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ACNW-0119

MINUTES OF THE 98TH ACNW MEETING
FEBRUARY 24-26, 1998

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RS02

CERTIFIED 4/23/98
By B. JOHN GARRICK

CERTIFIED

Issued: April 9, 1998

MINUTES OF THE 98TH MEETING OF THE
ADVISORY COMMITTEE ON NUCLEAR WASTE
FEBRUARY 24-26, 1998
ROCKVILLE, MARYLAND

The Advisory Committee on Nuclear Waste (ACNW) held its 98th meeting February 24-26, 1998, at Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland. The ACNW met to discuss and take appropriate action on the items listed in the attached agenda. The entire meeting was open to public attendance.

A transcript of selected portions of the meeting is available in the Nuclear Regulatory Commission (NRC) Public Document Room at the Gelman Building, 2120 L Street, NW., Washington, DC. Copies of the transcript are available for purchase from Ann Riley & Associates, Ltd., 1250 I Street, NW., Suite 300, Washington, DC 20005. Transcripts are also available for downloading or reviewing on the Internet at <http://www.nrc.gov/ACRSACNW>.

Dr. B. John Garrick, ACNW Chairman, convened the meeting at 8:33 a.m. and explained the purpose of this session. ACNW members Drs. Charles Fairhurst, Raymond G. Wymer, and George M. Hornberger were also present. For a list of other attendees, see Appendix III.

I. Chairman's Report (Open)

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

Dr. Garrick noted a number of items that he believed to be of interest, including the following:

- (1) The Department of the Interior (DOI) approved scientific drilling at the proposed Ward Valley Low-Level Waste (LLW) Disposal Site on January 19, 1998. Environmental tests will be performed sequentially; the Federal Government will perform its tests first, but site developers have stated that the Government cannot have access to the site since DOI has not yet stated when its tests will begin or end. The Governor of California believes this is just another in a multiyear series of delays.
- (2) The State of Nevada accepted permanent custody of the former low-level radioactive waste disposal site at Beatty, Nevada, on December 30, 1997. This site had operated from 1952 until the end of 1992, when it stopped accepting waste. Transfer of the license to the State, one of several steps leading to termination of the license at the end of the institutional control period, may take as long as 100 years.
- (3) Michael J. Bell, Acting Branch Chief, Performance Assessment and High-Level Waste (HLW) Integration Branch, Division of Waste Management, NRC Office of Nuclear Material Safety and Safeguards (NMSS) was selected to

receive the Robert E. Wilson Award in Nuclear Chemical Engineering for 1998.

- (4) Commonwealth Edison recently announced that it was shutting down permanently the two-unit Zion plant. James J. O'Connor, Chief Executive Officer, stated that this was strictly an economic decision. Dismantlement of the plant will begin 2014. It was noted that both units are shutting down 13 years before their operating licenses expire.
- (5) Hearings on the proposed Texas Low-Level Waste Disposal Facility have commenced; initial hearings are estimated to take 2 to 3 weeks to be held beginning January 21-23, 1998, in Sierra Blanca. Additional hearings are scheduled to be held in Austin and El Paso, Texas. Testimony under oath will be taken by judges from the State Office of Administrative Hearings to determine whether or not to issue a license to open and operate the site near Sierra Blanca. A decision is not expected until late 1998.
- (6) According to a February 6th article in the *Newark Star-Ledger*, after 9 years of unsuccessful effort and the expenditure of nearly \$7 million, the New Jersey Low-Level Radioactive Waste Disposal Facility Siting Board has voted to end efforts to locate an LLW site within New Jersey. In a letter to the Governor of New Jersey, the Board recommended that its \$1.5 million budget be slashed and that the agency become only a caretaker of records. New Jersey's LLW is now being shipped to the Barnwell site in South Carolina.

II. Implementation Rule for the Proposed Yucca Mountain Repository (Open)

[Ms. Lynn G. Deering was the Designated Federal Official for this part of the meeting.]

Janet Kotra and Tim McCartin, NMSS staff, presented a discussion of the staff's strategy for developing new regulations for HLW disposal and preliminary staff considerations in developing the rule. Ms. Kotra discussed the background of the revised HLW rule, including the National Academy of Sciences (NAS) recommendations; the need for new technical criteria due to key assumptions that formed the basis for the existing 10 CFR Part 60, direction provided by the Commission in the NRC strategic plan to develop new simplified standards that apply only to the Yucca Mountain repository; the preliminary timetable; and the elements of the strategy.

The elements of the strategy are the following:

1. Adopt as much of existing 10 CFR Part 60 as possible.
2. Establish compliance with forthcoming EPA standards, limiting individual dose or risk to an average member of the critical group as the sole measure of performance.
3. Specify reference biosphere assumptions and details about the critical group.

4. Specify a human intrusion scenario that is to be used to evaluate consequences of human intrusion.
5. Require use of multiple barriers, but do not specify quantitative requirements for individual barrier performance.
6. Require the Department of Energy (DOE) to demonstrate the contribution of multiple barriers, and their respective uncertainties, to total performance by providing results of intermediate calculations within the performance assessment (PA). This transparency will provide decisionmakers with key contributors to system level performance.
7. Evaluate only those site characteristics and design features that are directly relevant to Yucca Mountain, and eliminate unnecessary generic siting and post-closure design criteria.
8. Make no separate provision for the protection of groundwater.

The preliminary schedule is to: (1) seek Commission approval on the proposed strategy by February 1998, (2) meet with ACNW to seek input by February 1998, (3) provide the draft rule to the ACNW by August 1998, (4) present draft proposed regulations by September 1998, (5) meet with the ACNW on the final rule in May 1999, (6) obtain Commission approval to publish the final regulations in July 1999, and (7) complete the Standard Review Plan (SRP) in 2000 or 2001.

Timothy McCartin discussed considerations in developing specific regulations for Yucca-Mountain, and a three-tiered strategy to define the post-closure requirements. The strategy consists of (1) specifying in the rule a quantitative limit for overall performance, (2) specifying in the rule expectations for the PA, (3) specifying in the Issue Resolution Status Reports (IRSRs) features, events, and processes (FEPs) that must be considered, and (4) specifying acceptance criteria in the IRSRs. Detailed guidance is placed in the IRSRs instead of in the rule itself to allow for greater flexibility.

The rule will contain only requirements that can be demonstrated as part of the PA. Stylized calculations will be used for the evaluation of human intrusion, retrievability, and criticality. PA requirements may include (1) estimating dose to the average member of the critical group with consideration of associated uncertainties, (2) completing a high-quality technical analysis, and (3) identifying discrete barriers of the system incorporated in the PA and discussion of their contribution to performance, including sensitivity analyses, scatter plots, and importance analyses. Mr. McCartin indicated that the staff would appreciate the ACNW's views on the use of post-processors, surrogate risk standards, specification of the critical group and reference biosphere, and time of compliance, as well as possible other considerations, in addition to what is included in the PA, such as design criteria for operations and other possible post-closure requirements.

The Committee questioned whether it would be possible to selectively remove portions of the existing 10 CFR Part 60, such as the subsystem requirements, to reduce litigative liability. The staff wasn't sure. Dr. Fairhurst also asked whether the staff is considering international approaches used by other

countries. The staff indicated that efforts were being made to be mindful of and consistent with other countries. Other questions addressed what the staff considers to be barriers, i.e., natural versus engineered barriers. The Committee agreed to prepare a letter on the staff's rulemaking strategy. In addition, the ACNW agreed to develop a list of issues for consideration by the staff.

The Committee noted that in following a quantitative approach rather than a prescriptive approach (i.e., show barrier performance rather than specify barrier performance) it is not feasible to look at the importance of individual components as they impact the central tendency, because the barriers may have a much greater impact on the uncertainty of the overall bottom line result, rather than on the central tendency. ACNW noted that this requires a new way of thinking.

The Committee also asked about public involvement. The staff responded that the rulemaking allows for the normal public comment period, but that this is not a participatory rulemaking. It was noted that the staff does not plan to develop any additional guidance beyond the IRSRs and SRP.

III. Status of the Viability Assessment Being Performed for the Yucca Mountain Project (Open)

[Ms. Lynn G. Deering was the Designated Federal Official for this part of the meeting.]

Timothy Sullivan, Carol Hanlon, and Dan Kane, DOE Yucca Mountain Site Characterization Office, presented an overview and the status of the Viability Assessment (VA), the status of the License Application (LA) Plan, which identifies the remaining work required to complete the LA and associated costs, and the VA design concept for the repository and waste package, respectively.

Mr. Sullivan discussed the background, the content, and organization of the five-volume VA product and supporting technical and management documents, the approach and methodology of the total system performance assessment VA (TSPA-VA) base case, milestones and schedules, and the overall status of the VA. Mr. Sullivan also reviewed highlights from the January 1998 TSPA-VA technical exchange meeting, and work planned with NRC and the ACNW on VA. The VA product contains five volumes and has approximately 1000 pages.

Volume 1 of the VA is an introduction, containing background information, site description, and organizing principles; Volume 2 is the VA design; Volume 3 is the TSPA-VA; Volume 4 is the LA plan; and Volume 5 is the cost estimate from LA to decommissioning. The site description document is a supporting document to the five-volume VA product, consisting of 3000 to 4000 pages. This

document will be the basis for Chapter 3 of the LA, and will present the technical basis for regulatory findings relative to 10 CFR Part 60. The site description document links the site data to the process models. Mr. Sullivan noted that DOE will present the results of the base case analyses to the NRC during a technical exchange meeting in March. Among other highlights, the east-west drift starter tunnel has been completed and drift excavation will begin in April, and the earthquake hazards assessment was completed and will be used in VA. The schedule for the four VA-related products, which were mandated by Congress, and the areas they cover are: VA design (August 1998); TSPA-LA (August 1998); LA plan (July 1998); cost estimate (August 1998). The VA will be sent to Congress on September 30, 1998.

Dr. Garrick asked Mr. Sullivan whether DOE has considered using Volume 1 of the VA as a vehicle to integrate the entire VA using a systems engineering approach. Mr. Sullivan indicated that Volume 1 will be a traditional summary-type document and that TSPA-VA is used as an integration tool.

Ms. Hanlon, LA Plan Team Leader, described the LA plan (Volume 4 of the VA) as containing an introduction, organizational principles, contents, and key technical issues (KTIs). The plan notes work to be performed to complete the LA and costs of that additional work. It provides a link between the VA and the LA. It also describes remaining information to be developed to support an LA, including tests, design work, TSPA analyses, and a performance confirmation program. The work needed will be described in terms of how it is needed to support the Repository Safety Strategy, information to support the post-closure safety case, and information needed to support the preclosure safety case. The work needed is also correlated with the critical development areas

in the TSPA (site characterization, design, and performance assessment). The LA plan also describes statutory work needed to support the LA, including the environmental impact statement, the site recommendation to Congress, licensing, field construction and operation, performance confirmation, and support activities. The technical work needed for developing reasonable assurance for the safety case includes estimates of repository performance, consideration of disruptive processes and events, margins of safety and defense in depth, understanding from relevant natural analogs, and performance confirmation. The LA plan will identify KTIs and describe the ongoing and planned IRSR process. The additional information needs will reference relevant KTIs. (Volumes 2 and 3 of the VA will also reference KTIs.) To facilitate moving from the VA to the LA, DOE completed development of an LA management plan in September 1997, and is developing a technical guidance document this year.

Mr. Kane presented the VA design concept for the repository and waste package (Volume 2 of the VA). The design document is approximately 200-300 pages, and consists of the preliminary reference design and options to support TSPA-VA. The design document includes surface facility design features (mechanical systems, process systems, waste handling, etc.) and subsurface facility design features [engineered barrier systems (EBS) design, construction and operation concepts, and performance confirmation design]. Design options include drip shields, backfill, ceramic coating, and cladding. Cladding exists but is not currently being credited. All of these options are being evaluated in TSPA-VA sensitivity studies.

The systematic approach in developing the EBS design involves identifying the set of EBS options, evaluating PA models of EBS options, selecting EBS

reference design and options, developing EBS options for VA in parallel with reference design, and re-addressing all EBS options in support of the LA. The current design assumes a 3000-year canister life, with some pitting corrosion. The only failure mechanism for ceramic coating is cracking due to rock fall or uneven stress from inverted placement.

Discussions during the question period addressed issues associated with the pros and cons of backfill, including how backfill could affect retrievability and the effectiveness of the drip shield. Mr. Sullivan noted that the decision to include backfill will not be taken lightly and that DOE is evaluating the benefits of backfill in the TSPA-VA and assessing the cost-benefit.

The ACNW agreed to prepare a letter on the subject of VA and to put the letter in final form during the April meeting after a briefing from the NRC staff on VA review guidance. The ACNW discussed its observations as follows:

- (1) The NRC should consider the VA review as a practice run for the LA review;
- (2) DOE and NRC need to take a systems engineering approach to ensure integration of the VA product and NRC's review of the VA product;
- (3) The need to sort out in IRSRs which issues are actually resolved;

- (4) Lynn Deering ACNW staff would contact Russ McFarland, Nuclear Waste Technical Review Board (NWTRB), to learn more about the NWTRB's recommendation to Congress for DOE to consider alternative designs in the VA;
- (5) Global considerations, including the extent to which the VA locks DOE into a particular design, and the flexibility of the TPA-3 code to handle alternative designs; and
- (6) Given the fact that the staff is looking only at postclosure issues, the Committee questioned the wisdom in ignoring preclosure issues in the VA review.

The Committee members agreed to submit comments on a potential ACNW report that addresses the VA by March 13, 1998.

IV. Meeting With the Deputy Director, Division of Waste Management (DWM),
NRC Office of Nuclear Material Safety and Safeguards (NMSS) (Open)

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

Margaret Federline, Deputy Director, DWM/NMSS, discussed a number of current issues of note for DWM. She discussed staff concerns about the NWTRB recommendation to DOE to consider a number of alternative design concepts in the VA. The staff is concerned that if such an approach is adopted, it may detract from DOE providing detailed supporting information for the reference

VA design. The Committee asked how significant the suggested changes would be to the DOE approach for VA. Michael Bell, DWM/NMSS, said that the NWTRB was interested in issues such as evaluating different sizes for the emplacement drifts and alternative designs now that the multipurpose canister may not be used. He noted that the NWTRB wanted a range of alternatives and the associated costs as a type of optimization. He said that this kind of approach was never the intent of the VA.

Dr. Garrick asked Mr. Sullivan, DOE, about the NWTRB request. Mr. Sullivan said that NWTRB is looking at a number of options, including different thermal loads, self-shielded waste packages, different waste package sizes, and different drift diameters and spacing. He said that the message to DOE was to keep its options open. Dr. Garrick asked if DOE could develop a case for alternative designs as a part of the Yucca Mountain reference design concept. Mr. Sullivan said that DOE is doing this, but none of the options will have the same level of detail as the reference design for VA.

Dr. Bell discussed the NRC's IRSRs and the development of acceptance criteria in the IRSRs that will eventually be incorporated into a standard review plan. These include three IRSR reports now being developed on igneous activity, TSPA methodology, and container life and source term. The staff is also using the NRC's updated Total Performance Assessment Code (TPA 3.1) for sensitivity studies and will brief the Committee in April on the results of these analyses. There was a discussion of what is meant when an issue is "resolved at the staff level." Dr. Bell also discussed some previous NRC/DOE technical exchanges and the key issues of concern for the upcoming technical exchange on March 17-19, 1998. In this technical exchange NRC and DOE will compare the

results of their sensitivity analyses. Topics for further discussion are dilution in the saturated zone, matrix diffusion, and credit for the spent fuel cladding. Dr. Bell also said that the staff will produce a users manual for the TPA code. He offered members of the ACNW staff the opportunity to obtain training in the use of the TPA Code.

Ms. Federline discussed the development of four guidance documents for implementing the decommissioning rule: guidelines for derived concentration limits, guidance on the final radiation survey, guidance on release for restricted use, and guidance on ALARA (as low as is reasonably achievable). Ms. Federline discussed the Decommissioning Workshop scheduled for March 19, 1998. She said that the workshop will concern DSI-9 (Direction Setting Issue-9) on decommissioning. The staff is attempting to develop some new and innovate approaches for streamlining and improving the decommissioning review process. She said that the workshop will focus on non-complex materials decommissioning sites. NRC wants input on the development of a pilot program in which several licensees can participate and evaluate some of the streamlined processes. Ms. Federline also discussed interactions between the Environmental Protection Agency (EPA) and NRC on the rule. She specifically discussed the development of a draft memorandum of understanding on decommissioning between EPA and the NRC.

The Committee members discussed with the staff the meaning of the term "resolved at the staff level" and how it is intended to be used in the issue resolution process. The Chairman noted that this may be analogous to the phrase "unresolved safety issues" as applied in reactor licensing. Ms. Federline said that the staff wants to focus on those issues most closely

related to safety. The point she noted was to come to a conclusion about when enough work has been done to satisfy the main safety issues.

V. Status Report on Yucca Mountain Site Characterization (Open)

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

Carol Hanlon, Yucca Mountain Project Office, reported on the status of activities at the proposed Yucca Mountain repository. She showed such photographs of site characterization activities as field tests in progress. She stated that the tunnel-boring machine for the east-west cross strip is scheduled for delivery in March or April 1998. Niches off Alcoves 1 and 7 are being watched for water seepage as a result of El Niño. Water samples are being analyzed at Busted Butte to find any significant differences caused by El Niño. There are plans to drill a new "C" well in the 1999-2000 time frame down the hydraulic gradient from the proposed repository. The Site Recommendation Management Plan Progress Report 18 is due in April 1998.

VI. Committee Review on the Discussion of "Predecisional" Information in Open/Closed Meetings (Open)

[Mr. Andrew C. Campbell was the Designated Federal Official for this part of the meeting.]

Susan Fonner, Office of the General Counsel, discussed a number of issues with respect to the Freedom of Information Act (FOIA), the Federal Advisory

Committee Act (FACA), and the Government in the Sunshine Act (Sunshine Act) as they affect how advisory committees handle and discuss predecisional information. She defined a predecisional document and discussed the FOIA exemption for such a document. She said that the ACNW and ACRS, whose operations are governed by FACA (and, by reference, the Sunshine Act), cannot close a meeting to the public solely on the basis that the information to be discussed is predecisional. She said that neither FACA nor the Sunshine Act contain provisions for FOIA exempt documents. She noted that the exemption from FOIA is likely to be lost for any document or portion of a document, that is released or discussed in a public forum. She added that the ACNW and ACRS are required under FACA to keep detailed minutes and to release to the public any Committee reports and transcripts of the Committee proceedings. Therefore, a predecisional document or portion thereof, which is specifically discussed in an open meeting, must be made available to the public. She noted that simply discussing an issue in a general sense (e.g., without reference to a predecisional document or portion thereof), including "give-and-take" discussion with a staff member on the general subject, will probably not nullify the FOIA exemption. However, paraphrasing the wording or segments of a predecisional document risks losing the FOIA exemption for the portion of the document that was paraphrased and discussed in a public meeting. She discussed specific approaches that advisory committees could follow so as to avoid nullifying the FOIA exemption for predecisional documents. Ms. Fonner said that OGC will provide further written guidance on this issue to the Committee.

VII. Nuclear Waste-Related Research (Open)

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

Giorgio Gnugnoli, ACNW staff, presented the current situation in the preparation of the report to the Commission on the adequacy of nuclear waste-related research at the NRC. Mr. Gnugnoli pointed out that the Committee should provide clear examples of either shortcomings or redundancies in the NRC's research program. The ACRS is devoting its entire 450th Meeting to the subject of NRC safety research. The specific subjects to be discussed are the following:

- changes in strategy
- prioritization of research needs
- core capabilities
- confirmatory research activities
- anticipatory research activities
- deferred research
- discussion of specific research needs by topic (e.g.; fire protection, human factors, instrumentation and control, reliability, and probabilistic risk assessment)

The report format and the logistics of the preparation process were discussed, noting that the time frame is short in terms of the conditions under which the Committee is required to function.

Mr. Gnugnoli then summarized the meeting held between the ACRS and the NRC Chairman. Some important points follow:

ACNW and ACRS share certain topics of importance, such as:

- human factors
- RIPB regulatory infrastructures
- the advisory committee's responsibility to fill the void left by Nuclear Safety Research Review Committee (programmatic concerns) reshuffling of functions between RES and Program Offices.

The ACRS was cautioned to view research adequacy over the whole NRC program, not in a vacuum. In effect, the budget dwindles in certain areas, but may be necessary in the overall program.

The ACRS was reminded to consider cooperative programs and sunset provisions.

The ACNW was then told about future meetings and the parties being invited to brief the Committee. These would include DOE and an industry representative [i.e., Electric Power Research Institute (EPRI)]. Some of the items to be discussed and addressed by the ACNW in the current and future meetings are the following:

1. Is the NRC's research and technical assistance (TA) program in waste management (WM) evolving to a more risk-informed, performance-based approach?

2. Are the core capabilities maintained in the NRC WM research staff and in the contractor sufficient or necessary?
3. Is the NRC's commitment to relying on academic, industry, and international research and development activities properly reflected in the current budget?
4. Is the consolidation of the radionuclide transport to a modest generic transport research activity sufficient to maintain a viable NRC decision-making capability in the future?
5. How is the NRC staff dealing with possible future ramp-up needs, in light of the contractual conflict-of-interest provisions and federally funded research and development center procurement limitations.

Examples of past accomplishments of the NRC research and TA programs were discussed. The Issue Resolution Status Report (IRSR) development process was discussed, especially in light of the NRC staff's reliance on the IRSRs to bring resolution to key technical uncertainties and for ultimate development of a standard review method for licensing decisions.

In the ensuing discussion, Dr. Garrick gave his opinion on whether NRC-generated, independently-developed research was really necessary. Reliance on the academic and private sector-sponsored research could still provide the NRC with the technical data and information it needs for decision making. Dr. Fairhurst concurred that there didn't seem to be much involvement on the part of NRC in research in cooperation with others whether domestic or interna-

tional. Dr. Hornberger was concerned that the ACNW didn't have sufficient transparency of core capabilities in NRC waste-related research. He recommended that NRC have a research/TA program plan to reveal this activity. Dr. Garrick was skeptical that government employees—even if they are technically trained—could so easily replace technical consultants, which is one of the reasons cited as supporting the budget cuts in the research budget in waste management. He indicated that this was not a reasonable expectation and that the needed results may elude the NRC. Dr. Wymer asked whether a DOE representative would address mixed wastes in the discussion on DOE research outside of the Yucca Mountain program in the next meeting.

VIII. Executive Session (Open)

[Richard Major was the Designated Federal Official for this part of the meeting.]

A. Future Meeting Agenda (Open)

Appendix IV summarizes the proposed items endorsed by the Committee for the 99th ACNW Meeting, March 23–25, 1998.

B. Future Committee Activities (Open)

The ACNW will hold its 100th meeting April 21–23, 1998.

Dated at Rockville, Maryland, this 6th day of February 1998.

Frank J. Miraglia, Jr.,
Acting Director, Office of Nuclear Reactor
Regulation.

[FR Doc. 98-3582 Filed 2-11-98; 8:45 am]

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NUCLEAR REGULATORY COMMISSION

Advisory Committee on Nuclear Waste; Notice of Meeting

The Advisory Committee on Nuclear Waste (ACNW) will hold its 98th meeting on February 24-26, 1998, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland. The date of this meeting was previously published in the Federal Register on Wednesday, December 3, 1997 (62 FR 63970).

The entire meeting will be open to public attendance.

The schedule for this meeting is as follows: Tuesday, February 24, 1998—8:30 a.m. until 6:00 p.m.; Wednesday, February 25, 1998—8:30 a.m. until 6:00 p.m.; Thursday, February 26, 1998—8:30 a.m. until 4:00 p.m.

A. Meeting With NRC's Director, Division of Waste Management, Office of Nuclear Material Safety and Safeguards (NMSS)

The Committee will meet with the Director to discuss recent developments within the division such as developments at the Yucca Mountain project, rules and guidance under development, available resources, and other items of mutual interest.

B. Viability Assessment

Representatives of the Department of Energy's Yucca Mountain Project office will discuss the status of the viability assessment being performed for the proposed high-level waste repository. The purpose of this effort is to make an informed assessment of the viability of licensing and constructing a repository at Yucca Mountain, NV.

C. Risk-Informed and, Where Appropriate, Performance-Based Regulation

The Committee will review a proposed Commission paper on the use of risk-informed and, where appropriate, performance-based and less prescriptive regulation by NRC's Office of Nuclear Materials Safety and Safeguards.

D. Implementing Rule for the Proposed Yucca Mountain Repository

The Committee will review the NRC staff's proposed strategy for

development of regulations governing disposal of high-level waste at the proposed Yucca Mountain, NV high-level waste repository.

E. Nuclear Waste Related Research

The Committee will review various aspects of waste related research that is underway or planned in preparation of sending a report to the Commission. Participants may include representatives of the NRC staff, the nuclear industry, and possibly individuals representing foreign programs.

F. Preparation of ACNW Reports

The Committee will discuss planned reports, including comments on the NRC/NMSS staff's high-level waste Issue Resolution Status Report; nuclear waste research activities; risk-informed and, where appropriate, performance-based regulation; the implementing rule for the proposed Yucca Mountain repository; and other topics discussed during this and previous meetings as the need arises.

G. Committee Activities/Future Agenda

The Committee will evaluate topics proposed for future consideration by the full Committee and Working Groups. The Committee will discuss ACNW-related activities of individual members.

H. Miscellaneous

The Committee will discuss miscellaneous matters related to the conduct of Committee activities and organizational activities and complete discussion of 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 September 2, 1997 (62 FR 46382). In accordance with these procedures, oral or written statements may be presented by members of the public, electronic recordings will be permitted only during those portions of the meeting that are open to the public, and questions may be asked only by members of the Committee, its consultants, and staff. Persons desiring to make oral statements should notify the Chief, Nuclear Waste Branch, Mr. Richard K. Major, as far in advance as practicable so that appropriate arrangements can be made to schedule the necessary time during the meeting for such statements. Use of still, motion picture, and television cameras during this meeting will 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 contacting the Chief, Nuclear Waste Branch, 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 notify Mr. Major as to their particular needs.

Further information regarding topics to be discussed, whether the meeting has been cancelled or rescheduled, the Chairman's ruling on requests for the opportunity to present oral statements and the time allotted therefor can be obtained by contacting Mr. Richard K. Major, Chief, Nuclear Waste Branch (telephone 301/415-7366), between 8:00 a.m. and 5:00 p.m. EST.

ACNW meeting notices, meeting transcripts, and letter reports are now available on FedWorld from the "NRC MAIN MENU." Direct Dial Access number to FedWorld is (800) 303-9672; the local direct dial number is 703-321-3339.

Dated: February 6, 1998.

John C. Hoyle,
Acting Advisory Committee Management
Officer.

[FR Doc. 98-3526 Filed 2-11-98; 8:45 am]

BILLING CODE 7590-01-P

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Reactor Safeguards Subcommittee Meeting on Thermal-Hydraulic and Severe- Accident Phenomena; Notice of Meeting

The ACRS Subcommittee on Thermal-Hydraulic and Severe-Accident Phenomena will hold a meeting on February 18, 1998, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland.

The entire meeting will be open to public attendance.

The agenda for the subject meeting shall be as follows: *Wednesday, February 18, 1998—8:30 a.m. until the conclusion of business.*

The Subcommittee will review the elements of the NRC Office of Nuclear Regulatory Research Programs pertaining to thermal-hydraulics, in support of the ACRS report to the Commission on Safety Research. The purpose of this meeting is to gather information, analyze relevant issues and facts, and to formulate proposed positions and actions, as appropriate, for deliberation by the full Committee.

Oral statements may be presented by members of the public with the concurrence of the Subcommittee



APPENDIX II

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

Revised: FEBRUARY 11, 1998

] Transcribed
 Portions

SCHEDULE AND OUTLINE FOR DISCUSSION
 98TH ACNW MEETING
 FEBRUARY 24-26, 1998

Tuesday, February 24, 1998, Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland

- | | | | |
|----|---|--|---|
| 1) | 8:30 - 8:40 A.M.
8:33 | <u>Opening Remarks by the ACNW Chairman (Open)</u>
1.1) Opening Statement (BJG/RKM)
1.2) Items of Current Interest (BJG/RKM) |] |
| 2) | 8:40 - 10:30 A.M.
8:40 - 8:45
9:00 - 10:40

8:45 - 9:00
10:30 - 10:45 A.M.
10:40 - 11:00 | <u>Implementing Rule for the Proposed Yucca Mountain Repository (Open) (CF/LGD)</u>
The Committee will review the NRC staff's strategy and rulemaking plan for the proposed Yucca Mountain, NV, high-level waste repository.
- Janet Kotra, NMSS
- Tim McCartin, NMSS
Recess
BREAK |] |
| 3) | 10:45 - 12:00 NOON
11:00 - 11:45

12:00 - 1:00 P.M.
11:45 - 12:50 | <u>Discuss the content of an ACNW report on a Yucca Mountain specific rule (Open) (CF/LGD)</u>

LUNCH | |
| 4) | 4:00 - 3:00 P.M.
12:50 1:48

3:00 - 3:15 P.M. | <u>Preparation of ACNW Reports (Open)</u>
Discuss a possible report on the following topic
4.1) Issue Resolution Status Reports for the High-Level Waste Prelicensing Program (GMH/LGD) | |
| 5) | 3:15 - 5:30 P.M.
1:48 - 2:40

2:40 - 3:00
3:00 - 3:35
3:35 - 3:50
3:50 - 5:10 | <u>Committee Activities/Future Agenda (Open) (BJG/RKM)</u>
{ 5.1) Set agenda for 99th ACNW Meeting March 24-26, 1998
5.2) Review topic for out months
5.3) Review EDO response to recent Committee letters
5.4) Recent and planned attendance at outside meetings:
a. January '98 NWTRB Meeting (LGD) 5:00 - 5:35
b. January '98 DOE Expert Elicitation (Waste Form) (ACC) 11:35 - 11:50 | |

Break
 Briefing by ACNW staff re Prop Measures for Strategic Plan Self Assessment
 Discuss items to be discussed with Comm. Diaz.
 Break

postponed to
2/25/97

5:10 - 5:30
5:30 P.M.

- c. January '98 DOE Expert Elicitation (Coupled Processes) (CF) 1:40 -
d. January '98 ANDRA Meeting (CF)
e. January '98 Near-Field Planning Session (RGW) 2/26 11:20 - 11:30
f. February '98 LLW Forum meeting (HJL)
Summary of meeting with Commissioner Diaz.
RECESS

Wednesday, February 25, 1998, Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland

- 6) ~~8:30 - 8:35 A.M.~~ 8:35 - 8:45 Opening Remarks by ACNW Chairman (Open)
(BJG/RKM)
- 7) ~~8:35 - 10:30 A.M.~~ 8:40 - 10:40 Viability Assessment (Open)
Representatives of the Department of Energy's Yucca Mountain Project Office will discuss the status of the VA being performed for the Yucca Mountain project (BJG/LGD)
- Carol Hanlon, DOE, YMPO
- Tim Sullivan, DOE, YMPO
- Dan Kane, DOE, YMPO
- 10:30 - 10:45 A.M. 10:40 - 11:00 ***BREAK***
- 8) ~~10:45 - 12:00 NOON~~ 11:00 - 11:35 Meeting with NRC's Deputy Director, Division of Waste Management, Office of Nuclear Material Safety and Safeguards (Open) (BJG/RKM)
A current events discussion with Margaret Federline on developments at Yucca Mountain, rules and guidance under development, available resources, and other items of mutual interest.
11:35 - 11:55 YM status report - C. Hanlon, YMPO
~~12:00 - 1:00 P.M.~~ 11:55 - 1:00 ***LUNCH***
- 9) ~~1:00 - 5:30 P.M.~~ 1:00 - 1:40 Preparation of ACNW Reports (Open)
Discuss possible ACNW reports on the following topics:
9.1) IRSR (GMH/LGD)
9.2) Viability Assessment (BJG/LGD)
9.3) Yucca Mountain rule (CF/LGD)

3:55 - 5:00

5:40

RECESS

- 3:55

Briefing by Susan Fonner re Discussion of "Preleisional" document/info. in ACNW and NRC Meetings

Thursday, February 26, 1998, Two White Flint North, Room T-2B3, 11545 Rockville Pike, Rockville, Maryland

- 10) ^{8:45} 8:30 - ~~8:35~~ A.M. Opening Remarks by ACNW Chairman (Open)
(BJG/RKM)
- 11) ^{10:25 - 11:20} ~~8:35~~ - 9:30 A.M. Nuclear Waste Related Research (Open) (GMH/HJL-GNG)
This will be a planning session to prepare a review strategy for the ACNW portion of the research report to the Commission
- 12) ^{8:45 - 10:25} ~~9:30 - 12:00~~ NOON Continue preparation of ACNW Reports (Open)
Continue preparation of ACNW reports as noted in item 9
- 12:00 NOON ***ADJOURN***

APPENDIX III: MEETING ATTENDEES

98TH ACNW MEETING
FEBRUARY 24—26, 1998

<u>ACNW MEMBERS</u>	<u>1st Day</u>	<u>2nd Day</u>	<u>3rd Day</u>
Dr. B. John Garrick	<u> X </u>	<u> X </u>	<u> X </u>
Dr. Charles Fairhurst	<u> X </u>	<u> X </u>	<u> X </u>
Dr. George W. Hornberger	<u> X </u>	<u> X </u>	<u> X </u>
Dr. Raymond G. Wymer	<u> X </u>	<u> X </u>	<u> X </u>

<u>ACNW STAFF</u>	<u>1st Day</u>	<u>2nd Day</u>	<u>3rd Day</u>
Dr. Andrew Campbell	<u> X </u>	<u> X </u>	<u> X </u>
Ms. Lynn Deering	<u> X </u>	<u> X </u>	<u> X </u>
Mr. Howard J. Larson	<u> X </u>	<u> X </u>	<u> X </u>
Mr. Richard K. Major	<u> X </u>	<u> X </u>	<u> X </u>
Dr. John T. Larkins	<u> X </u>	<u> X </u>	<u> X </u>
Ms. Michele S. Kelton	<u> X </u>	<u> X </u>	<u> X </u>

ATTENDEES FROM THE NUCLEAR REGULATORY COMMISSION

FEBRUARY 24, 1998

J. Kotra	NMSS
M. Rose Byrne	NMSS
P. Justus	NMSS
S. Wastler	NMSS

FEBRUARY 25, 1998

S. Wastler	NMSS
J. Trapp	NMSS
B. Ibrahim	NMSS
J. Davis	NMSS
P. Justus	NMSS
K. Stablein	NMSS
M. Nataraja	NMSS
K. Chang	NMSS
K. Schneider	OCM/ND
M. Federline	NMSS
R. Johnson	NMSS
M. Lee	NMSS
J. Kotra	NMSS

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

FEBRUARY 24, 1998

B. Gamble	BAH
B. Murray	BAH
M. David	Scientech
A. Haghi	M&O/Duke
S. Hanauer	DOE
J. York	Booz-Allen & Hamilton
L. Fairbent	TEC
R. Andersen	NEI
J. Docka	TRW
D. Fenster	M&O/Woodward-Clyde
R. Wallace	USGS/HQ
C. Hanlon	DOE
M. Quint	ANSTO
G. Roseboom	USGS

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC (CONT'D)

FEBRUARY 24, 1998 (cont'd)

J. Woodward	ICF Kaiser
S. Echols	Winston & Strawn
P. Phibbs	Nuclear Waste News
M. Michewicz	DOE
P. Krishna	M&O/TRW
A. Gil	DOE/YMP
A. Brownstein	DOE

FEBRUARY 25, 1998

R. Wallace	USGS/HQ
D. Fenster	M&O/Woodward-Clyde
B. Gamble	BAH
R. Murray	BAH
M. David	Sciencetech
S. Hanauer	DOE
D. Kane	DOE
L. Fairobent	TEC
J. York	Booz-Allen & Hamilton
C. Hanlon	DOE
E. Lane	Newsday
E. Regnier	DOE
M. Michewicz	DOE
R. Murray	DOE
S. Krill	ICF
A. Gil	DOE
R. Godfrey	Embassy of Australia
P. Krishna	M&O/TRW
R. Andersen	NEI
G. Roseboom	USGS
M. Conley	Washington Nuclear Co.
A. Haghi	M&O/Duke

APPENDIX IV: FUTURE AGENDA

The Committee agreed to consider the following during the 99th ACNW Meeting, March 21—23, 1998:

- Meeting with Commissioner McGaffigan - The Committee will meet with Commissioner McGaffigan to discuss items of mutual interest.
- Nuclear Waste-Related Research - The Committee will review various aspects of waste-related research underway or planned in preparation for sending a report to the Commission. Participants may include representatives of the NRC staff, the nuclear industry, and possibly individuals representing foreign programs.
- Decommissioning Guidance - The Committee will review proposed guidance for implementing the recent final rule on radiological criteria for license termination. Guidance to be reviewed will include documents on: surveys, dose modeling, restricted release criteria, and ALARA (as low as is reasonably achievable) criteria.
- Risk-Informed, Performance-Based Regulation - The Committee will review recent agency initiatives on risk-informed, performance-based regulation.
- Meeting with NRC's Director, Division of Waste Management, Office of Nuclear Material Safety and Safeguards - The Committee will meet with the Director to discuss recent developments within the division such as developments at the Yucca Mountain project, rules and guidance under development, available resources, and other items of mutual interest.
- Preparation of ACNW Reports - The Committee will discuss planned reports, including risk-informed, performance-based regulation, waste related research, regulatory guides dealing with decommissioning, and other topics discussed during this and previous meetings as the need arises.
- Committee Activities/Future Agenda — The Committee will consider topics proposed for future consideration by the full Committee and Working Groups. The Committee will discuss ACNW-related activities of individual members.
- Miscellaneous — The Committee will discuss miscellaneous matters related to the conduct of Committee activities and organizational activities and complete discussion of matters and specific issues that were not completed during previous meetings, as time and availability of information permit.

**APPENDIX V
LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE**

[Note: Some documents listed below may have been provided or prepared for Committee use only. These documents must be reviewed prior to release to the public.]

MEETING HANDOUTS

**AGENDA
ITEM NO.**

DOCUMENTS

2

Implementation Rule for a Proposed Repository at Yucca Mountain

1. Development of Regulations for a Proposed Repository at Yucca Mountain, Staff Consideration, presented by T. McCartin, NMSS, and Janet Kotra, NMSS, dated February 24, 1998 [Viewgraphs]

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Committee Activities/Future Agenda

5.4

2. Information on the International HLW Conference in Las Vegas, Nevada - May 11-14, 1998 [Handout 5.1]
3. Upcoming Meetings, Technical Exchanges, and Appendix 7 Visits [Handout 1]

7

Status of the Viability Assessment Being Performed at the Yucca Mountain

4. Viability Assessment Overview, presented by J. T. Sullivan, Viability Assessment Team Leader, Yucca Mountain Site Characterization Office, DOE, dated February 25, 1998 [Viewgraphs]
5. Viability Assessment Design Concept for the Repository and Waste Package, presented by Dan Kane, Yucca Mountain Site Characterization Office, DOE, dated February 25, 1998 [Viewgraphs]
6. Volume 4, License Application Plan, presented by Carol L. Hanlon, Yucca Mountain Site Characterization Office, DOE, dated February 25, 1998 [Viewgraphs]

Status of Yucca Mountain Site Characterization

7. A Chronology of the Unsaturated Zone at Yucca Mountain, assembled by E. Roseboom [Handout]

11 Nuclear Waste-Related Research

8. NRC's Safety Research Program: Report to Commission, Advisory Committee on Nuclear Waste, presented by Giorgio N. Gnugnoli, ACNW, dated February 26 **[Viewgraphs]**

None Memorandum from Shirley Ann Jackson, Chairman, NRC, to Robert Seale, Chairman, Advisory Committee on Reactor Safeguards, Subject: Discussion on Risk-Informed, Performance-Based Regulation, dated February 20, 1998 **[Handout]**

MEETING NOTEBOOK

AGENDA
ITEM NO.

DOCUMENTS

1

Opening Remarks by ACNW Chairman

1. Schedule and Outline for Discussion, 98th ACNW Meeting
2. Introductory Statement by the ACNW Chairman, February 24—26, 1998, First Day
3. Items of Interest
4. Introductory Statement by the ACNW Chairman, February 24—26, 1998, Second Day
5. Introductory Statement by the ACNW Chairman, February 24—26, 1998, Third Day

2

Implementing Rule for the Proposed Yucca Mountain Repository

6. Status Report
7. SECY-97-300, "Proposed Strategy for Development of Regulations Governing Disposal of High-Level Radioactive Wastes in a Proposed Repository at Yucca Mountain, Nevada"
8. Letter from John Garrick, ACNW, to Chairman Shirley Ann Jackson, NRC, Subject: Recommendations Regarding the Implementation of the Defense-in-Depth Concept in the Revised 10 CFR Part 60," dated October 31, 1998

5

Committee Activities/Future Agenda

9. Set Agenda for 99th ACNW Meeting, March 24—26, 1998
10. Set Agenda for Out Months Through April 1998
11. EDO Responses to ACNW Reports
12. EDO's List of Future Meeting Topics
13. OCRWM/M&O Meeting List and ACNW 1998 Calendar
14. Recent and Planned Attendance at Outside Meetings

MEETING NOTEBOOK (CONT'D)

AGENDA
ITEM NO.

DOCUMENTS

7

Viability Assessment

15. Status Report
16. Memorandum from Stephan Brocoum, Assistant Manager for Licensing, to John T. Greeves, Director, Division of Waste Management, re Identification of Key Documents Relevant to U.S. Department of Energy's (DOE) Viability Assessment (VA), dated January 8, 1998
17. Agenda and Handouts from January 14, 1998 Technical Exchange on Viability Assessment Product: Introduction and Status

8

Meeting with NRC's Deputy Director, Division of Waste Management, NMSS

18. Status Report

11

Nuclear Waste-Related Research

19. Status Report
20. ACNW Approved Insert to ACRS Report
21. Summary of Discussion Held Between Chairman Jackson, NRC, and ACRS on February 5, 1998 **[NRC Research Portion Only]**
22. PowerPoint® Diagram Illustrating Candidate Structure for ACNW's Contribution to ACRS Report to the Commission
23. Revised Scoping Document