

CERTIFIED

MINUTES OF THE 49TH ACNW MEETING
DECEMBER 17-18, 1992

- TABLE OF CONTENTS -

	<u>Page</u>
I. Chairman's Report (Open)	1
II. NRC Staff Evaluation of U.S. Department of Energy's Requested Resolution of Site Characterization Analysis Objection #1 Regarding the Exploratory Studies Facility (ESF) Title I Design Control Process (Open)	3
III. Development of Methods to Address Structural Deformation in the Characterization and Performance of a Geologic Repository (Open)	9
IV. Report on the DOE Workshop on the Use of Expert Judgment, Held November 18-20, 1992 (Open)	13
V. Working Group Chairman's Report on the Performance Assessment Working Group Meeting, Held December 16, 1992 (Open)	14
VI. Commission Meeting with Representatives of the U.S. Department of Energy (Open)	15
VII. Executive Session (Open)	15
A. Reports	
• Iterative Performance Assessment Phase 2	15
• Impact of Long-Range Climate Change in the Area of the Southern Basin and Range	16
B. Impact of Long-Range Climate Change in the Area of the Southern Basin and Range	16
C. Standards for Permissible Residual Radioactive Contamination	16
D. Scope of ACNW Activities	16
E. Move to the Two White Flint North Building	16
F. ACNW Future Activities	16
G. Future Meeting Agenda	
. 18	

- APPENDICES -

- I. Federal Register Notice
- II. Meeting Schedule and Outline
- III. Meeting Attendees
- IV. Future Agenda and Working Group Activities
- V. List of Documents Provided to the Committee

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MINUTES OF THE 49TH MEETING OF THE
ADVISORY COMMITTEE ON NUCLEAR WASTE
DECEMBER 17-18, 1992
BETHESDA, MARYLAND

The 49th meeting of the Advisory Committee on Nuclear Waste was held Thursday and Friday, December 17-18, 1992, in the Conference Room, 7920 Norfolk Avenue, Bethesda, Maryland. The purpose of this meeting was to discuss and take appropriate actions on the items listed in the attached agenda.

A transcript of selected portions of the meeting was kept and is available in the NRC Public Document Room at the Gelman Building, 2120 L Street, N.W., Washington, D. C. [Copies of the transcript taken at this meeting may be purchased from Ann Riley & Associates, Ltd., 1612 K Street, N.W., Washington, D. C. 20006.]

Dr. Dade W. Moeller, Committee Chairman, convened the meeting at 8:30 a.m. and briefly reviewed the schedule for the meeting. He stated that the meeting was being conducted in conformance with the Federal Advisory Committee Act. He stated that the Committee had received neither written comments nor requests from members of the public for time to make oral statements. However, he invited members of the public, who were present and had something to contribute, to let the ACNW staff know so that time could be allocated for them to make oral statements.

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

I. CHAIRMAN'S REPORT (Open)

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

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

- Ms. Serita Sanders is on a 3-month rotational assignment to the ACNW/ACRS office as part of her intern program as a new NRC employee.
- The average collective radiation dose per reactor at NRC-licensed power plants decreased 24 percent in 1991 compared to 1990. The average collective radiation dose per reactor was 253 person-rem, down from 333 person-rem and presents the lowest average dose in 22 years. The reduction was due to better outage planning and a reduction in the frequency and duration of outages.

- The Board on Radioactive Waste Management, National Research Council, has published its "Review of Analyses by the U.S. Department of Energy of Selected Technical Issues in the Environmental Protection Agency Standards for High-Level and Transuranic Radioactive Wastes (40 CFR 191)." [Copies of the report were made available to ACNW members and staff.]
- In a memorandum dated November 6, 1992, the Licensing Support System (LSS) Administrator presented a status report on the work of the Center for Nuclear Waste Regulatory Analyses (CNWRA) to help establish a priority loading schedule for backlogged LSS records. On the basis of a review of the CNWRA report, the LSS Administrator has concluded that the method presented was not the best for determining priority categories. As a result, the work has been suspended until there is a firm plan and schedule for the LSS.
- As outlined in SECY-92-337, the NRC staff is preparing a Staff Action Plan for regulating major materials licensees. During a briefing on this subject, the Commissioners suggested that, instead of the NRC expending its resources on the team assessments, the NRC staff investigate whether fuel facility owners/operators would like to form an organization, similar to the Institute of Nuclear Power Operations (INPO), to assist in policing themselves.
- Several reports have been issued that have a direct bearing on the enhanced participatory rulemaking underway on the development of radiological criteria for decommissioning. Dr. Moeller suggested that the Committee may want a briefing on the Ditty Code which directly applies to this issue. The Committee agreed to consider this suggestion.
- In late 1991, the U.S. Council on Energy Awareness (USCEA) created a communications network for the nation's low-level radioactive waste generators. Through this effort, USCEA is serving as a clearinghouse for information and as the focal point for an industry-wide network through which waste generators can share materials, strategies and techniques. Dr. Moeller suggested that the Committee may want a briefing on this item. The Committee agreed to consider this suggestion.
- Several recent events related to the siting of low-level radioactive waste disposal facilities were identified,

including the rejected proposal for an LLW site in Illinois. Dr. Steindler suggested that the Committee become more knowledgeable about the zero release concept and what implications there are for ever being able to establish an LLW repository. The Committee agreed to consider this suggestion.

- Mr. Carlton Kammerer, Director, NRC State Programs, participated in a Conference of Radiation Control Program Directors (CRCPD) review of the Alaska Radiation Control Program on November 2-6, 1992, in Juneau, Alaska. Dr. Moeller expressed interest in learning more about the review process conducted by CRCPD with NRC staff participation.

Dr. Steindler discussed the recent action by the Commission on approving the decontamination and decommissioning of Fort St. Vrain Nuclear Generating Station. Dr. Steindler noted that the tritium and liquid waste is of particular interest because it seems that the Commission may allow dilution to meet the U.S. Environmental Protection Agency (EPA) criteria. He suggested that the Committee learn what the NRC staff's policy is on this issue. Dr. Steindler also pointed out that the Committee may want to address how to develop a risk-based regulatory approach for the disposal of waste.

II. NRC STAFF EVALUATION OF U.S. DEPARTMENT OF ENERGY'S REQUESTED RESOLUTION OF SITE CHARACTERIZATION ANALYSIS OBJECTION #1 REGARDING THE EXPLORATORY STUDIES FACILITY (ESF) TITLE I DESIGN CONTROL PROCESS (Open)

[Note: Mr. Giorgio Gnugnoli was the Designated Federal Official for this portion of the meeting]

Ms. Charlotte Abrams, Senior Project Manager, Division of High Level Waste Management (HLWM), Office of Nuclear Materials Safety and Safeguards (NMSS), provided an introduction and overview of the NRC staff evaluation of the U.S. Department of Energy's (DOE) requested resolution of the Site Characterization Plan (SCP) Objection #1. Dr. Mysore Nataraja, Section Leader, Geotechnical Engineering Section, Geology and Engineering Branch, HLWM, NMSS, presented the bases for resolving Objection 1 from the Site Characterization Analysis (SCA). Ms. Abrams clarified that Objection #1 has been resolved at the staff level only, which means that the issue could be raised again during licensing by the Commission or the Licensing Review Board. Ms. Abrams indicated that an NRC objection is a concern serious enough that NRC staff recommend that DOE delay site characterization work in this area until the concern is resolved. She indicated that lifting an

objection means that the NRC staff considers the concerns relating to the objection to be resolved; however, NRC staff is obligated to continue to evaluate activities related to the objection, and objections can be reopened if needed.

Ms. Abrams mentioned that DOE is required by 10 CFR Part 60 to provide NRC with a conceptual design of the geologic operations area and the plans for site characterization excavation. The NRC staff expects DOE to describe how the ESF design will tie into the testing program, what are the potential impacts of the ESF on waste isolation, and what is the relationship of the ESF design to the repository design.

Ms. Abrams provided a brief chronology of Objection #1. In December 1988, DOE issued the SCP. In July 1989, the NRC staff issued the SCA. In December 1990, DOE responded to the SCA. In January 1991, and July 1991, respectively, DOE issued the Calico Hills Risk Benefit Analysis (CHRBA) and the Exploratory Studies Facility Alternatives Study (ESFAS). In September 1991, NRC requested information on how the CHRBA and ESFAS addressed SCA issues. In September 1991, DOE and NRC held a technical exchange on the ESF, during which DOE explained the design control process and plans for implementing it. In November 1991, DOE requested closure of Objection #1. In March 1992, DOE provided additional information on how CHRBA and ESFAS address SCA issues (the ESF/CHRBA walk-through), and in November 1992, the NRC staff concluded that Objection #1 is resolved. At this time, the NRC staff decided not to review the entire ESFAS and CHRBA, as much of the information on the ESF design is still being revised. Ms. Abrams indicated that DOE then had selected a preferred alternative design out of 34 possible designs, but the NRC staff has not yet seen the preferred alternative. She stressed that the NRC staff will closely follow any design changes by reviewing DOE progress reports and participating in the design reviews, as well as conducting audits of the ESF design review process to ensure implementation of the design control process.

Dr. Hinze questioned whether DOE has issued any revised study plans as a result of the new ESF ramp design. Ms. Abrams indicated that the NRC staff presumed that DOE would update the five original study plans pertaining to the ESF to reflect the new design and tests to be conducted in the ESF. She indicated that these should be submitted to the NRC in mid-1993. Dr. Hinze inquired whether the NRC staff is satisfied that the proposed tunnel boring machine (TBM) approach will provide adequate geologic information compared to the use of the more conventional drill and blast approach. Dr. Keith McConnell, NMSS, responded that NRC has received a study plan that addresses the use of drill and blast technology, but the NRC staff does not plan to review the study plan because DOE is revising it to reflect the TBM technology. He added that DOE will

provide some level of detail about its methodologies for geologic mapping in the revised study plan. He also commented that the staff has discussed at length the pros and cons of the TBM and drill and blast methods, and have informally concluded that either method should allow many opportunities for geologic data collection.

Dr. Mysore Nataraja introduced himself and summarized the content of his presentation. He indicated that the NRC staff had two major concerns with the ESF as presented by the DOE in the SCP, one relating to the adequacy of the design control process under which the Title I design of the ESF was to be performed, and the other relating to the adequacy of the Title I design. Specific concerns included a design control process that did not consider all applicable 10 CFR 60 regulations and ignored certain technical criteria. In addition, the Title I design appeared to impair the ability to conduct needed tests for a sufficient duration, and appeared to require major revision to address staff concerns raised in the SCA.

Dr. Nataraja reviewed the six bases for Objection #1, and how each was resolved. He summarized his review of the six bases by saying that many of the points comprising each of the bases are in themselves not serious, but in total, they indicated a trend of a potentially flawed process that could lead to an unacceptable design.

Dr. Nataraja summarized how the six bases were resolved by first addressing the design control process, then the Title I design. He reviewed the events contributing to the NRC staff's resolution of Objection #1, including the DOE submission of the ESFAS and CHRBA, the walk-through, the NRC staff participation in the design reviews and the Nuclear Waste Technical Review Board meetings on ESF, the NRC observation of DOE surveillances and audits of the design control process, and the NRC/DOE technical exchange on DOE's modified design control process. During the technical exchange, NRC found that DOE had in place documented and approved procedures for considering specific 10 CFR part 60 design requirements, as well as adequate integration of technical data, two major concerns cited previously by the NRC staff. Dr. Nataraja indicated that, overall, the NRC staff is satisfied that the current ESF Title II design activities are being performed under the NRC approved quality assessment (QA) program, and found DOE to have addressed NRC staff concerns relating to the design control process.

Concerning the ESF design itself, the NRC staff found that the preferred ESF option addresses, in a conceptual way, most of the important concerns raised. In addition, most of the bases points have been addressed. Dr. Nataraja indicated that one of the major issues was that originally DOE had not considered alternative

design features important to waste isolation. However, in its revised design, DOE has now considered many alternatives, including alternative modes of entry, such as shafts vs. ramps, alternative excavation techniques, alternative locations of entry, alternative conceptual designs for each ESF design considered, and various testing strategies for different drifting layouts. He noted that the proposed alternative does not preclude in-situ waste package testing and seal testing. In addition, the proposed alternative has a better potential for gathering adequate site data due to increase drifting, from 10,000 feet to 76,000 feet. He indicated that another major concern related to possible test interference in the original design. DOE has doubled the main test level area from 400,000 to 800,000 square ft. He added that DOE has included a phased approach to the ESF design, allowing for greater flexibility.

Dr. Nataraja concluded his presentation by summarizing the NRC staff's future activities relative to the ESF Title II design, including monitoring open comments and questions related to Objection #1, reviewing study plans and major design reports, continuing to observe DOE design reviews of various design packages, and monitoring the program through audits and surveillances from a QA and technical point of view.

Significant comments and questions from the ACNW members during the presentation include:

- Dr. Hinze questioned whether the NRC staff considered the issue of possible gully erosion on the east side of Exile Hill and its impact on the portal or portal seals to be resolved. Dr. Nataraja indicated that this concern was for the repository design, not the ESF. Dr. Hinze questioned why gully erosion was a concern for the repository, but was considered resolved as a concern for the portal for the ESF. Dr. Nataraja indicated that the staff has not reviewed the ESF Title II design or the portal design, and it will look into this issue later.
- NRC's second bases indicates that the Design Acceptability Analysis did not address many of NRC concerns, including the fact that DOE had not considered a known anomaly. Dr. Hinze asked whether a suspected fault associated with this anomaly was no longer thought to exist, given that the objection had been resolved. Dr. Nataraja replied that the resolution to this concern was not related to whether a fault was present, but rather, that DOE has in place a process to account for anomalies.
- Dr. Hinze questioned whether the NRC staff considered whether the ramp entry for the portal will allow suffi-

cient opportunity to evaluate hydrologic and geotechnical characteristics of the overlaying rock formations above the repository formation, and whether resolving Objection #1 implies to the DOE that the NRC staff has no concerns regarding the DOE's ability to collect this type of data. Ms. Abrams indicated that resolving Objection #1 only implies that NRC considers DOE to have an adequate design control process in place, and nothing more. Dr. Nataraja replied that DOE's current approach does not rule out a detailed hydrologic investigation of overlaying strata, but the details of such investigations will be reviewed in study plans and the ESF title II design.

Mr. John Linehan, NMSS, clarified that the NRC staff recognizes the need to send a letter to DOE indicating that, while DOE has satisfied NRC's concerns for the design and design control process at a broad general level, many specific issues and details must be resolved. The NRC staff plans to review the revised conceptual design to be submitted by DOE and to work with DOE to resolve many details. He added that, with respect to the hydrology of the overlaying material, the NRC staff expects DOE to submit study plans relating to this type of data collection that will interface with the conceptual design.

- Dr. Hinze asked whether the NRC staff has conducted sufficient analyses of the ESF ramp design, similar to the staff's review of the design presented in the SCP, and whether resolving the ESF Objection #1 precludes the opportunity to raise detailed questions and comments on the ESF ramp design. Ms. Abrams indicated that the NRC staff reviews updated information as reported in the progress reports submitted by DOE, and has the opportunity to raise objections, comments or questions based on its review. Dr. Hinze questioned the timeliness of DOE's progress reports. Ms. Abrams indicated that the NRC staff has notified the DOE that the reports are not being submitted in a timely manner. Dr. Nataraja added that comments, questions and objections can also be raised during NRC review of study plans.

Dr. Steindler pointed out that the DOE progress reports lack both sufficient detail and organization compared to the SCP, making it difficult for the NRC staff to analyze the information and develop comments and objections. He also noted that the objection on quality assurance was possibly closed out too early, given these concerns. He suggested that the NRC staff notify DOE regarding concerns on the quality of the progress reports.

- Dr. Pomeroy asked whether the DOE has provided information on the seismic design basis to resolve NRC's concerns, considering that the NRC staff has resolved the basis to this issue. Dr. Nataraja indicated that the broad concerns had been resolved, but some individual comments relating to Objection #1, such as the seismic design issue, are still open. He added that there will be other opportunities for DOE to resolve such open comments that are not in themselves of major concern.
- Dr. Moeller made the point that NRC's documentation of its resolution of Objection #1 is confusing in that it includes discussion of related comments and questions that have not yet been resolved, although Objection #1 is considered resolved.

Dr. Pomeroy agreed with Dr. Moeller and added that the bases to withdraw the objection, such as technical exchanges, etc., are not documented. As a result, the existing record does not adequately support NRC's withdrawal of Objection #1. Dr. Hinze added that the situation is made even more complicated in that the ESF design has changed dramatically since the original objection was made.

- Dr. Steindler questioned the implications for DOE to proceed with unresolved comments, questions, or objections, indicating that it is not obvious how important the objection/comment resolution process is to licensing. Ms. Abrams indicated that NRC has gone on record indicating that unresolved issues may result in an incomplete license application. Dr. Steindler indicated that, if this process contributed a great deal to licensing, a complete record of the basis for comment resolution is critical. Ms. Abrams mentioned a new open item tracking system to track comments and issues to assist in documentation. However, Mr. Linehan pointed out that this tracking system does not record the technical basis for resolving issues, and that they realize this is a program gap. He indicated that NRC was trying to modify procedures, such as trip report documentation, to help address this problem.

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

**III. DEVELOPMENT OF METHODS TO ADDRESS STRUCTURAL DEFORMATION IN
THE CHARACTERIZATION AND PERFORMANCE OF A GEOLOGIC REPOSITORY**
(Open)

[Note: Mr. Giorgio Gnugnoli was the Designated Federal Official for this portion of the meeting.]

Mr. Ronald Ballard, Chief, Geology and Engineering Branch, HLWM, made introductory remarks and introduced Mr. Steve Young, Geologist, Center for Nuclear Waste Regulatory Analyses (CNWRA), as the lead in geometric modeling techniques. He also introduced Dr. Gary Stirewalt, CNWRA in Washington, D.C., and Dr. Keith McConnell, Section Leader, Geology and Geophysics Section, HLWM.

Mr. Ballard indicated that there are two objectives to the geometric modeling work: 1) to develop methods to test the validity of assumptions made regarding structural deformation, and 2) to develop methods of forward modeling of structural deformation in the repository block for performance assessment. He summarized the status of ongoing and planned activities. He noted that prototype testing of 2-D geometric modeling was completed in September 1990, and that this presentation focuses on a report issued in November 1992 on application of the 2-D geometric modeling to Yucca Mountain. Future work includes mechanistic modeling of deformation at Yucca Mountain, due in fiscal years 1994-95, and 3-D modeling of Yucca Mountain, expected in fiscal years 1995-97.

Dr. Steindler asked for further clarification on the purpose of the work. Dr. Keith McConnell stated that they are trying to address two issues with the geometric modeling effort. One purpose is to develop the capability to evaluate the validity of DOE's conceptual models of structural deformation. Another purpose is to evaluate the scenarios presented by DOE involving potential fault displacement and its associated consequences. Mr. John Russell, CNWRA, added that the models used for this project were borrowed from the oil industry, and the CNWRA has not developed new models or even modified existing ones, but may need to do so in the future.

Dr. Steven Young introduced himself, as well as Dr. Gary Stirewalt and Dr. Alan Morris, Associate Professor of Geology at the University of Texas at San Antonio, members of the CNWRA structural geology team. Dr. Hinze inquired about obtaining copies of a recent report on geometric modeling of faulting at Yucca Mountain. Dr. McConnell indicated that he would try to provide copies to the ACNW members.

Dr. Young pointed out that the purpose of their task was to 1) develop methods for review and assessment of structural geologic models at Yucca Mountain, 2) determine the implications of

alternative models of extensional faults for use in performance assessment, and 3) use existing seismic data to assess structural geologic modeling of Yucca Mountain.

He stressed that tectonic modeling is important because the assessment of geologic hazards, such as volcanism, fault rupture, and earthquake seismicity, will be based on tectonic models. He pointed out that deep subsurface faulting cannot be tested because the data are too difficult to obtain, however, deep faults are manifested in surface geology.

Dr. Moeller asked the relevance of using models from the oil industry to project out into thousands of years when the oil industry does not use the models for this purpose. Dr. Young noted that the common problem is one of extrapolation. The CNWRA is using what is known about structural geometries at the surface to extrapolate fault geometries deep into the crust, similar to the oil industry. He added that the depth to which credible extrapolations can be made is unknown.

Dr. Hinze asked how their results are being used in performance assessment. Dr. Young indicated that they have had little input so far, but they are developing a 3-D conceptual geologic framework model, i.e., stratigraphy, faults, structural configurations, that will be used in performance assessment. In addition, they hope to provide quantitative information on relative seismic risks based on alternative fault geometry models.

Dr. Pomeroy asked for clarification regarding the various models being discussed. Dr. McConnell indicated that there are three basic models being examined in developing their review methodology. These are hazard models, 3-D framework models, and mechanistic models. The mechanistic models will be used to estimate risks of potential fault displacements as part of performance assessment.

Dr. Young described the Yucca Mountain region as a fault-controlled set of ridges and valleys. He explained that, until recently, there have been two principal fault models considered for Yucca Mountain. One model is a low-angle detachment system, comprised of a series of faults that curve and flatten out with depth. The other model is to assume that Yucca Mountain consists of planar faults, extending at depth to the brittle, ductile transition (i.e., > 15 km.). He explained that the seismic capability for the planar faults is much greater than the detachment type faults; thus, what the fault does at depth is indicative of the seismic hazard. He explained that the best-fitting model to Yucca Mountain is the detachment model. A third model that is now being considered is a variation to the detachment model.

Dr. Steindler asked whether the repository horizon was expected to be ruptured by either of the two types of fault systems. Dr. Young explained that this is possible, but the seismic capability is what is of concern. Dr. McConnell added that the seismic capability is mainly a concern for the pre-closure period in determining facilities important to safety.

Dr. Young described the general approach to the cross-section balancing technique, along with key assumptions and limitations. He explained that their intent is to examine existing cross-sections, such as those prepared by Scott and Bonk, to test their reasonableness given the known constraints and controls on the system, from geologic mapping and borehole data extending to about 1.5 km. The CNWRA is modeling the fault trajectories based on the structural geology observed at the surface and the borehole data to predict future deformation due to potential fault slippage. He explained that testing cross-section validity involves the process of retro-deformation, or removing fault displacement to return the cross-section to its pre-deformed state. The premise is that there should be geologic balance without major inconsistencies, i.e., conservation of mass and area. The process of retro-deformation involves first completing the fault trajectories, then running the fault backwards.

Fault trajectories are modelled based on the shape of the hanging wall block that becomes deformed as it is pulled apart from the foot-wall block, and collapses onto the fault or onto the foot wall. Dr. Young referred to this as a vertical-shear deformation mechanism. A key assumption is that the deformation mechanism, or mechanism by which the hanging-wall collapses, is the link between the deformed state hanging wall and the shape of the underlying fault. This allows using the shape of the hanging wall to model fault trajectories. It is also possible to conduct forward modeling of future deformation of the hanging wall based on the fault trajectory, which the CNWRA is doing.

Dr. Young pointed out that a major limitation with the method is that the cross-section must be a dip-slip section and contain the slip-vector in order to subtract out the slip. The method therefore cannot be used successfully if major strike-slip faults are present. He added that the CNWRA has not factored into their models the effects of folding, compaction, erosion, obtrusion, and sedimentation during the fault slip or distortional strain.

A discussion took place about the series of closely spaced faults that form in the hanging wall block as it moves across the fault. It was pointed out that these smaller fault zones can grow wider as the larger, bounding fault continues to move. Dr. Young pointed out that it is not certain whether the Ghost Dance Fault is a bounding fault, or one of the smaller internal slip faults. He

emphasized the importance of determining what kind of fault it is. He added that, at the very least, the implication is that future slip along the Ghost Dance Fault could cause deformation in the hanging wall that would propagate into the repository block.

Dr. Young mentioned that the data from the Amergosa Valley-1 (AV-1) reflection data line were incorporated to develop an alternative type of regional conceptual model to the planar and low-angle detachment models. The new model is a variation of the detachment model, which suggests that multiple or nested detachment models may be a better fit to Yucca Mountain. He noted that they plan to investigate this subject in more detail.

Dr. Young explained how they planned to use the balanced, structural interpretations being conducted as a basis to develop 3-D geologic framework models. These models will be comprised of separate blocks that can be examined individually, allowing rock properties and parametric data to be gridded for each block for use in performance assessment.

Dr. Young summarized the results of their modeling, as follows:

- 1) Detachment style faulting is the most likely model for Yucca Mountain.
- 2) Planar fault geometry models are not consistent with observed surface geometry at Yucca Mountain.
- 3) The AV-1 line suggests that alternative variations of multiple detachment models may be the most appropriate for Yucca Mountain.
- 4) The Yucca Mountain fault system persists eastward, an unknown distance, into the 40-Mile Wash.
- 5) Existing geologic cross-sections can be well balanced, or retro-deformed.

Dr. Pomeroy expressed concern that the detachment model for Yucca Mountain does not account for the deep focal depth (12-15 km.) for the Little Skull Mountain Earthquake.

Dr. Young acknowledged this inconsistency. Dr. McConnell explained that the modeling suggests that there is a Quaternary tectonic regime overprinted on a Miocene structural regime, thus what is seen at the surface is not a good indication of what is present at depth. Dr. Young added that while the structural geometry at Yucca Mountain is consistent with a listric, detachment model, there is evidence of deeper, planar faults adjacent to the Mountain. He added that it is possible for both creep from the detachment system

and seismic activity from the Miocene system to be operating simultaneously. He also noted that ground rupture is usually the result of seismic activity and that evidence of ground rupture exists at Yucca Mountain, in the form of basaltic ash occurring in fault zones, indicating that the fault was pulled apart. He indicated that they are looking at a regional pull-apart model to examine potential impacts to the Yucca Mountain fault system due to a large earthquake in the Furnace Creek Fault.

Dr. Young indicated that future work will include conducting forward modeling to predict the deformation to the hanging-wall block that holds the repository due to fault slip, and mapping of stress and strain patterns due to potential fault slips to assess the effect on major faults, such as the Ghost Dance Fault. In addition, they plan to pursue 3-D dynamic modeling. This may involve research and a collaborative effort with a company that is developing such models. He indicated that the U.S. Geological Survey and DOE were not very far along in this area. He noted that the effort has cost several thousand dollars, predominantly for technical assistance and research. He also added that they plan to publish their work in journals for wider peer review.

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

IV. REPORT ON THE DOE WORKSHOP ON THE USE OF EXPERT JUDGMENT, HELD NOVEMBER 18-20, 1992 (Open)

[Note: Mr. Giorgio N. Gnugnoli was the Designated Federal Official for this part of the meeting.]

The Committee was briefed by Mr. Steven Mays, Senior Fellow, ACNW, on the DOE-sponsored Workshop on the use of expert judgment in licensing a high-level radioactive waste repository, held on November 18-20, 1992, in Albuquerque, New Mexico.

Mr. Mays noted that the main issues and focus of the meeting were on the political, legal, and social implications of using expert opinion. Subsequent to the presentation, the Committee considered the following possible lines of inquiry into the subject area:

- a. Plan an interdisciplinary meeting with interested parties, including their legal representatives
- b. Plan a Working Group meeting that addresses the legal and technical resolution strategies; invite outside groups, such as the Nuclear Waste Technical Review Board, the Board on Radioactive Waste Management (National Research

Council), the State of Nevada, and other interested parties

- c. Invite representatives of the Office of the General Counsel (OGC) to brief the Committee on the admissibility and limitations of decisions based on the use of expert judgment. This briefing could include representatives of DOE and their Chief Counsel.

The Committee decided to consider these and other options further during upcoming meetings. No other action was taken at this time.

V. WORKING GROUP CHAIRMAN'S REPORT ON THE PERFORMANCE ASSESSMENT WORKING GROUP MEETING, HELD DECEMBER 16, 1992 (Open)

[Note: Mr. Giorgio N. Gnugnoli was the Designated Federal Official for this part of the meeting.]

The Committee was briefed by Dr. Pomeroy, on the Working Group meeting on performance assessment for the high-level radioactive waste (HLW) program, held by the ACNW on December 16, 1992. This meeting followed a two-day NRC/DOE Technical Exchange on this same topic that was held on December 14-15, 1992, which was attended by Drs. Pomeroy and Moeller. An objective of the Working Group meeting was to compare the NRC staff's Iterative Performance Assessment, Phase 2, with DOE's Total System Performance Assessment.

Although acknowledging the significant strides being made in HLW Total Systems Performance Assessment (TSPA), Dr. Pomeroy highlighted two areas of concern:

- a. Treatment of uncertainty in TSPA
- b. Use of expert judgment in TSPA.

The ensuing discussions revealed that the Committee members were also concerned about the differences between the approaches of NRC and DOE, including:

- a. Inconsistency in the definitions of scenarios and complementary cumulative distribution functions
- b. Inadequate validation mechanisms
- c. Inappropriately heavy reliance on "turnkey" mechanisms for evaluating sensitivity and uncertainty.

The results of the second phase of NRC's Iterative Performance Assessment will be documented in NUREG-1464. Copies will be forwarded to the Committee when available. [Mr. Giorgio Gnugnoli has the follow-up action on this item.]

During the discussion, Dr. Moeller noted that there were a number of related topics that would make good subjects for future working group meetings, including Dr. Hinze's suggestion for a working group meeting on the potential use of fractals in performance assessment.

Based on the Working Group meeting and additional discussions held on the first day of its 49th meeting, the ACNW prepared and issued a report providing comments on the Iterative Performance Assessment, Phase 2.

VI. COMMISSION MEETING WITH REPRESENTATIVES OF THE U.S. DEPARTMENT OF ENERGY (Open)

[Note: Mr. Giorgio N. Gnugnoli was the Designated Federal Official for this part of the meeting.]

The Committee traveled to the One White Flint North Building to observe the Commission meeting with Dr. Hugo Pomrehn, Under Secretary of Nuclear Energy, DOE, Dr. John W. Bartlett, Director, Office of Civilian Radioactive Waste Management, DOE, and Mr. Carl Gertz, Project Manager, Yucca Mountain Project Office, DOE. The Committee learned that DOE does not expect to meet the 1998 deadline for establishing a monitored retrievable storage (MRS) facility under the current legislation and has outlined in a letter to U.S. Senator Bennett Johnston, dated December 17, 1992, a proposal to broaden the possibilities by storing the waste at Federal government sites, such as Savannah River, as an interim measure. Dr. Pomrehn also discussed the development of a universal canister system for interim storage and transportation of HLW. Following this meeting, Dr. Pomeroy recommended that the Committee learn more about these canisters.

VII. EXECUTIVE SESSION (Open)

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

A. Reports

- Iterative Performance Assessment Phase 2 (Report to Robert M. Bernero, Director, Office of Nuclear Material Safety and Safeguards, dated December 22, 1992)

- Impact of Long-Range Climate Change in the Southern Great Basin (Report to Robert M. Bernero, Director, Office of Nuclear Material Safety and Safeguards, dated December 22, 1992)

B. Impact of Long-Range Climate Change in the Area of the Southern Basin and Range

The Committee completed and issued a report on the impact of long-range climate change in the southern Great Basin.

C. Standards for Permissible Residual Radioactive Contamination

The Committee was made aware of a draft position statement on "standards for permissible residual radioactive contamination" that has been prepared by the Scientific and Public Issues Committee of the Health Physics Society. The Committee plans to review this statement during its deliberations on this issue.

D. Scope of ACNW Activities

The Committee discussed a draft memorandum that would delineate areas of interest to the Committee. This draft (proposed for submittal to Robert M. Bernero, Director, Office of Nuclear Material Safety and Safeguards) will be discussed further during the 50th ACNW meeting, January 27-28, 1993.

E. Move to the Two White Flint North Building

Mr. Michael MacWilliams, Chief, Operations Support Branch, ACNW, met with the Committee to answer questions on the planned conference room in the Two White Flint North building and the physical security plans. Mr. Mark Stella, Senior Fellow, ACNW, distributed a questionnaire on an advanced information management system. Committee members were asked to complete the questionnaire and return it to Mr. Stella.

F. ACNW Future Activities

The Committee agreed to plan to hold two meetings away from Bethesda, Maryland, during 1993. The ACNW staff was requested to explore holding the May or June meeting near the Whiteshell Nuclear Research Laboratories and the Canadian Underground Research Laboratory, Canada, and the October meeting in Las Vegas, Nevada.

The Committee agreed to coordinate with the NRC staff on an analysis of the three principal HLW standard issues that the National Academy of Sciences will be addressing as a result of

the Energy Policy Act of 1992. Additional discussion on this topic will be held during the 50th ACNW meeting.

Dr. Moeller recommended that Mr. Charles Meinhold, President of the National Council on Radiological Protection and Measurements (NCRP), be invited to address the Committee on these issues. Dr. Moeller reconfirmed his recommendation that Dr. John Cooper, Head, Environmental Assessments Department, National Radiological Protection Board, United Kingdom, also be invited to brief the Committee on these issues.

The members requested background material in preparation for this session, including NCRP recommendations on HLW, NEA proceedings, past ACNW advice, and other pertinent documents.

The Committee agreed to postpone the briefing on the HLW licensing and research plan integrated strategy until the NRC staff completes its strategy document, now scheduled for May 1993.

The Committee requested that the ACNW staff inquire about the status of plans to expand the role of the Center for Nuclear Waste Regulatory Analyses to include low-level radioactive waste issues. If these plans are still being considered, the Committee requested that it be provided a briefing on this issue.

The Committee requested that the ACNW staff inquire about the status of the Systematic Regulatory Analysis (SRA) being conducted by the CNWRA. If appropriate, a briefing should be scheduled.

Dr. Moeller recommended that the NRC staff be invited to brief the Committee on SECY-92-367, Staff Plans to Study Risk Characterization. The members concurred.

Dr. Moeller noted that the Health Physics Society has called for papers for presentation at its July 1993 meeting. The Committee recommended that a paper that describes ACNW activities be submitted for presentation at this meeting.

Dr. Steindler recommended that the NRC staff be invited to brief the Committee on SECY-92-374, Fort St. Vrain Generating Station - Public Service Company of Colorado - Approval of Decommissioning Plan and Amendment of License, particularly on those aspects relating to the shield water system and the tritium inventory. The members concurred.

Dr. Moeller noted that the Nuclear Waste Technical Review Board will hold its winter meeting in Arlington, Virginia, on

January 5-6, 1993. The system implications of interim storage of spent fuel will be discussed. The Committee requested that the ACNW staff attend the meeting and provide a report during the 50th ACNW meeting.

Dr. Hinze recommended that the NRC staff be invited to brief the Committee on the Environmental Impact Statement (EIS) for Yucca Mountain. Dr. Moeller suggested that the Committee might also want to hear about the EIS for West Valley. The Committee agreed to consider this suggestion.

Dr. Steindler recommended that the Committee be briefed on the zero release concept as it applies to the success in selecting sites for low-level radioactive waste facilities. Representatives from the State of Illinois and the Office of State Programs would be likely invitees. The Committee agreed to consider this suggestion.

G. Future Meeting Agenda

Appendix IV summarizes the proposed items endorsed by the Committee for the 50th ACNW Meeting, January 27-28, 1993, and future Working Group meetings.

The meeting was adjourned at 3:40 p.m., Friday, December 18, 1992.

463 as amended), the National Science Foundation announces the following meeting:

Name: Special Emphasis Panel in Nuclear Physics (PHY).

Dates and Times: The list of Nuclear Physics Site Visits follows:

1. Princeton University, Cyclotron Laboratory, Seminar Room, Princeton, NJ 08544—1/15/93, 9 a.m.—5 p.m.
2. University of Pennsylvania, Department of Physics, Tandem Laboratory, Seminar Room, Philadelphia, PA 19104—1/16/93, 9 a.m.—5 p.m.
3. Florida State University, Department of Physics, Tandem Laboratory, Seminar Room, Tallahassee, FL 32306—1/18/93, 9 a.m.—5 p.m.
4. University of Wisconsin, Department of Physics, Seminar Room, Madison, WI 53706—1/21/93, 11 a.m.—7 p.m.
5. California Institute of Technology, Kellogg Laboratory, Seminar Room, Pasadena, CA 91125—1/23/93, 9 a.m.—5 p.m.
6. State University of New York, at Stony Brook, Department of Physics, Seminar Room, Stony Brook, NY 11974—2/2/93, 9 a.m.—5 p.m.
7. University of Rochester, Nuclear Structure Research Laboratory, Seminar Room, Rochester, NY 14627—2/3/93, 12 p.m.—5 p.m.; 2/4/93, 9 a.m.—5 p.m.
8. Notre Dame University, Department of Physics, Seminar Room, Notre Dame, IN 46556—2/5/93, 9 a.m.—5 p.m.; 2/6/93, 9 a.m.—5 p.m.

Types of Meetings: Closed.

Contact Person: Dr. Harold C. Britt, Program Director, Nuclear Physics Program, Division of Physics, room 341, National Science Foundation, Washington, DC 20550. Telephone (202) 357-7992.

Purpose of Meetings: To provide advice and recommendations concerning proposals submitted to NSF for financial support.

Agenda: To perform a site visit, examine proposals, reviewer's evaluations and make recommendations for new and renewal awards for Nuclear Physics in FY 1993 competition.

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 exempt under 5 U.S.C. 552 b.(c)(4) and (6) of the Government in the Sunshine Act.

Dated: December 7, 1992.

M. Rebecca Winkler,

Committee Management Officer.

[FR Doc. 92-29985 Filed 12-9-92; 8:45 am]

BILLING CODE 7555-01-M

Special Emphasis in Physics; Meeting

In accordance with the Federal Advisory Committee Act (Pub. L. 92-463, as amended), the National Science Foundation announces the following meeting.

Date: January 5-7, 1993.

Place: Room 543, National Science Foundation, 1800 G St. NW., Washington, DC.

Type of Meeting: Part-Open.

Contact Person: Dr. Harold Britt, Program Director, Nuclear Physics, rm. 341, National Science Foundation, 1800 G Street NW., Washington, DC 20550. Telephone: 202-357-7993.

Minutes: May be obtained from the contact person listed above.

Purpose of Meeting: To provide advice and recommendations concerning proposals submitted to NSF for financial support.

Agenda: Open session: 1/5 and 1/6—9 a.m.—12 p.m. and 2:30—5:30 p.m.; Overview presentations from eight NSF supported University Accelerator Facilities; Closed session 1/5 and 1/6—8:30—9 a.m.; 12-2 p.m. 5:30—8 p.m.; 1/7—8:30 a.m.—3 p.m.

To review and evaluate Accelerator Laboratory 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 exempt under 5 U.S.C. 552(b)(4) and (6) of the Government in the Sunshine Act.

Dated: December 7, 1992.

M. Rebecca Winkler,

Committee Management Officer.

[FR Doc. 92-29988 Filed 12-9-92; 8:45 am]

BILLING CODE 7555-01-M

Special Emphasis Panel in Polar Programs; Notice of Meeting

In accordance with the Federal Advisory Committee Act (Pub. L. 92-463, as amended), the National Science Foundation announces the following meeting.

Date and Time: January 11, 1993; 8:30 a.m. to 5 p.m.

Place: Room 540B, 1800 G Street NW., Washington, DC.

Type of Meeting: Closed.

Contact Person: Dr. Julie M. Palais, Program Director, Division of Polar Programs, Room 620, National Science Foundation, 1800 G Street NW., Washington, DC 20550. Telephone: (202) 357-7894.

Purpose of Meeting: To provide advice and recommendations concerning proposals submitted to NSF for financial support.

Agenda: To review and evaluate Arctic glaciology 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 exempt under 5 U.S.C. 552(b)(4) and (6) of the Government in the Sunshine Act.

APPENDIX I

Dated: December 7, 1992.

M. Rebecca Winkler,

Committee Management Officer.

[FR Doc. 92-29983 Filed 12-9-92; 8:45 am]

BILLING CODE 7555-01-M

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Nuclear Waste; Meeting

The Advisory Committee on Nuclear Waste (ACNW) will hold its 49th meeting on Thursday and Friday, December 17 and 18, 1992, 8:30 a.m. until 6 p.m., room P-110, 7920 Norfolk Avenue, Bethesda, MD. Notice of this meeting was published in the Federal Register on Wednesday, November 25, 1992 (57 FR 55574).

The entire meeting will be open to public attendance. The agenda for the subject meeting shall be as follows:

A. Discuss items of priority for ACNW consideration during 1993.

B. Hear an information briefing on the NRC staff's evaluation of DOE's requested resolution of site characterization analysis objection #1.

C. Hear an information briefing on the results of geological cross-section balancing activities.

D. Hear a briefing from the ACNW Working Group Chairman on the Performance Assessment Working Group meeting of December 16, 1992.

E. Discuss a report to the Director of NMSS concerning ACNW interests.

F. Continue to prepare a Committee report on the impact of long-range climate change in the Southern Great Basin.

G. Hear a briefing on a recent DOE workshop concerned with the use of expert judgment in high level waste licensing.

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

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. 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. The office of the ACRS is providing staff support for the ACNW. Persons desiring to make oral statements should notify the Executive Director of the office of the ACRS as far in advance as practical so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements. Information regarding the time to be set aside for this purpose may be obtained by a prepaid telephone call to the Executive Director of the office of the ACRS, Mr. Raymond F. Fraley (telephone 301/492-4516), prior to the meeting. In view of the possibility that the schedule for ACNW meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with the ACRS Executive Director or call the recording (301/492-4600) for the current schedule if such rescheduling would result in major inconvenience.

Dated: December 4, 1992.

John C. Hoyle,
Advisory Committee Management Officer.
[FR Doc. 92-29926 Filed 12-9-92; 8:45 am]
BILLING CODE 7590-01-M

[Docket No. 60-220]

Niagara Mohawk Power Corp., (Nine Mile Point Nuclear Station Unit No. 1); Receipt of Petition for Director's Decision Under 10 CFR 2.206

Notice is hereby given that by letter dated October 27, 1992, Ben L. Ridings (Petitioner) filed a "Petition for Emergency Enforcement Action and Request for Public Hearing" (Petition) regarding Nine Mile Point Nuclear Station Unit No. 1 (NMP-1) with the Nuclear Regulatory Commission. The Petition, which has been referred to me for consideration as a petition under 10 CFR 2.206, requests that the Nuclear Regulatory Commission immediately order Niagara Mohawk Power Corporation (NMPC) to cease power operation of NMP-1 and place the reactor in a cold shutdown condition. The Petition seeks relief on the basis of allegations that:

(1) NMP-1 does not meet NRC requirements for an engineered safety feature system (ESFS) grade high-pressure coolant injection (HPCI) system,

(2) 45 percent of the containment isolation valves have administrative deficiencies, and

(3) NMPC, NMPC's quality assurance group and the NRC have reviewed these safety concerns, and contrary to any practical justification, have remained silent.

With respect to the lack of an ESFS grade HPCI system, the Petitioner had two concerns: First, the Petitioner stated that the feedwater system, which can operate in an HPCI mode, is not an acceptable alternative system because it does not have a backup electrical power supply provided by an onsite emergency diesel generator; second, the Petitioner was concerned about using the feedwater system in a HPCI mode because some 44 out of 47 valves in the feedwater injection flow path are not included in the NMP-1 Inservice Test Program for pumps and valves.

For the reasons stated in a letter to the Petitioner dated December 4, 1992, Petitioner's request for immediate action was denied. Petitioner's request is being treated in accordance with 10 CFR 2.206 of the Commission's regulations. The NRC will take appropriate action on this request within a reasonable time.

A copy of the Petition is available for inspection and copying for a fee in the Commission's Public Document Room, 2120 L Street, NW., Washington, DC 20555 and at the Reference and Documents Department, Penfield Library, State University of New York, Oswego, New York 13126.

Dated at Rockville, Maryland, this 4th day of December 1992.

For the Nuclear Regulatory Commission.
Thomas E. Murley,
Director, Office of Nuclear Reactor Regulation.
[FR Doc. 92-29994 Filed 12-9-92; 8:45 am]
BILLING CODE 7590-01-M

[Docket No. 60-219]

GPU Nuclear Corp.; Issuance of Amendment to Facility Operating License

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 160 to Facility Operating License No. DPR-16 issued to GPU Nuclear Corporation (the licensee), which revised the Technical Specifications for operation of the Oyster Creek Nuclear Generating Station located in Ocean County, New Jersey. The amendment is effective as of the date of issuance.

The amendment modified the Technical Specifications to delete the auto-start logic of the Containment Spray System (CSS) by plant modifications to be performed in the 14R refueling outage. In order to achieve

this, revisions were necessary to Technical Specifications 3.1 and 3.4 Bases sections; deletion of the instrumentation requirements of Table 3.1-1 Section E; deletion of Containment Spray System from Table 4.1.2 (which lists surveillance test frequencies for Automatic Trip Systems); and deletion of the surveillance requirement for Technical Specification 4.4.C.2 for auto-start actuation test.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the Federal Register on March 12, 1992 (57 FR 8785). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the environmental assessment, the Commission has concluded that the issuance of this amendment will not have a significant effect on the quality of the human environment (57 FR 47125).

For further details with respect to the action see (1) the application for amendment dated February 19, 1992, (2) Amendment No. 160 to License No. DPR-16, (3) the Commission's related Safety Evaluation, and (4) the Commission's Environmental assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street NW., Washington, DC 20555 and at the local public document room located at the Ocean County Library, Reference Department, 101 Washington Street, Toms River, New Jersey 08753. A copy of items (2), (3) and (4) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Document Control Desk.

Dated at Rockville, Maryland this 4th day of December 1992.



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

December 1, 1992

SCHEDULE AND OUTLINE FOR DISCUSSION
49TH ACNW MEETING
DECEMBER 17-18, 1992

Thursday, December 17, 1992, Room P-110, 7920 Norfolk Ave., Bethesda, Maryland

- 1) 8:30 - 8:⁵⁵~~45~~ a.m. } Opening Remarks by ACNW Chairman (Open)
1.1) Opening Statement (DWM/RKM)
1.2) Items of Current Interest (DWM/RKM)
- 2) 8:⁵⁵~~45~~ - 10:³⁰~~00~~ a.m. } NRC Staff Evaluation of DOE's Requested Resolution of SCP OBJECTION #1 (Open)
2.1) Staff briefing on their review of DOE's proposed resolution (WJH/LGD)
2.2) Question and Answer Session - Staff presenters will be R. Weller and R. Ballard
- 10:³⁰~~00~~ - 10:⁵⁰~~15~~ a.m. * * * B R E A K * * *
- 3) 10:⁵⁰~~15~~ - 11:¹²~~45~~ a.m. } Results of Geological Cross-Section Balancing Activities (Open) (WJH/LGD)
3.1) NMSS will provide an information briefing on this topic
3.2) Question and Answer Session - Staff presenters will be K. McConnell and R. Ballard
- 11:¹²~~45~~ - 12:¹~~45~~ p.m. * * * L U N C H * * *
- 4) 12:¹~~45~~ - 1:⁵⁵~~15~~ p.m. } Report by Senior Fellow S. Mays on the November 18-19, 1992 DOE Workshop on the Use of Expert Judgment (Open) (PWP/GNG/SEM)
- 5) 2:⁵⁰~~15~~ - 3:⁵⁰~~45~~ p.m. } Working Group Chairman's Report on the December 16, 1992 ACNW Working Group Meeting on Total System Performance Assessment (Open) (PWP/GNG)
- 6) 4:¹⁰~~15~~ - 5:²⁰~~15~~ p.m. } Committee Activities/Future Agenda (Open) (DWM/RKM)
Discuss anticipated and proposed Committee activities, future meeting agenda, administrative and organizational matters, as appropriate
6.1) Set January agenda
6.2) Review Working Group Schedule
6.3) Other Future Topics
- 3:⁵⁰~~15~~ - 4:¹⁰~~30~~ p.m. * * * B R E A K * * *

[= Transcribed portion of meeting

- 5:20
 7) ~~2:00~~ - 6:00 p.m. Preparation of ACNW Reports (Open)
 Discuss proposed ACNW Reports regarding items considered during this meeting and previous meetings, including:
 7.1) Comments on the Potential Impacts from Long-Range Climate Change (WJH/GHG)
 7.2) ACNW Report Outlining Areas of Interest (DWM/RKM)
 7.3) Total System Performance Assessment (PWP/GNG)
- 6:00 p.m. RECESS

Friday, December 18, 1992 Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

- 8) 8:30 - 9:25 a.m. Discuss Items of Priority for ACNW Consideration During 1993 (Open) (DWM/RKM)
- 9:25 - 10:00 a.m. Travel to One White Flint North, Rockville MD
- 9) 10:00- 11:30 a.m. Listen to Dr. John Bartlett Brief the Commission on DOE's HLW Program - Meeting Room, One White Flint North
- 11:30-12:00¹⁵ Noon Return to 7920 Norfolk Ave., Phillips Bldg.
- 1:10 2:00
~~12:00- 1:00~~ p.m. LUNCH
- 12:15 3:40
~~1:00 - 2:00~~ P.M. Continue Discussion of Priority Items for ACNW Consideration in 1993 (Open) (DWM/RKM)
- 3:40
~~2:00~~ p.m. ADJOURN

APPENDIX III: MEETING ATTENDEES

49TH ACNW MEETING
DECEMBER 17-18, 1992

<u>ACNW MEMBERS</u>	<u>1st Day</u>	<u>2nd Day</u>
Dr. William J. Hinze	<u> X </u>	<u> X </u>
Dr. Dade W. Moeller	<u> X </u>	<u> X </u>
Dr. Paul W. Pomeroy	<u> X </u>	<u> X </u>
Dr. Martin J. Steindler	<u> X </u>	<u> X </u>

<u>ACNW STAFF</u>	<u>1st Day</u>	<u>2nd Day</u>
Ms. Lynn F. Deering	<u> X </u>	<u> X </u>
Mr. Giorgio N. Gnugnuli	<u> X </u>	<u> X </u>
Mr. Richard K. Major	<u> X </u>	<u> X </u>
Mr. Steven E. Mays (Senior Fellow)	<u> X </u>	<u> </u>
Mr. Michael L. MacWilliams	<u> </u>	<u> X </u>
Mr. H. Stanley Schofer	<u> X </u>	<u> X </u>
Mr. Mark E. Stella	<u> </u>	<u> X </u>

NRC STAFF

Charlotte Abrams	NMSS
Ronald Ballard	NMSS
William Boyle	NMSS
Abraham Eiss	NMSS
Margaret Federline	NMSS
Daniel Fehringer	NMSS
William Ford	NMSS
Joe Holonich	NMSS
Ken Hooks	NMSS
John Linehan	NMSS
Keith McConnell	NMSS
Stephen McDuffie	NMSS
Mysore Nataraja	NMSS
Mel Silberberg	RES

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

John Blair	Fluor Daniel M&O
Chris Charles	Weston
Dan Dresser	Weston
April Gil	DOE
A. Greenberg	M&O/RDA
Homi Minwalla	Weston
Alan Morris	CNWRA
Steve Nesbit	M&O
Bonnie Packer	TRW/M&O
Gary Stirewalt	CNWRA
Ray Wallace	USGS/HQ
Stephen Young	CNWRA

APPENDIX IV: FUTURE AGENDA

50th ACNW Committee Meeting January 27-28, 1993 (Tentative Schedule)

Energy Policy Act of 1992 (Open) - The Committee will review and comment on the NRC staff's analysis of the issues that the National Academy of Sciences will be addressing as a result of the Energy Policy Act of 1992 and the impacts this Act will have on NRC's high-level radioactive waste program.

Natural Analogues (Open) - The Committee will be briefed on the role of natural analogues in model development.

Low-Level Radioactive Waste Performance Indicators (Open) - The Committee will explore the creation of a performance indicator or event reporting system that would monitor the current status and trends in the management and disposal of low-level radioactive waste.

Report on the Nuclear Waste Technical Review Board Meeting (Open) - The Committee will be briefed by the ACNW staff on the Nuclear Waste Technical Review Board's winter meeting in Arlington, Virginia, January 5-6, 1993.

ACNW Four-Month Plan (Open) - The Committee will prepare and submit its four-month plan to the Commission for the period February-May 1993.

Committee Activities (Open/Closed) - The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, and organizational matters, as appropriate. Also, the members will discuss matters and specific issues that were not completed during previous meetings.

APPENDIX V
LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE

Meeting Handouts

AGENDA

DOCUMENTS

ITEM NO.

- 1 Chairman's Report
 1. Items of Possible Interest to ACNW Members and Staff, dated December 9, 1992, by Dade W. Moeller
- 2 NRC Staff Evaluation of DOE's Requested Resolution of Site Characterization Analysis OBJECTION #1 Regarding ESF Title I Design Control Process
 2. November 1992 Resolution of Site Characterization Analysis Objective 1, Division of High-Level Waste Management, NMSS, dated December 17, 1992 [Viewgraphs]
- 3 Results of Geological Cross-Section Balancing Activities
 3. Development of Methods to Address Structural Deformation in Characterization and Performance of a Geologic Repository, dated December 17, 1992 [Viewgraphs]
 4. Geometric Analyses of Faults at Yucca Mountain - Applications to the High-Level Waste Regulatory Program, by Stephen Young, CNWRA, dated December 17, 1992 [Viewgraphs]
- 4 Report by Senior Fellow Steve Mays on the DOE Workshop on the Use of Expert Judgment (November 18-19, 1992)
 5. Letter to Paul Pomeroy from Warner North, Nuclear Waste Technical Review Board, dated December 3, 1992, regarding Expert Judgment.
- 6 Committee Activities/Future Agenda
 6. Memorandum to Richard Major from Dade Moeller, dated December 6, 1992, regarding Suggestion for Working Group Meeting on Performance Indicators
 7. Advanced Information Management System Questionnaire, undated, by Mark Stella
 8. Staff Plans to Study Risk Characterization, dated December 12, 1992, by Dade Moeller
- 7 Preparation of ACNW Reports
 9. Memorandum for Giorgio Gnugnoli from Kenneth Foland, dated December 11, 1992, regarding Predecisional Draft ACNW Letter to R. Bernero, NMSS, regarding Potential Impacts of Long-Range Climate Change
 10. Memorandum for William Hinze from Giorgio Gnugnoli, dated November 30, 1992, regarding W.G. Spaulding's Report on the November 18, 1992, ACNW Working Group Meeting on Climate Change with enclosure [Official Use Only]

- 9 Dir. Office of Civilian Radioactive Waste Management, DOE, Meeting with the Commission
11. Status of Civilian Radioactive Waste Management, dated December 18, 1992, by John W. Bartlett, Director
 12. Update on Major Field Activities at Yucca Mountain, dated December 18, 1992, Presented by Carl Gertz [Viewgraphs]
 13. Letter to Peter Myers, National Research Council, from Margo Oge, Environmental Protection Agency, dated December 8, 1992, regarding the National Academy of Sciences Proposed Study
 14. Letter to John Bartlett, OCRWM, from Robert Bernero, NRC, dated November 23, 1992, regard the High-Level Repository Program with enclosure
 15. Radiation Protection and Safety Criteria, Proceedings of an NEA Workshop, Paris, November 5-7, 1991

Meeting Notebook Contents

- 1 Chairman's Report
1. Introductory Statement by ACNW Chairman, dated December 17, 1992
 2. Introductory Statement by ACNW Chairman, dated December 18, 1992
 3. Items of Interest, undated
- 2 NRC Staff Evaluation of DOE's Requested Resolution of Site Characterization Analysis OBJECTION #1 Regarding ESF Title I Design Control Process
4. Status Report, dated December 17, 1992
 5. Memorandum for ACNW Members from Lynn Deering, dated November 30, 1992, regarding November 2, 1992 Correspondence from NRC to DOE to Lift Site Characterization Analysis Objection #1 and November 16, 1992 Correspondence from DOE to NRC Addressing Status of Study Plans [with enclosures 1 and 2]
 6. Monthly Study Plan Status for September 1992
 7. Excerpts from NUREG-1347 "NRC Staff Site Characterization Analysis of the Department of Energy's Site Characterization Plan, Yucca Mountain Site, Nevada
 8. Letter for Joseph Holonich from John Roberts, dated March 3, 1992, regarding Transmittal of the Exploratory Studies Facility Alternatives Study (ESFAS), [with enclosures]
- 3 Results of Geological Cross-Section Balancing Activities
9. Status Report
 10. Excerpts from "Geometric Models of Faulting at Yucca Mountain," CNWRA, October, 1992

- 4 Report by Senior Fellow S. Mays on the November 18-19, 1992 DOE Workshop on the Use of Expert Judgment
 11. Status Report
 12. Memorandum for ACNW Members from Steve Mays, dated November 25, 1992, regarding DOE Workshop on Expert Judgment [prepared for Internal Committee Use, with attachments]
 13. Memorandum for Paul Pomeroy from Giorgio Gnugnoli, dated November 12, 1992, regarding Expert Judgment Transmittal to NWTB [Internal Committee Distribution Only]

- 5 Working Group Chairman's Report on the December 16, 1992 ACNW Working Group Meeting on Total System Performance Assessment
 14. Status Report

- 6 Committee Activities/Future Agenda
 15. January Meeting Agenda
 16. February Meeting Agenda
 17. March Meeting Agenda
 18. April Meeting Agenda [No Items Scheduled]
 19. Other Topics
 20. Working Group Meetings
 21. Memorandum to Addressees from Raymond Fraley, dated November 27, 1992, regarding ACNW Meeting Dates for Calendar year 1993
 22. Blaha List of Proposed ACNW Agenda Items

- 7.1 Preparation of ACNW Reports: Comments on the Potential Impacts from Long-Range Climate Change
 23. Letter for Robert Bernero from Dade Moeller, dated December 4, 1992, regarding Impact of Long-Range Climate Change in the Southern Great Basin [Draft #3 Predecisional Draft]

- 7.2 Preparation of ACNW Report: Outlining Areas of Interest
 24. Status Report
 25. Memorandum for Dade Moeller from Raymond Fraley, dated May 16, 1990, regarding Revised ACNW Charter [enclosures]
 26. Memorandum of Understanding
 27. Letter for Chairman Carr from Dade Moeller, Carlyle Michelson dated July 11, 1990, regarding Division of Responsibilities Between ACRS and ACNW
 28. Memorandum for Chairman Carr from Raymond Fraley, dated February 23, 1990, regarding Division of Responsibilities Between ACRS and ACNW [with enclosure]
 29. Letter for Robert Bernero from Dade Moeller, dated December 8, 1992, regarding ACNW Areas of Interest

- 8 Discuss Items of Priority for ACNW Consideration During 1993
 30. Status Report
 31. Letter for Chairman Carr from Dade Moeller, dated January 29, 1991, regarding Priority Issues on Radioactive Waste Management