the public from individual practices increases. We urge that this approach be made a part of the Policy Statement.

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May 3, 1989

4. Although differences in the dose rates to members of the public from natural background sources can be used to provide perspective, we believe that such differences should not be used as a justification for setting dose rate limits for practices being considered for exemption. The Policy Statement should be modified to reflect this limitation.

Sincerely,



Dade W. Moeller
Chairman

Reference:

Memorandum dated April 13, 1989 from Bill M. Morris, Office of Nuclear Regulatory Research (RES), for Raymond F. Fraley, ACRS, transmitting Preliminary RES Draft of Proposed Commission Policy on Exemptions from Regulatory Control



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

May 3, 1989

The Honorable Lando W. Zech, Jr.
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Chairman Zech:

SUBJECT: MANAGEMENT OF MIXED HAZARDOUS AND LOW-LEVEL RADIOACTIVE WASTES
(MIXED WASTES)

During its ninth meeting, April 26-28, 1989, the Advisory Committee on Nuclear Waste (ACNW) met with members of the NRC staff and representatives from the Nuclear Management and Resources Council (NUMARC) to discuss the current status of the development of procedures for licensing facilities for the disposal of mixed wastes. This matter has also been discussed during meetings held by the Committee in calendar year 1988.

As you know, the U.S. Congress has assigned dual jurisdiction for the regulation of mixed wastes to the NRC and the Environmental Protection Agency (EPA). As a result, representatives of these two agencies have met on a regular basis over the past several years in attempting to resolve the problems caused by dual jurisdiction and to develop a common approach toward regulation. Unfortunately, for various reasons, these meetings have not resulted in full resolution of these problems, while at the same time mixed wastes continue to be generated and various groups are developing plans to submit applications for licensing disposal facilities for such wastes.

On the basis of these observations and our latest discussions on this matter, we offer the following comments.

1. It should be possible to resolve the problems caused by dual jurisdiction. For example, existing agreements between NRC and the Occupational Safety and Health Administration on the regulation of occupational health and safety at nuclear power plants, and between NRC and the Department of Transportation on matters relating to the transportation of radioactive materials, could serve as models for developing a joint agreement between NRC and EPA. Direct discussions between the NRC Chairman and the EPA Administrator could help bring this subject to closure. We urge that consideration be given to this approach.
2. During our meeting, we learned that most organizations knowledgeable in this field have concluded that any facility that meets NRC's regulatory requirements for the disposal of low-level radioactive wastes is capable of meeting the EPA criteria for the disposal of hazardous (nonradioactive) wastes. This conclusion

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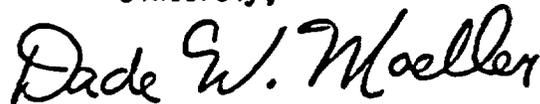
May 3, 1989

could serve as a basis for the development of a joint NRC-EPA statement for regulating such wastes.

3. This matter is of sufficient importance that the NRC resources being directed to its attention should be increased. We were told that the projected effort for Fiscal Years 1990 and 1991 is at a level of 0.5 FTE. We believe this is inadequate.
4. Many groups (NRC, EPA, NUMARC, and the Department of Energy) are addressing the problems related to the disposal of mixed wastes, and, although most of the related issues appear to have been identified, several appear to have been overlooked. These include the development of specific guidance for the regulation of hazardous wastes that contain naturally occurring and accelerator-produced radioactive materials and of hazardous wastes that contain greater-than-Class-C low-level radioactive wastes. These matters need to be addressed.

It is our conclusion that the problems associated with the development of a joint NRC-EPA regulatory approach for licensing facilities for the disposal of mixed wastes are primarily institutional. We hope that these comments will serve as a stimulus for the development of approaches for resolving these problems.

Sincerely,



Dade W. Moeller
Chairman

APPENDIX V

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

IN RESPONSE, PLEASE
REFER TO: M890601B

June 9, 1989



OFFICE OF THE
SECRETARY

MEMORANDUM FOR: William C. Parler, General Counsel
FROM: ^{Bate} Samuel J. Chilk, Secretary
SUBJECT: STAFF REQUIREMENTS - AFFIRMATION/DISCUSSION
AND VOTE, 4:00 P.M., THURSDAY, JUNE 1,
1989, COMMISSIONERS' CONFERENCE ROOM, ONE
WHITE FLINT NORTH, ROCKVILLE, MARYLAND
(OPEN TO PUBLIC ATTENDANCE)

I. SECY-89-154 - NRC Advisory Committees Regulations

The Commission, by a 5-0 vote, approved revisions to 10 CFR Part 7 to make it consistent with current agency practice and GSA Federal Advisory Committee Management Regulations, subject to the following:

1. For consistency and clarity, the references to the "Secretariat" should all be to the "GSA Secretariat" (see pages 20, 21, and 33);
2. The Manual Chapter references should be deleted from the text of the regulations themselves in sec. 7.18 to avoid possible future consistency problems should the manual references change.

By copy of this memorandum, the advisory committees are advised that transcripts of their meetings with the Commission should be used in lieu of minutes of such meetings. The Commission believes that a transcript would be a better accounting of such meetings and would save the resources otherwise put into developing meeting minutes.

The Federal Register Notice should be revised as noted, forwarded to the Regulatory Publication Branch for a review of consistency with Federal Register requirements, and returned for signature.

(OGC)

(SECY Suspense: 6/30/89)

cc: Chairman Zech
Commissioner Roberts
Commissioner Carr
Commissioner Rogers
Commissioner Curtiss
EDO
GPA
PDR - Advance
DCS - P1-24

~~890615/54~~
10.

1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

3 * * *

4 PERIODIC BRIEFING BY ADVISORY COMMITTEE
5 ON NUCLEAR WASTE (ACNW)

6 * * *

7 PUBLIC MEETING

8 * * *

9 Nuclear Regulatory Commission
10 One White Flint North
11 Rockville, Maryland

12
13 Thursday, April 27, 1989
14

15 The Commission met in open session, pursuant to
16 notice, at 10:00 a.m., the Honorable LANDO W. ZECH, JR.,
17 Chairman of the Commission, presiding.

18
19 COMMISSIONERS PRESENT:

20 LANDO W. ZECH, JR., Chairman of the Commission
21 THOMAS M. ROBERTS, Member of the Commission
22 KENNETH C. ROGERS, Member of the Commission
23 JAMES R. CURTISS, Member of the Commission
24

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

STUART TREBY, General Counsel's Office

FOR THE ADVISORY COMMITTEE ON NUCLEAR WASTE

DR. DADE W. MOELLER, Chairman, ACNW

DR. MARTIN J. STEINDLER, ACNW

P R O C E E D I N G S

(10:02 a.m.)

CHAIRMAN ZECH: Good morning, ladies and gentlemen.

Commissioner Carr will not be with us this morning. He has advised me that he will read the transcript carefully. His staff is here, I note.

Today the Commission is meeting with the Advisory Committee on Nuclear Waste. The Advisory Committee on Nuclear Waste was formally established in June of 1988, to advise the Commission on various nuclear waste management issues.

As noted in the meeting agenda, the Commission will be briefed this morning on three issues: Greater-than-Class-C waste, high-level waste management, and the West Valley Demonstration Project, and then we'll conclude by having the Advisory Committee on Nuclear Waste give us their views on the future activities that are planned.

This is an information meeting, and no Commission vote is expected during this meeting. Do any of my fellow Commissioners have any comments they wish to make before we begin?

(No response.)

If not, Dr. Moeller, you may proceed.

DR. MOELLER: Thank you, Mr. Chairman.

1 Before I begin, I would like to make several
2 preliminary comments. First of all, as with you, we're
3 missing one of our members. Clifford Smith is not with us
4 today -- he called to express his regrets -- and it's due
5 to illness in his family.

6 Secondly, we recognize, Mr. Chairman, that
7 perhaps this is the last formal meeting we will have with
8 you as Chairman of the Nuclear Regulatory Commission, and
9 we will always remember that the committee was formed
10 while you were the leader, and we're very appreciate of
11 the support and encouragement that you and your fellow
12 Commissioners have provided to us, particularly during
13 this first year when we were learning how to do things.

14 CHAIRMAN ZECH: Well, thank you very much. I
15 feel confident that we, my colleagues and I, made the
16 right decision when we established the Advisory Committee
17 on Nuclear Waste. It's already giving us a lot of good
18 advice, and I'm sure that you'll continue to do that in
19 the future, and thank you for your kind thoughts.

20 DR. MOELLER: Well, thank you. I also want to
21 mention in terms of communications with the Commissioners,
22 that we have very much enjoyed the meetings that we've
23 been able to have with the technical assistants, and we
24 hope that those can continue and that you will use that as
25 an additional avenue of communication with us. These

1 meetings, we believe, have been very helpful.

2 CHAIRMAN ZECH: Well, we're pleased to hear
3 that, and I've had the same thought from my own people,
4 and I can assure you that that certainly seems to be a
5 very valuable system, and certainly intend to continue
6 because it is providing very good background and advice
7 for all of us on the Commission, and also it's important
8 for our technical assistants to be brought up-to-date by
9 the Advisory Committee on Nuclear Waste in a personal sort
10 of way, and we appreciate the time you spend with our
11 people. I think it's a very good method and a very good
12 way to keep all of us informed. We appreciate it very
13 much.

14 DR. MOELLER: Yes, sir.

15 Well, we are, of course, in the midst of our
16 ninth meeting, and I thought I would just briefly review
17 -- not review, but name the topics that we are
18 considering. One item we are reviewing, and we will plan
19 to provide you comments on it, is the proposed statement
20 being prepared by the staff to update the waste confidence
21 decision.

22 We are looking at the proposed technical
23 position on post-closure seals. We will be looking at the
24 licensing support system. I doubt if we will send you any
25 comments on that, since that was done, of course, by

1 negotiated rulemaking.

2 We are also scheduled to look, once ^e again, at
3 below regulatory concern, the policy statement there, and
4 I'm hoping that this will then conclude that, that the
5 letter we send you this month will be our last on that,
6 and we're also looking at the disposal of mixed waste.

7 Most importantly, of course, at this meeting
8 we're continuing to review with the Division of High-Level
9 Waste Management, their review of DOE's SCP and their
10 preparation of the site characterization analysis report.

11 In anticipation of that and in preparing to
12 complete our business on it by the deadline of the end of
13 June. we held a working group meeting on this on April the
14 19th. and we have scheduled two additional full committee
15 meetings between now and June the 30th. These are two
16 meetings in addition to the one we had already scheduled
17 for June the 28th through the 30th.

18 So, our goal is to complete our review and to
19 have everything finished up by the deadline that has -- or
20 the target date that has been indicated to us.

21 In terms of reviewing that and attempting to be
22 sure that we provide an independent point of view on it,
23 we have been exploring several topics through a mechanism
24 of using our consultants as reviewers, as independent
25 reviewers and, as you know, the Division of High-Level

1 Waste has set up, or it's organized with team leaders to
 2 review geology, tectonics, et cetera, hydrology pertaining
 3 to the proposed Yucca Mountain Repository, and we plan to
 4 divide, or to take those separate reports and assign them
 5 to individual consultants, as I say, for in-depth reviews.
 6 And this will provide us a little more confidence that we
 7 are doing our job.

8 We, as a committee, can review them
 9 superficially or in-depth, to some degree, but we'll feel
 10 better doing it this way.

11 We also plan to take the design acceptability
 12 analysis for the exploratory shaft facility and assign
 13 that to one or two consultants, to read in-depth and to
 14 comment to us on it.

15 A third item that we're doing in reviewing the
 16 High-Level Waste Repository is that we have taken the
 17 first of -- and I know you realize there are 106, I
 18 believe, study plans -- well, we've taken one of those
 19 study plans as sort of a pilot project, and we have
 20 reviewed it in-depth to see, you know, how it might go and
 21 what we could learn from it.

22 The one we took was one on measuring groundwater
 23 flow time, and we found a couple of interesting things, in
 24 going into that. First of all, we found that we, as a
 25 committee, or I suppose no one, can review a single study

1 plan unto itself. They are closely inter-tied, and so you
2 have to look at -- as Commissioner Rogers constantly tells
3 us, look at a systems approach -- you have to look not
4 only at that study plan, but all the others that it's tied
5 into.

6 We also found that in this one study plan, some
7 interesting observations, in that the study plan had been
8 written perhaps three years or so ago, and the author of
9 this study plan, the principal author, was present at our
10 meeting, and he could fill us in on all the developments
11 that had occurred since it was written.

12 So, there's a lot more to it, again, than what
13 is the written word. And, of course, what we're
14 constantly seeking in our reviews of the study plans will
15 be, are they geared to provide the data that we need for
16 performance assessment or whatever. So, we're really
17 zeroing in on that.

18 Now, it took us a full day to do one study plan
19 such as we did, so there's no way, of course, that we can
20 review all 106, so what we plan to do, or at least one
21 approach that we might take, is that Dr. Steindler, for
22 example, has identified a number of key technical issues
23 that we really need to address in our review.

24 Well, we may use his list and then select out
25 which study plans address those particular technical

1 issues. and select and review those in our work. So,
2 that. I thought I would share with you, as what we're
3 doing on that.

4 As a fourth item, although this is entirely in
5 the discussion stages, we simply, in sharing our thoughts
6 with you, wanted to mention that we have been considering
7 the methodology of applying risk analysis to the
8 Repository, and we're considering whether it might be
9 useful to do what I would call a "scoping study" PRA of
10 the Yucca Mountain site.

11 There ^{have} ~~has~~ already, of course, been other scoping
12 studies performed, such as one on environmental pathway
13 analysis, and we thought that there may be benefit in such
14 an approach. And our primary reason for doing that would
15 be to identify or confirm what are the key parameters, and
16 also to constantly seek out, if we can, any "fatal flaws" in
17 the current proposal.

18 A fifth item is several new developments in
19 dealing -- in interacting with the staff on the Yucca
20 Mountain plans -- this is the NRC staff, of course, ⁱⁿ -- In
21 the way of pathway analyses, ^{They} have brought to our
22 attention information that indicates a potential for the
23 release of ^cCarbon-14. And, so, in other words, there
24 could be a gaseous -- and we were familiar with this, but
25 they are now getting down to specifics -- that the gaseous

1 pathway may be of significance. Well, we plan to get into
2 that more.

3 Again, we reviewed, last week and at this
4 meeting, the technical position on post-closure seals. In
5 that technical position, they consider the gaseous pathway
6 and its importance and, of course, we need to get into it
7 and find out what is the source term -- you know, how
8 significant is it -- and how rapid would the release be,
9 and so forth. So, we wanted to share that with you.

10 A second new development is that -- is the
11 question of whether the shafts are -- the exploratory
12 shafts -- are really located where they will provide
13 representative data on the Yucca Mountain unsaturated
14 zone. Of course, you don't want to collect too many
15 samples, you don't want to collect too few, but you would
16 like for the ones that you do collect to truly be
17 representative of the conditions down there. So, the
18 staff is looking into that, and we plan to follow that and
19 work with them on it.

20 One other item related to our work in reviewing
21 the Yucca Mountain facility is our interaction with the
22 Technical Review Board, which has been -- they are
23 appointed by the President, and appointed to advise DOE on
24 the progress and on their own work on this facility.

25 Well, one of the questions raised by the Nuclear

1 Waste Technical Review Board, at one of its recent
2 meetings -- I believe this was perhaps a meeting of one of
3 their -- what I would call one of their subcommittees
4 rather than the full committee -- but they asked if, in
5 excavating the exploratory shaft facility, and
6 particularly in excavating the drifts out from the shaft,
7 whether the drifts were aimed in the right direction and
8 whether they were going to be excavated in far enough
9 distance -- at a far enough distance, to really provide
10 all of the information that's needed. And we have never
11 looked into this, so we found the information quite
12 valuable to us.

13 Now, George Lear attended the first meeting -- a
14 member of your staff, of course, and our liaison with the
15 staff -- attended the first meeting of the Technical
16 Review Board. and Mel Carter, Melvin Carter, who is one of
17 our consultants, is a member of that Technical Review
18 Board.

19 We have found that the ties that are being
20 provided by this liaison are very valuable, and we simply
21 wanted -- we wanted to share that with you.

22 As another item, we have, of course, been
23 thinking about the quality assurance programs underlying
24 the development of the Repository, and we have noted, and
25 it's been reported to us, that some 15 to 20 percent of

1 the costs of many of the data^a-gathering operations are due
2 to. or done in compliance with, quality assurance
3 provisions.

4 While some people might say, "Well, this is a
5 tremendous expense, and maybe it's unwarranted", we
6 believe that this -- well, we know the program is
7 necessary, and we believe it's far too early to reach any
8 judgment on that. We, again, plan to watch it as it moves
9 along, and try to keep abreast of it.

10 Another item that is constantly in our minds is
11 the degree to which the NRC staff needs to develop an
12 independent capability for modeling the Repository site.
13 We know that they need to be able to do it independently,
14 but also if they attempt to totally develop from ground
15 zero, so to speak, the models all the way through from
16 beginning to end, that is a tremendous task.

17 We believe that independence can be maintained
18 without developing totally new models. We don't have all
19 the answers, but we're certainly interacting with the
20 staff, to assist them and to keep up with what they are
21 doing and to assist in any way that we can.

22 It does appear that DOE, in response to the
23 objection raised by the staff on the draft, consultation
24 draft SCP, has expanded its horizons to include alternate
25 conceptual models for the Yucca Mountain site.

1 As a final comment on this opening portion which
2 I'm directing to our review of the SCP SCA, I would offer
3 the following comment, and we do it not as criticism of
4 the NRC staff -- above all, I'll say later that we think
5 they're doing a very good job -- but one item that we want
6 to just simply share with you is that they offered their
7 objections and their comments and questions and so forth,
8 on the consultation draft SCP.

9 Well, then, DOE, of course, in response to that,
10 attempted to address each of these concerns. In some
11 cases, it was simply changing a paragraph; in other cases,
12 it might consist of inserting ten new pages.

13 Well, now, the NRC staff, in reviewing these
14 revisions, is coming up, in some cases, or they could come
15 up, with an increased number of concerns rather than a
16 reduced number. And having both of us formerly been
17 members of the ACRS and we watch the list of unresolved
18 safety issues, and we recall how instead of being resolved
19 they seem to grow in number, we simply want to flag this
20 -- and the staff is well aware of it -- that, obviously,
21 they want to raise all legitimate concerns, but we hope
22 that the number can be kept to a manageable size.

23 And I, personally, felt, with five objections on
24 the consultation draft, you know, that was good. It was a
25 clear-cut message. They didn't give them 138 concerns,

1 they gave them five objections, plus additional concerns,
2 but they clearly categorized what is important. DOE knew
3 what they considered to be important, and we're sure it
4 was extremely helpful to them and a very good job on the
5 part of the staff.

6 I think. with those remarks. I will conclude
7 this first section, and we're certainly open to questions
8 or comments.

9 CHAIRMAN ZECH: Are there any questions from my
10 colleagues, on the high-level waste presentation?
11 Commissioner Roberts?

12 COMMISSIONER ROBERTS: No.

13 CHAIRMAN ZECH: Commissioner Rogers?

14 COMMISSIONER ROGERS: Yes. How long would you
15 think a PRA would take to do for the Yucca Mountain site?

16 DR. MOELLER: I can't answer that and -- even as
17 to how long it would be, but I'm told that a scoping study
18 PRA versus a full-fledged one would be not on the back of
19 an envelope, but it certainly is manageable. I would have
20 to ask someone more informed on it, perhaps someone on the
21 NRC staff. We do not have that answer, but we understand
22 certainly a few months, I guess you could do it, depending
23 -- and we've asked our own supporting staff to look into
24 what has been done in the past. What is the backlog of
25 information on this, and we have not completed that, but

1 the time required would depend upon how ^{much} has been done in
2 the past.

3 COMMISSIONER ROGERS: Do you have any reason--
4 has any specific reason come up for you to doubt whether
5 the choice of the locations of the exploratory shafts is
6 the best, or is this a more general desire to just look at
7 everything from a fundamental point of view?

8 DR. STEINDLER: I think the latter rather than
9 the former.

10 COMMISSIONER ROGERS: Nothing specific which
11 would suggest that this is an important thing to --

12 DR. STEINDLER: Nothing specific that we raised.
13 The original objections raised by the staff we understood,
14 and that's been taken care of.

15 DR. MOELLER: And those were very legitimate and
16 undoubtedly very constructive, the questions which were
17 raised, and the shafts were moved, of course, the
18 location.

19 COMMISSIONER ROGERS: Your suggestion that NRC
20 develop an independent modeling capability for the site,
21 is there any way you could elaborate on what you're
22 thinking about there, as to what that means? I know
23 you've said, well, they can't start from scratch and do
24 everything, but what are you thinking about there? Is it
25 to question the basic concept of a model, the starting

1 point of a model, or to fully exercise a model to see what
2 one can draw from it? Just how do you view that?

3 DR. MOELLER: Well, I'll comment briefly, and
4 then certainly Dr. Steindler can expand.

5 We believe, and the staff has said to us that
6 they believe that they need an independent capability for
7 assessing the adequacy of the site. In order to establish
8 the performance assessment of various components within
9 the facility, you need models, and you plug the data into
10 the various parameters and come out with information.

11 It's a tough area to handle because the staff
12 would like, I believe, to, as I say, independently
13 evaluate what DOE is claiming and, yet, what we're saying
14 is, if they try to develop a totally separate,
15 independent, completely different set of models, if they
16 came out with different answers, you would not know -- I
17 would not know -- whether it was imperfections in the
18 model or a true difference. Marty?

19 DR. STEINDLER: Let me try the answer in a
20 different way. Models address a number of fairly
21 fundamental issues. One of the important issues is rate
22 phenomena because the attempt is made to predict. Another
23 important issue is steady-state phenomena. That is, there
24 is enough time for some aspects of the behavior of the
25 system -- for example, geochemistry -- to reach what some

1 people think is steady-state.

2 Some of these phenomenon are very strongly
3 influencing the final determination of whether or not the
4 Repository will perform according to criteria. Some of
5 them are peripheral to that final determination.

6 Our view is that those models, those descriptors
7 of the real world that are necessary to -- that make an
8 important difference to the final answer of performance,
9 ought to be checked and arrived at from two, or perhaps
10 more. different systems. That's the independence that
11 we're looking for.

12 Whether it is possible to completely divorce an
13 independent model development from what has already been
14 done in the literature -- my personal view is, I doubt it.
15 Technical people should and do, obviously, know what the
16 rest of the world is doing, so as not to rediscover
17 wheels, but there is a big difference in taking somebody
18 else's model, plugging in some numbers that you think are
19 representative and then deciding whether or not your
20 answer is the same as the other chap's, and doing the
21 development of the algorithms on your own.

22 I think what the staff is looking for, and what
23 I think we would certainly agree with, is that the staff
24 needs to be able to say with some confidence that, yes,
25 we've looked at the description of the performance

1 assessment in the year 9,000, for example, and we think
2 it's based on a realistic picture of the world. They have
3 to do that independently, and that's the kind of thinking
4 that we're going through.

5 That's a little fuzzy because we haven't focused
6 --

7 COMMISSIONER ROGERS: Yes, I'm having a little
8 trouble getting a hold of that.

9 DR. STEINDLER: -- because we haven't focused in
10 on explicitly what the performance model really looks
11 like. and they tend to be very large and complicated.

12 COMMISSIONER ROGERS: The question would be, in
13 a sense. whether one -- whether you're talking about
14 looking at all the possible alternative models that might
15 be developed, or whether one is looking at the modeling
16 process via, say, what we do in a nuclear plant, a
17 vertical slice through one system, take everything from
18 start to finish with, say, one model, to see whether the
19 process, the modeling process, and the assumptions
20 involved in the development of the algorithms, and so on
21 and so forth, all seem to be sound, without trying to look
22 at the full range of possible starting point models. I'm
23 just trying to understand what your thinking is on this
24 because it looks to me like it's going to be very tricky
25 to try to not do the whole thing all over again, to

1 maintain a fully independent capability.

2 DR. STEINDLER: Well, let me give you one
3 example of where I might venture, at some risk I'm sure,
4 into the area of saying that it's probably not terribly
5 critical whether the model developed by DOE is
6 independently reviewed and checked against something
7 totally different from the NRC.

8 The behavior of the metallic exterior of the
9 waste form, for example, in the case of glass, is being
10 looked at in an experimental program in lots of different
11 places. The attempt is being made to predict -- to obtain
12 enough data to understand either the mechanism of
13 corrosion or to be able to predict from empirical
14 considerations, what the penetration rates and corrosion
15 rates are.

16 A narrow view of that system is sufficiently
17 easy to envelop so that two people looking at the very
18 same model can come to independently arrived at
19 assessments of whether or not that flies. That kind of
20 assessment, it seems to me, is not necessary to repeat on
21 an independent basis.

22 I have less of a warm feeling that such a thing
23 would not be necessary for somebody asking where do
24 nuclides and how do nuclides travel in geologic systems.
25 There, my personal view would be, gee, somebody really

1 ought to look at this in a fairly separate way.

2 The models that I'm aware of are moderately
3 convoluted and complex and, therefore, become a little
4 opaque. They are hard to see into, and you have to do an
5 awful lot of work to take them apart. That, I think,
6 would be something that the staff ought to be able to do
7 independently.

8 I don't know whether that helps.

9 COMMISSIONER ROGERS: Fine. Well, I think we
10 don't really have time to discuss all the ways it might be
11 done, but I wanted to get a feeling about your thinking on
12 it. Thank you very much.

13 CHAIRMAN ZECH: Commissioner Curtiss?

14 COMMISSIONER CURTISS: I have just two or three
15 more general questions. You touched upon the Nuclear Waste
16 Technical Review Board and, of course, since the ACNW last
17 briefed us in October, that Board is now fully
18 constituted, it's up and running.

19 You touched upon one issue involving the
20 direction of the drifts that the Nuclear Waste Technical
21 Review Board identified and that you found to be of some
22 interest.

23 I wonder if I could ask, more generally, now
24 that that Board has been established, how you see your
25 role vis-a-vis that independent establishment, just

1 generally and, more specifically, where issues come up
2 that the Nuclear Waste Technical Review Board identifies,
3 it looks to me like that one of maybe two, maybe more,
4 possible ways to approach those issues from our
5 standpoint, they could be of interest to the ACNW and we
6 could pursue those and devote the resources of the ACNW to
7 address those same issues that the Review Board is
8 addressing or, alternatively, in the interest of
9 conserving resources here and focusing more specifically
10 on things that might not be under review by the Waste
11 Technical Review Board, they may be issues that the Board
12 could take the lead on.

13 Do you have any thoughts on that relationship,
14 and where issues come up that are similar in both fora,
15 how you would approach those?

16 DR. MOELLER: We, of course, need to gain
17 experience on this. My initial reaction is that if the
18 Technical Review Board is exploring a subject area and if
19 we can maintain close liaison with them, we will, to a
20 large degree, depend upon and benefit by whatever they
21 uncover.

22 I believe it may be too early at the moment, at
23 least for me, to even know how they're going to operate,
24 and what sort of level of investigation they are going to
25 do. This thing about the drifts, the direction and

1 distance, which shows that they are capable of getting
2 into the most -- you know. it's a basic question, but
3 they're capable of getting into very detailed analyses of
4 what's going on.

5 Marty, do you have --

6 DR. STEINDLER: No.

7 DR. MOELLER: But we will maintain liaison, and
8 I hope -- we see them as an added resource. We do not see
9 them as competition. We see them as a lot of help.

10 COMMISSIONER CURTISS: Let me go back to the
11 site study plans. You indicated that after your first
12 pilot review of the groundwater study plan, that you have
13 taken a look at the entire list of 106 and, I take it,
14 tried to come up with a methodology for identifying sort
15 of the key issues, and then from that methodology,
16 identifying the number of site review plans that you--
17 site study plans that you would need to review. Do you
18 have a feel yet, based upon the issues that you've
19 identified, how many that might be?

20 DR. MOELLER: No, sir, and, in fact, I probably
21 was misleading in what I said. There have been several
22 issued to-date, and there's a schedule for two or three a
23 month for the next few months.

24 We're pretty much controlled by what is made
25 available to us, and when, as to what is available even

1 for us to review. I believe that the -- or the NRC staff
2 has, of course, reached a judgment on how many they plan
3 to review. Do you recall, was it 20 or so?

4 DR. STEINDLER: Twenty-something.

5 DR. MOELLER: Twenty, or some number like that.
6 We have not set a number on how many we can review, or
7 should review. And to repeat, we're governed by when they
8 come out and so forth.

9 COMMISSIONER CURTISS: When you use consultants
10 and contractors in that capacity, are you finding any
11 difficulty in coming up with consultants that aren't
12 involved in some other aspect of the program, don't have a
13 conflict?

14 DR. MOELLER: That was a problem, of course, and
15 continues to be a problem, but I believe we have a pretty
16 good team right now. It numbers about a half a dozen that
17 we're using regularly, and they have the time and they all
18 are independent, and we found them very useful. In fact,
19 I was just commenting this morning on the way over, that
20 we're operating somewhat differently from the ACRS, not
21 that that's good or bad, but what we do is, in drafting
22 our reports to you, every consultant has input into our
23 reports.

24 The final decision on exactly what it says is
25 Drs. Smith, Steindler and -- we make the decision, but our

1 consultants are serving as almost members of our
2 committee. They're very helpful to us in the input that
3 they provide.

4 COMMISSIONER CURTISS: Thank you.

5 CHAIRMAN ZECH: Just a comment first, and then
6 the question. The comment would be, you mentioned the
7 USIs and the problem of wiping them off the books and
8 getting them resolved.

9 We recently had, for your information, a
10 briefing by the staff on the unresolved safety issues, and
11 I think the Commission was very encouraged to see the
12 staff has made considerable progress in that regard.

13 As I recall the briefing, their intentions,
14 their goal is to complete the unresolved safety issues by
15 this calendar year, which would show. I think,
16 considerable effort in that regard. I thought you'd be
17 interested in knowing that, although you're not
18 necessarily involved in all the issues of the Advisory
19 Committee on Reactor Safeguards now, I recognize, but I
20 wanted to mention that because we are encouraged by the
21 progress you're making, and on the generic issues also.

22 A question, though. I visited the Yucca
23 Mountain site fairly recently, and it was a very valuable
24 visit for me. I'm aware that the State of Nevada has
25 voiced some concerns about the Yucca Mountain site

1 suitability because of recent geological faulting, active
2 volcanism, and the presence of mineral resources. Those
3 were brought to my attention during my visit.

4 Do you consider that the site characterization
5 plan addresses these issues adequately, or are there
6 ongoing -- is there ongoing work in this area? And do you
7 believe that this agency, the staff, our staff should ask
8 the Department of Energy for additional information on
9 these issues, or do you believe it's being addressed
10 adequately?

11 DR. MOELLER: I would hesitate to say
12 definitively, until we -- because the statutory SCP has
13 only been with us for a few months now, and we have not
14 had an opportunity to delve into each of those subjects.

15 I would say, in response -- and I hope it's a
16 partial answer to your question -- that we have had Nevada
17 in to appear before us. We believe that they have raised
18 a number of legitimate questions. We value their input,
19 and I'm sure the NRC staff values their input, and we
20 certainly are seriously considering every comment they
21 have, as we independently review the matter.

22 Marty, do you --

23 DR. STEINDLER: Yes. I was just going to
24 comment that the seismic -- for example, the seismic
25 discussion in the site characterization plan is fairly

1 extensive. It outlines a -- what appears to be a
2 reasonably close attention to the well-defined problems.

3 We view the issue of how to go about analyzing
4 that for sufficiency, as one that comes on us in two
5 stages. but the first stage is to get a look at the draft
6 response that the staff is making to that analysis. They
7 bring geologic resources to bear, obviously, to do that.
8 And once that's done and we begin to get some input from
9 the State of Nevada and our own sources, we would be able
10 to give you a much more coherent answer to the question.

11 CHAIRMAN ZECH: Well, thank you. I hope you
12 will follow those issues, though, because I think they are
13 very important issues to be resolved, and we would
14 appreciate your following those closely as you continue
15 your work on the Waste Repository.

16 DR. STEINDLER: Let me just add that the State
17 of Nevada, in their presentation, also made these very
18 same points to us. And because -- if for no other reason,
19 because they made those points, those will be points that
20 we will track, to the extent that we can.

21 CHAIRMAN ZECH: Very good. All right. Shall we
22 move to the next topic, Dr. Moeller?

23 DR. MOELLER: Yes, sir. The next topic is the
24 West Valley Demonstration Project, and you'll recall at
25 our meeting with you gentlemen on October the 27th of '88,

1 you explicitly asked that we keep up with West Valley,
2 look into it, and provide a report to you, which we did.

3 During our sixth meeting in January of this
4 year, we met with representatives from DOE and its
5 contractors and the State of New York's Energy Research
6 and Development Authority, and heard a very good review of
7 what's going on at West Valley.

8 And as you know, the procedure being applied
9 there is, they have the tanks of the high-level waste, and
10 they are taking the supernatant -- there is a sludge at
11 the bottom of the tanks, and liquid above -- and they're
12 passing the supernatant through ion exchange media,
13 removing the bulk of the cesium, radioactive cesium, from
14 those wastes, and then they are solidifying the
15 decontaminated supernatant using a cement approach.

16 We were encouraged by the report because they
17 had, I believe, already solidified 15,000, or some number
18 -- as I say that, it sounds so large I'm hesitant to be
19 sure whether it's correct -- but they had a very careful
20 quality control program, and whereas we had constantly
21 heard reports from the nuclear utilities where they had
22 solidified, or thought they had solidified, some low-level
23 waste or ion exchange resins and had all types of problems
24 with it, at West Valley, they had identified only two or
25 three or four -- you know, just a very few number -- of

1 the thousands of drums that had given them any problem
2 and, even there, these were identified as problems not
3 because the barrel had split open or the waste had
4 suddenly liquefied. They were identified more as a problem
5 in terms of looking back on the quality assurance program
6 that was followed in preparing the waste. So, we're very
7 encouraged by that.

8 Well, then they take, of course, the resin in
9 which the cesium has been removed, and then they take the
10 sludge, and the plan there is to make this into a
11 borosilicate glass. And as I recall, they had already
12 formed some 300 or more borosilicate glass canisters, so
13 they're moving ahead with that.

14 What we came out of the meeting with were the
15 two recommendations which we sent to you in a formal
16 report, and these were two areas that we believed needed
17 attention. The first was that the acceptance criteria for
18 the vitrified high-level waste, including the enumeration
19 of testing procedures to indicate conformance with these
20 criteria, need to be identified by DOE.

21 And I might say -- well, let me go ahead with
22 the second one -- that the public health and safety
23 criteria for the facilities and the land area that are
24 being decontaminated and perhaps ultimately released for
25 limited or some degree of public access, that those

1 criteria need to be identified or established.

2 We found, as a follow-up to this meeting, that
3 the staff, and particularly the EDO, on April the 17th,
4 sent to Mr. Fraley, our Executive Director, a very
5 detailed response, and pointed out that the Division of
6 High-Level Waste Management staff's position is that DOE
7 must ensure that the waste forms provided by any of the
8 waste producers, are acceptable for disposal in the
9 Repository.

10 And then he -- that was in response to the first
11 item or concern, and in the second one he pointed out
12 that an EIS will be prepared by New York and DOE, for the
13 cleaned up site, and that within it there would be data,
14 et cetera, on the release of the area back to the public
15 for, again, the degree to which it might be released to
16 the public.

17 Let me comment here, in the way of our sincere
18 appreciation and our compliments to Mr. Stello. Following
19 every meeting -- you know, we issue the action items and
20 so forth -- and following every meeting, we get a very
21 detailed response identifying what the staff is doing as a
22 follow-up to each of any concerns or whatnot that we have
23 identified, and the responses are positive. They are not
24 just that "we're thinking about it and going to get to it
25 in a year or so", they tell us exactly what they're doing,

1 and this has been extremely helpful, and it makes us feel
2 that what we're doing is productive.

3 CHAIRMAN ZECH: Well, we're very pleased to hear
4 that. I know.

5 DR. MOELLER: Marty, do you have any comments on
6 West Valley?

7 DR. STEINDLER: No, I don't think so.

8 COMMISSIONER ROGERS: When did you visit West
9 Valley?

10 DR. MOELLER: We have not visited. We plan --

11 COMMISSIONER ROGERS: Oh, you didn't.

12 DR. MOELLER: -- we're trying, we now say, this
13 fall. We certainly don't want to do it in the winter.

14 (Laughter.)

15 CHAIRMAN ZECH: Are there other questions?
16 Commissioner Roberts?

17 COMMISSIONER ROBERTS: No.

18 CHAIRMAN ZECH: Commissioner Rogers?

19 COMMISSIONER ROGERS: No.

20 CHAIRMAN ZECH: Commissioner Curtiss?

21 COMMISSIONER CURTISS: No.

22 CHAIRMAN ZECH: I have none. I'll be interested
23 -- I think the Commission will be particularly interested,
24 after your visit, to make sure you have the same views,
25 but we're pleased to hear that you think things are going

1 very well right now.

2 Shall we move to the next subject then?

3 DR. MOELLER: Dr. Steindler will talk about
4 greater-than-Class-C waste.

5 CHAIRMAN ZECH: All right.

6 DR. STEINDLER: This can be fairly brief. We've
7 looked at at least a portion of the greater-than-Class-C
8 issue. You can divide that greater-than-Class-C low-level
9 waste matter into, really, two parts. One of them is an
10 issue on rulemaking which is aimed at defining how this
11 waste is to be disposed of, and the other one is the
12 process of managing, right now, the unwanted source
13 material and the sundry other components that are
14 classified as greater-than-Class-C low-level waste.

15 You remember that the rulemaking issues really
16 started out around the topic of redefinition of high-level
17 waste. and the Commission elected to, instead of doing
18 that, address the disposal of greater-than-Class-C low-
19 level waste, and proposed to identify that that material
20 should be handled at least in a geologic disposal area, as
21 one option for handling it in that direction.

22 At the seventh meeting in February, of the
23 Advisory Committee, we looked at the proposed amendment to
24 10 CFR 61 that addressed this issue, and we wrote to you,
25 Mr. Chairman, our agreement with the general proposed

1 rule. and added two items. One, we added an item that we
2 suggested an explicit statement, wherever possible, that
3 the Department of Energy has a range of options, that they
4 understood that they have a range of options, rather than
5 giving them the impression that they have to dispose of
6 this material in a repository.

7 And with that, we also recommended that the
8 staff should begin to specify waste package performance
9 criteria and requirements for this greater-than-Class-C
10 waste. so that DOE could then reflect on what kind of an
11 appropriate way they would care to propose to the
12 Commission for the disposal of this material.

13 The staff response to our suggestion has been
14 excellent. They have revised the text and made emphasis
15 wherever possible. I think that issue is fairly clear and
16 has been resolved.

17 In addition, in the statement of consideration
18 that's proposed for the Federal Register, there was added
19 a comment that the staff is going to initiate an effort to
20 specify in much more detail, the waste form and packaging
21 performance criteria for this type of material, specific
22 for various kinds of greater-than-Class-C low-level waste.

23 We are aware of some of the concerns that DOE
24 has expressed, and we've read the documents that reported
25 this, about this particular rule, including some

1 reservations about projected waste volumes and the
2 uncertainty in those numbers, but we have not addressed
3 the issue any further than just reviewing the proposed
4 rule.

5 On the other hand, we understand that a more
6 pressing issue has been brought to your attention, and
7 that's concerning the process of disposing of the
8 increasing number of no longer needed sources.

9 Here, all we have done is maintain some kind of
10 cognizance of what the problem is, and we believe this to
11 be a -- what we would call a "non-technical" issue. This
12 is the issue that was involved in the derivation of a
13 process whereby the Department of Energy exercises the
14 responsibility that it has been given.

15 We think that the processes under study right
16 now, and the planning that's been done, should be
17 perfectly adequate to resolve this. We don't see any
18 particular advantage to the Commission, for us to address
19 this issue in one of our meetings and, unless you direct
20 otherwise, we probably will watch to see what's going on,
21 rather than get specifically involved.

22 So, in summary then, this greater-than-Class-C
23 low-level waste issue has been looked at from the
24 standpoint of the rulemaking. We've made some comments.
25 The staff has responded perfectly adequately to the

1 concerns we have.

2 We do look forward, however, in the not too
3 distant future, in receiving an indication from the staff
4 on what kind of a schedule they plan to follow in the
5 development of a waste -- essentially, the waste
6 acceptance criteria for greater-than-Class-C low-level
7 waste, and we do -- because we think it's important, we do
8 intend to track that process and interact with the staff,
9 to the extent that we can, as they develop these criteria.

10 And, as I say, we think that the safe storage
11 process between Department of Energy and the various
12 licensees should be resolvable by a perfectly sensible
13 process, and we see no reason to pursue it.

14 CHAIRMAN ZECH: All right. Thank you very much.

15 Any questions from my fellow Commissioners?
16 Commissioner Roberts?

17 COMMISSIONER ROBERTS: No.

18 CHAIRMAN ZECH: Commissioner Rogers?

19 COMMISSIONER ROGERS: Well, just on the changes
20 to the Federal Register notice that staff has made, and in
21 the letter that was sent to you, of February 24th, by Mr.
22 Stello, on final rulemaking on disposal of greater-than-
23 Class-C low-level radioactive waste, I just noted in
24 looking at that, that the -- in the background statement,
25 there is a final sentence -- I believe it's final,

1 although -- it's final on this page; whether it's final of
2 a paragraph -- the technical criteria to implement the
3 performance objectives and environmental standards would
4 be developed by the Commission, after DOE had selected a
5 specific disposal technology and decided to pursue
6 development of an intermediate facility, and whether you
7 think that there is sufficient guidance to DOE? That
8 leaves me to wonder whether we're waiting to say something
9 about what we expect, after they've already decided to do
10 something, and I'm just a little concerned about whether
11 there is sufficient guidance there, as to what
12 requirements NRC might leave on an intermediate disposal
13 facility, and whether you've looked at that question,
14 whether you think there is sufficient guidance.

15 DR. STEINDLER: Yes, we very briefly looked at
16 it. One of the reasons for my comment about the fact that
17 we're looking forward to a schedule from the staff is,
18 essentially, precisely because of that concern.

19 It is difficult to envision how planning for a
20 significant option can be made, without some kind of
21 guidance. There exists guidance currently, in 10 CFR 60.
22 It is not directly applicable to the kind of waste we're
23 talking about.

24 If the schedule of the staff for beginning this
25 process is sufficiently rapid, I think the problem will

1 resolve itself, but you're precisely correct.

2 COMMISSIONER ROGERS: I would ask you to just
3 try to follow that question, whether there is adequate
4 guidance. so that there isn't a holdup because people
5 can't move without somebody else having decided something
6 that won't be decided until the people move, you know.

7 DR. STEINDLER: Until somebody moves, right.
8 Exactly.

9 COMMISSIONER ROGERS: It's a circular problem.

10 DR. STEINDLER: Right.

11 COMMISSIONER ROGERS: Thank you.

12 CHAIRMAN ZECH: Commissioner Curtiss?

13 COMMISSIONER CURTISS: Just to pick up on that
14 same point and make sure I understand what you mean by the
15 development of waste acceptance criteria. When you say
16 that. do you mean not only the criteria for accepting the
17 waste in the form that it's accepted in, but criteria that
18 would go to the facility at which it is to be stored or
19 disposed?

20 DR. STEINDLER: Yes. We, as we appropriately
21 pointed out, should not assume that the Department would
22 be interested in immediately moving that waste to the
23 Repository, once it became available.

24 There are undoubtedly suitable options,
25 depending on the waste that's involved, that do not

1 involve the Repository. At this point, guidance on what
2 the criteria would be for the facility and its
3 performance, with whatever the waste form that you happen
4 to be interested in, are not very clear. It's that kind
5 of guidance now.

6 COMMISSIONER CURTISS: I gather one of the
7 problems in this area has been that there's been
8 considerable uncertainty over just how much greater-than-
9 Class-C waste is out there, and what the source will be,
10 particularly in the decommissioning area where a lot of
11 this greater-than-Class-C waste may be generated.

12 What's your view on the feasibility of
13 developing acceptance criteria at this stage, given the
14 uncertainty over the volumes and sources of the waste to
15 be generated?

16 DR. STEINDLER: My estimate would be that one
17 ought to be able to classify the greater-than-Class-C
18 waste composite inventory, into a number of classes, the
19 nuclides of which represent identifiable risks and, as a
20 consequence, if those classes of waste could be arrayed in
21 an appropriate way, you should be able to identify, even
22 without having a really close idea of how much material is
23 involved, what kind of protection one needs for a
24 particular, say, a neutron source.

25 You may not care whether you have one or a

1 hundred. but you do have some measure of what any
2 particular source -- encapsulation, for example, of the
3 waste package -- should look like.

4 COMMISSIONER CURTISS: It looked to me like that
5 is a difficulty with that kind of approach. Arraying the
6 risk of the various types of greater-than-Class-C waste
7 from high to low was essentially what the staff was
8 trying to do in its original rulemaking to define high-
9 level waste and, after six or eight years of working on
10 that. this proposal that we have now may reflect a view
11 about visibility as a technical matter of parsing at that
12 finally, and saying -- and classifying the waste in a way
13 where you would say "this is high-level waste and, by
14 definition, would have to go into a repository, and there
15 are intermediate and lower categories of waste that can go
16 elsewhere".

17 Is it your sense that the technical ranking of
18 the types of waste is something that could be pursued in a
19 manner along the lines of what was originally proposed in
20 the high-level waste definition rulemaking?

21 DR. STEINDLER: I'm not sure about how it was
22 originally proposed, but it's certainly my sense that I
23 haven't seen anything that prevents me, a priori, from
24 believing that that kind of risk analysis can be made,
25 depending on the knowledge of what's in the waste, no.

1 COMMISSIONER CURTISS: Have you had a chance to
2 take a look at DOE's views on this subject because I
3 gather they're talking about going back to the original
4 approach and trying to define what is and isn't high-
5 level waste, rather than simply saying in the absence of
6 another facility to dispose of the waste, it will all go
7 into the Repository.

8 DR. STEINDLER: I'm aware of the DOE position
9 only in its broad outlines. We've not had -- the
10 Committee has not addressed the issue by asking DOE to
11 come in and tell us about it, but we certainly can.

12 CHAIRMAN ZECH: I think your suggestions to the
13 staff regarding the range of options was certainly a
14 sensible one, and the staff incorporated, as you have told
15 us here this morning.

16 Do you have anything specific in mind as
17 regarding options, other than the geologic repository, for
18 acceptable storage of, or disposal of, greater-than-Class-
19 C waste?

20 DR. STEINDLER: No, not specific, and we've not
21 addressed that issue at all. It comes under the umbrella
22 heading of "greater confinement" in the common parlance,
23 and greater confinement can be almost anything you would
24 care to have between a repository --

25 CHAIRMAN ZECH: Do you know if anybody has

1 really seriously addressed what might be greater
2 confinement?

3 DR. STEINDLER: Oh, yes.

4 CHAIRMAN ZECH: Yes. There's a fair amount of
5 --

6 DR. STEINDLER: The Department, as far as I
7 know, has issued a number --

8 CHAIRMAN ZECH: A fair amount of effort has been
9 -- gone on in that regard.

10 DR. STEINDLER: Yes.

11 CHAIRMAN ZECH: I think the only thing that the
12 Commission, when we've discussed this in past meetings,
13 it's simply been our view that we need to come up with a
14 repository for greater-than-Class-C waste, but we've been
15 told that the amount of it is rather small, and it does
16 vary in its radiation levels, and it would seem that
17 storing it in the repository would certainly be a very
18 acceptable way to store it.

19 I think we'd be very amenable to keeping an open
20 mind about other options, but I do believe that the other
21 options should perhaps be weighed against the advantages
22 and disadvantage of storing it in the repository.

23 So, whereas I certainly agree with your
24 suggestion to keep an open mind to the range of options--
25 and I think it's appropriate that you've included that--

1 I do feel that the repository would certainly be an
2 acceptable, but I think we should look at the advantages
3 and disadvantages of the various options, before we make
4 any final decision.

5 We were briefed last month by the staff, on the
6 storage of surplus seal sources by the Department of
7 Energy, and have you had an opportunity to review that
8 proposal at all, yet?

9 DR. STEINDLER: Well, we're aware of the fact
10 that you've been briefed, but the proposal to store seal
11 sources that we've looked at -- I mean, the paper that
12 we've looked at was not so specific as to identify a
13 particular facility or, for that matter, a particular
14 source term.

15 CHAIRMAN ZECH: Well, I think your views on
16 that, when you get a chance, would be very useful to the
17 Commission.

18 Are there any other comments from my fellow
19 Commissioners? Commissioner Rogers?

20 COMMISSIONER ROGERS: Yes. I just wondered if
21 -- you just touched -- mentioned the words, but you didn't
22 say very much about mixed waste, and I don't want to open
23 up a whole new round of discussion, but I wonder if you've
24 been following the EPA-NRC progress there.

25 We understand that from, I think, your last

1 meeting with us or the meeting in October, that you
2 reported that NUMARC was preparing a report to be due in
3 January. Has that report come out, and have you had a
4 chance to look at it? Any thoughts on it, comments on it?

5 DR. MOELLER: I don't believe we've seen it.
6 Now, we are -- mixed waste is on the agenda for this
7 meeting. Several of us, informally, have been -- well,
8 we've been considering the matter for some months, and
9 several of us, informally, have asked whether, again, our
10 committee might serve a very useful purpose, by bringing
11 into one room industry and the staff, et cetera, DOE, and
12 just seeing if we couldn't get a -- you know, begin to
13 resolve the issue, begin to reach a consensus on it.

14 There are, of course, political -- a political
15 side to it, as you well know, in the dual jurisdiction or
16 responsibility, and most of the industry groups say "we
17 wish that NRC could handle it alone". I suppose there's
18 not a whole lot we could do there, but we certainly plan
19 -- we're going to discuss it at this meeting. We
20 certainly have it on the agenda for future meetings.

21 And while we're talking about West Valley, as
22 you had raised, Commissioner Rogers, there may be mixed
23 waste generated there.

24 And back on the greater-than-Class-C, of course,
25 we looked at it a year or so ago, and we were told the

1 same as Chairman Zech just said, that the volumes were
2 extremely small and, you know, it would only take up a
3 little. tiny corner of the repository, and just go ahead
4 with it, and that seemed like a reasonable option and,
5 yet, what DOE simply is asking is, don't require the
6 repository, let us have the other options.

7 And as we dig into it, we're finding -- as these
8 seal^{ed} sources now have been brought up, we're finding
9 additional greater-than-Class-C waste. One thing we
10 really need to once, again, do is an inventory or a
11 projection of how much of this there's going to be.

12 Another comment on it is, when we were looking
13 at Yucca Mountain -- of course, the first repository is
14 limited by the Congress, to so-many -- 70,000, you know,
15 whatever metric tons of waste. Well, we're told that it's
16 quite possible that Yucca Mountain's capacity will not be
17 that large.

18 Well, if this is, indeed, the case, then it may
19 be more of a push to put greater-than-Class-C waste
20 elsewhere, or find greater confinement. And, of course,
21 we have reviewed the greater confinement strategies
22 because, as you know, many states have vetoed shallow, or
23 what we'd call shallow-land burial, and say, we want
24 greater confinement in concrete bunkers, et cetera.

25 So, there are -- there's any degree or any level

1 of confinement that you want. It can be provided and if,
2 indeed, it's a whole lot cheaper than a repository and if
3 it protects the public health and safety, then it should
4 be considered.

5 COMMISSIONER CURTISS: Let me jump back to mixed
6 waste, as long as the topic came up. One of the -- I
7 guess, one of the troubling things over the years, as I've
8 looked at that issue, is that it's unclear to me what we
9 get, in addition to the requirements that we impose under
10 our regulations, with the imposition of the subtitle (c)
11 requirements of RCRA for mixed waste, particularly where
12 the predominant hazard may be radioactive.

13 To put it differently, don't we essentially
14 achieve the objective, from a health and safety
15 standpoint, that RCRA would achieve by laying on the
16 requirements that we've laid on for low-level waste
17 facilities?

18 I guess I'd be very interested, as you look at
19 the question of how much progress we're making generally,
20 if you could focus from a technical standpoint on whether
21 you see the requirements that we have in place essentially
22 providing the kind of protection that we would get with
23 the addition of the RCRA requirements or, alternatively,
24 do we get an additional level of protection from the RCRA
25 requirements that would warrant going through the turmoil

1 that I think many of the states in the low-level waste
2 area are going through, that DOE's going through now on
3 the WIPP facility, and that we may go through in other
4 contexts. if we don't resolve it.

5 Thank you.

6 DR. STEINDLER: On a purely qualitative basis,
7 the advantage that we have in the radioactive business is
8 that our problem goes away, by decay, whose rates we can
9 identify fairly.

10 The final degradability of some of the material
11 that's come under the heading of mixed waste is not only
12 uncertain. but the rates are difficult to predict, and
13 it's in that sense that the protection that we afford
14 being time-dependent may be different, but to assess that
15 in a particular way is the question that you're asking,
16 and I think one could certainly address that by looking at
17 what's known on the disappearance of the hazard from the
18 chemical portion of the mixed waste.

19 COMMISSIONER CURTISS: Well, I'd be interested
20 in what you have to say on that. Thank you.

21 CHAIRMAN ZECH: Any other comments?

22 (No response.)

23 Well, let me, on behalf of the Commission, thank
24 you very much for a timely and informative briefing this
25 morning. The safe disposal of nuclear waste is a

1 significant public issue that requires the best efforts of
2 all of us involved, and as advisors to the Commission,
3 your role is a very important one.

4 I believe I speak on behalf of all of my
5 colleagues when I can say that we're very pleased with the
6 committee's efforts to-date, to keep up-to-date and to
7 keep abreast of the significant waste management issues.

8 I note that you are working very closely with
9 the NRC staff, and you're providing periodic
10 recommendations to the Commission prior to the Commission
11 making decisions, and that's very important. And I'd like
12 to also comment on what I sense anyway, I believe, and my
13 colleagues would join with me, as a positive and
14 constructive, helpful approach to your assignment as the
15 Advisory Committee on Nuclear Waste.

16 I think that attitude is very helpful to the
17 Commission, and I want to emphasize that. We appreciate
18 it very much. You have a very large task to perform for
19 us. Your advise is extremely important to us, and we
20 appreciate very much the way you're going about your
21 business.

22 I think it's important that we continue to meet
23 periodically with the committee in order to keep informed
24 about the thoughts you have, the recommendations you have,
25 the comments you have, so that we can, in time, make the

1 best decisions possible.

2 We thank you very much for your information this
3 morning and, again, for the constructive approach you're
4 taking to your duties on the Advisory Committee for
5 Nuclear Waste. We appreciate it very much.

6 Are there any other comments? Yes?

7 COMMISSIONER ROGERS: Just that I want to say
8 that I thought this was a very, very helpful briefing, and
9 that we covered an enormous amount of ground in a very
10 short time with great clarity, and I appreciate it very
11 much. I think that the committee is doing a superb job.

12 DR. MOELLER: Well, thank you, sir, the feeling
13 is mutual. We admire what you're doing.

14 CHAIRMAN ZECH: All right. Thank you very much.
15 Other comments?

16 (No response.)

17 Thank you, again. We stand adjourned.

18 (Whereupon, at 11:08 a.m., the meeting was
19 adjourned.)

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Agenda: To review and evaluate research proposals as part of the selection process for awards.

Reason for Closing: The proposals being reviewed include information of a proprietary or confidential nature, including technical information; financial data, such as salaries; and personal information concerning individuals associated with the proposals. These matters are within exemptions (4) and (5) of proposal U.S.C. 552b(c), Government in the Sunshine Act.

April 11, 1989.

M. Rebecca Winkler,

Committee Management Officer.

[FR Doc. 89-8903 Filed 4-13-89; 8:45 am]

BILLING CODE 7550-01-0

Physics Advisory Panel Meeting

The National Science Foundation announces the following meeting.

Name: Advisory Committee for Physics Meeting.

Date and Time: May 8, 1989—9:00 a.m. to 5:00 p.m. (OPEN); May 9, 1989—8:30 a.m. to 11:30 a.m. (CLOSED), 1:00 p.m. to 5:00 p.m. (OPEN).

Place: Room 540, National Science Foundation, 1800 G Street NW., Washington, DC 20550.

Type of Meeting: Part Open.

Contact Person: Dr. Marcel Bardou, Director, Division of Physics, Room 941, National Science Foundation, Washington, DC 20550, (202) 357-7065.

Minutes: May be obtained from contact person listed above.

Purpose of Meeting: To discuss issues of program balance in the Division of Physics with Physics Division Staff and the report of the Cerny Subcommittee to the Advisory Committee for Physics.

Agenda:

Open: May 8, 1989 a.m. and p.m.—Review of program balance in the Physics Division.

Closed: May 9, 1989 8:30 a.m.—11:30 a.m.—To review and evaluate research proposals, as part of the selection process for awards.

Open: May 9, 1989 p.m.—Discussion of long range planning issues.

Reason for Closing: The proposals being reviewed include information of a proprietary or confidential nature, including technical information; financial data; and personal information concerning individuals associated with the proposals. These matters are within exemptions 4 and 5 of the Government in the Sunshine Act.

M. Rebecca Winkler,

Committee Management Officer.

April 11, 1989.

[FR Doc. 89-8904 Filed 4-13-89; 8:45 am]

BILLING CODE 7550-01-0

NUCLEAR REGULATORY COMMISSION

Generic Letters

This notice is to announce that generic letters issued by the U.S. Nuclear Regulatory Commission (NRC) can no be purchased through a subscription service from the Superintendent of Documents, U.S. Government Printing Office (GPO), P.O. Box 37082, Washington, DC 20013-7082. The GPO telephone number is (202) 275-2080. Copies of generic letters are also available from the National Technical Information Service (NTIS), Springfield, VA 22161. The NTIS telephone number is (703) 487-4650. If assistance or clarification is needed, contact Hazel Smith, NRC, on (301) 492-1287.

Dated at Rockville, Maryland this 6 day of April 1989.

For the Nuclear Regulatory Commission,
John T. Larkins,
Chief, Planning, Program and Management Support Branch, Program Management, Policy Development and Analysis Staff, Office of Nuclear Reactor Regulation.

[FR Doc. 89-8903 Filed 4-13-89; 8:45 am]

BILLING CODE 7550-01-0

Advisory Committee on Nuclear Waste; Meeting

The Advisory Committee on Nuclear Waste (ACNW) will hold a meeting on April 26-28, 1989, Room P-110, 7920 Norfolk Avenue, Bethesda, MD. Portions of this meeting will be closed to discuss information the release of which would represent a clearly unwarranted invasion of personal privacy 5 U.S.C. 552b(c)(6). Notice of this meeting was published in the Federal Register on March 21, 1989 (54 FR 11589). The following topics will be discussed:

Wednesday, April 26, 1989—8:30 a.m.—5:00 p.m.

1. Comments by ACNW Chairman regarding items of current interest (Open).
2. Technical Position on Post Closure Seals in an Unsaturated Media (Open).
3. Preliminary Findings of the waste Confidence Review Group (Open).
4. Executive Session—Discussion of Draft ACNW Reports (Open).

Thursday, April 27, 1989—8:30 a.m.—5:00 p.m.

5. Review Items to be Discussed with Commissioners (Open).
6. Meeting with the Commissioners at One White Flint North (Open).
7. Disposal of Mixed Waste (Open).
8. Status Report, Summary of the Site Characterization Plan Review and

Production of the Site Characterization Analysis (Open).

9. Executive Session—Preparation of ACNW Reports (Open).

Friday April 28, 1989—8:30 a.m.—4:30 p.m.

10. Below Regulatory Concern (Open).
11. Licensing Support Systems for the High-Level Waste Repository (Open).
12. Administrative Session—Anticipated and Proposed Committee Activities, Future Meeting Agenda, and Organizational Matters (Closed).
13. Executive Sessions—Completion of ACNW Reports (Open).

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 practicable so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements. Use of still, motion picture and television cameras during this meeting may be limited to selected portions of the meeting as determined by the ACNW Chairman. Information regarding the time to be set aside for this purpose may be obtained by a prepaid telephone call to the Executive Director of the Office of the ACRS, Mr. Raymond 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 if such rescheduling would result in major inconvenience.

Dated: April 10, 1989.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 89-8930 Filed 4-13-89; 8:45 am]

BILLING CODE 7550-01-0

Advisory Committee on Reactor Safeguards, Subcommittee on Thermal Hydraulic Phenomena; Postponed Meeting

The Federal Register published Thursday, March 30, 1989 (54 FR 13129)



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

**SCHEDULE AND OUTLINE FOR DISCUSSION
9TH ACNW MEETING
APRIL 26-28, 1989
BETHESDA, MARYLAND**

Wednesday:

April 26, 1989, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

- | | | |
|--|---|--|
| 8:30 - 8:40 a.m. | [| 1. Chairman's Comments (Open)
1.1) Opening Remarks
1.2) Items of Current Interest |
| 8:40 - ^{11:35} 12:00 Noon
TAB 2----- | [| 2. Technical Position on Post Closure Seals
in an Unsaturated Media (OSM) (Open) |
| ⁶⁵ 10:15 - ²⁰ 10:30 a.m. | | ** BREAK ** |
| ^{11:35} 12:00 -1:00 p.m. | | ** LUNCH ** |
| 1:00 - ^{2:30} 3:15 p.m.
TAB 3----- | [| 3. Preliminary Findings of the Waste Confidence
Review Group (SJSP) (Open) |
| ^{2:30} 3:00 ^{2:45} 3:15 p.m. | | ** BREAK ** |
| ^{2:45} 3:15 p.m. | | 4. Executive Session (Open)
Discussion of Draft Letters on:
a. Waste Confidence
b. Post Closure Seals |
| 4:00
5:00 p.m. | | RECESS |

Thursday:

April 27, 1989, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

- | | |
|--|--|
| 8:30 - 9:10 a.m.
TAB 5----- | 5. Review Items to be Discussed with Commissioners
(Open) |
| 9:20 a.m. | Travel to One White Flint North (OWFN) |
| 10:00- ¹⁰ 11:30 a.m. | 6. Meeting with the Commissioners at OWFN (Open)
Topics include:
(DWM) - Status of the SCP/SCA Review
(CYS) - West Valley Demonstration Project
(MJS) - Greater-than-Class-C Radioactive Waste
(DWM) - Division of High-Level Waste Management
FY-89 Program |

Return to Phillips Building, Bethesda, Md.

[= Transcribed sessions

1:15 p.m. TAB-----7. Disposal of Mixed Waste (OSM) (Open)
³⁰
2:45 p.m.-2:50 p.m. * * BREAK * *
4:00
3:00 p.m. TAB-----8. Status Report, Summary of the SCP Review and
Production of the SCA (SJSP) (Open)
4:25
4:00 p.m. 9. Executive Session (Open)
Preparation of ACNW Reports
³⁵
5:00 p.m. * * RECESS * *

Friday:

April 28, 1989, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

8:30 a.m. 10. Below Regulatory Concern (OSM) (Open)
TAB 10A-----a. Update on the BRC Policy Statement
TAB 10B-----b. Procedures for the expedited handling of
petitions for the disposal of radioactive
waste streams that are below regulatory
concern.
²⁵
10:25 a.m. * * BREAK * *
⁵⁰
10:30 a.m. TAB-----11. Licensing Support System for the High-Level
Waste Repository (OSM) (Open)
³⁰ ³⁰
12:00-1:00 p.m. * * LUNCH * *
³⁰
1:00-2:30 p.m. 12. Administrative Session:
Anticipated and Proposed Committee Activities,
Future Meeting Agenda, and organizational
matters as appropriate
2:30 p.m. * * BREAK * *
2:45 p.m. 13. Executive Session (Open)
Completion of ACNW reports considered at this
meeting.
⁰⁰
4:20 p.m. ADJOURN