MINUTES OF THE 53RD ACNW MEET OCNW-0071 PDR 2/18/94 MAY 19-20, 1993

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Issued: June 25, 1993



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MINUTES OF THE 53RD MEETING OF THE ADVISORY COMMITTEE ON NUCLEAR WASTE MAY 19-20, 1993 BETHESDA, MARYLAND

The 53rd meeting of the Advisory Committee on Nuclear Waste was held Wednesday and Thursday, May 19-20, 1993, 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, and Dr. Kenneth Foland, ACNW consultant, were also present. [For a list of attendees, see Appendix III.]

I. <u>CHAIRMAN'S REPORT</u> (Open)

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

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

- Mr. Howard Larson, ACNW staff, received NRC's Meritorious Service Award for Engineering Excellence, in recognition of his superb technical competence and outstanding judgment in support of the activities of the Committee.
- Mr. Stewart Long, Advisory Committee Senior Fellow, will be leaving to work with Combustion Engineering.
- Blasting of the first pilot hole of the Yucca Mountain Exploratory Studies Facility (ESF) North Portal starter tunnel began on April 13, 1993.

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- Dr. Paul Shewmon is retiring from the Advisory Committee on Reactor Safeguards.
- Commissioner James Curtiss has announced that he will not seek reappointment as a Commissioner. His term of office ends on June 30, 1993.
- The Southeast Compact voted unanimously to deny Nebraska and all Central Interstate Compact States access to Barnwell as of July 1, 1993.

II. <u>SYSTEMATIC REGULATORY ANALYSIS (SRA) AND DEVELOPMENT OF THE</u> <u>LICENSE APPLICATION REVIEW PLAN (LARP)</u> (Open)

[Note: Ms. Lynn Deering was the Designated Federal Official for this portion of the meeting.]

Mr. John Linehan, Division of High-Level Waste Management (HLWM), provided a brief introduction and introduced Mr. Robert Johnson, HLWM, as the lead presenter. Mr. Linehan noted that he had addressed the Committee in 1991 regarding plans to implement the Systematic Regulatory Analysis (SRA) process, Iterative Performance Assessment (IPA), and integration between NMSS and RES. He indicated that much progress has been made since that time relating to the development of user needs. He discussed the efforts toward development of the License Application Review Plan (LARP) using SRA, pre-licensing reviews of DOE documents, including DOE's Total Systems Performance Assessment (TSPA), as well as the NRC IPA activities. He added that RES had revised its research strategy that reflects the compliance determination strategies (CDSs) developed to date by the NMSS staff as well as feedback from phase one and two of the IPA.

Mr. Linehan noted that Mr. Johnson would discuss the status of the LARP development and give examples of CDSs. He also noted that the NRC staff has completed sixteen CDSs to date, and that the CDSs have confirmed the existing user needs. He added that the staff plans to complete all seventy-five of the CDSs and associated user needs by the end of FY 1993.

INTRODUCTION

Mr. Johnson commended the efforts of the NRC and the Center for Nuclear Waste Regulatory Analyses (CNWRA) staff for their contributions in developing and implementing SRA. He indicated that he would discuss the LARP, SRA, and the relationship of this work to the research program. Following an overview of his presentation, Mr. Johnson indicated that two documents serve as guides for the

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NMSS and RES programs: the Regulatory Strategy (RS) and the Overall Review Strategy (ORS). The RS document describes how the SRA is used to identify regulatory and institutional uncertainties, and how to resolve uncertainties with rulemakings and guidance documents. The ORS document provides guidance to the other major parts of the program, including the site characterization review, quality assurance, technical assistance capability, such as LARP, IPA, and SRA, and the license application review, and how research supports the licensing program.

OVERALL REVIEW STRATEGY

The ORS consists of three strategies: the license application review strategy, the prelicense application review strategy, and a series of strategies for developing review capability. Using a diagram, Mr. Johnson explained how the ORS links these three broad policy documents to additional planning documents that contain a higher level of detail. For example, the next tier of documents includes the Prelicense Application Review Plan Strategy that describes development of the review plan documents, such as the Study Plan Review Plan and the Topical Report Review Plan. Another example document on this second tier is the License Application Review Plan Development Strategy that describes how the LARP is to be developed. The remaining documents on this second tier include the Research Strategy, and the Performance Assessment and Analysis Methods Development Strategy. Two additional tiers of documents follow, which include the Long-Range Strategic Planning documents, and Annual Development Plan, which lays out specific work the staff will perform who will do it, schedules, etc., as well as the Research Program Plan. Mr. Johnson indicated that he will focus 1) the License Application Review Strategy (tier 1), the on: License Application Review Plan Development Strategy (tier 2), the Research Strategy (tier 3) and the Research Program Plan (tier 4).

INTEGRATION AND TRACEABILITY

Mr. Johnson addressed program integration and traceability. He described a vertical and horizontal integration of the following documents: LARP, License Application Standard Format and Content Guide (SFCG), DOE Annotated Outline (AO), DOE License Application, and Safety Evaluation Report, all of which have or will be structured for consistency and compatibility. As an example, he noted that DOE is following the SFCG as it develops its AO.

LICENSE APPLICATION REVIEW STRATEGY

Mr. Johnson noted that this strategy is aimed at a broad level, consisting of a statement of basic objectives and approaches, as

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opposed to the LARP strategic plan, which provides more detailed implementation, including schedules and staffing.

He described two principal objectives for the staff's review of the LA: 1) determine the completeness and acceptability of DOE's license application, and 2) document the findings with respect to compliance with 10 CFR Part 60 in the SER within 18 months. He described strategies for achieving these objectives during licensing review. These strategies include: 1) conduct an initial acceptance review of the license application, 2) conduct a compliance review to verify acceptability of DOE's compliance demonstrations, including independent analysis, 3) use the results of the prelicense reviews to ensure that sufficient information will be presented in the license application for NRC to accept it, with the idea of working out as many problems as possible during the prelicensing phase, 4) use a systematic audit approach for compliance reviews focusing on the areas of most importance (key technical uncertainties), and 5) select the preferred approach from four types of compliance reviews taking into account the results of staff analyses and testing research.

Regarding the issue of random auditing and focusing on priority areas of concern, Mr. Johnson noted that the staff did not intend for DOE to use key technical uncertainties as guidance for determining which areas of the license application require the greatest attention and detail. Dr. Moeller suggested that DOE should use this information to bolster the areas of greatest concern to the NRC. Dr. Hinze cautioned Mr. Johnson against giving DOE the impression that the staff would focus only on key areas, noting that the staff may discover other important areas during the review.

Mr. Johnson described five types of review: 1) Acceptance review, 2) General information review, 3) Safety review, 4) Detailed safety review supported by analyses (high potential risk of noncompliance with performance objectives), and 5) Detailed technical review supported by independent tests, analyses, and other investigations (high potential risk of non-compliance and most difficult to resolve). He noted that the bulk of the application would receive a Type three review. Type 4 reviews include conducting analyses using existing methods and Type 5 reviews involve some type of NRC research, such as code development or modification of codes to conduct independent analyses. He noted that there was much subjective judgment in assigning a Type 4 or Type 5 rating. SRA is the process used to assign Type 4 and 5 reviews. Areas of high risk are called key technical uncertainties (KTUs).

Mr. Johnson defined a technical uncertainty as a lack of certitude concerning how to obtain information, how to analyze information, and in understanding conditions or processes. A KTU is a subset of

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technical uncertainty. He added that a KTU is where there is a lack of understanding of a condition or process that credibly exists and could have a significant adverse effect on repository performance, thereby posing a high risk of noncompliance.

STRATEGY FOR DEVELOPING THE LICENSE APPLICATION REVIEW PLAN

Mr. Johnson indicated that the strategy involves: 1) early development, allowing time to conduct research and model development, and gain experience in prelicense review activities, 2) developing and revising guidance and approaches iteratively, based on the evolving nature of the program, and 3) use of the SRA to develop key guidance documents such as SFCG, and LARP, and to identify and resolve associated technical uncertainties. Mr. Johnson defined SRA as a structure and systematic process designed to apply the principles of systems engineering for the staff's development of regulatory documents. He noted that SRA continues to evolve from what it was several years ago, as it is used and tested by NRC and CNWRA staff.

In discussing the structure of SRA, Mr. Johnson observed that 10 CFR Part 60 was grouped into 100 regulatory requirement topics that are consistent with the SFCG, AO, LARP, etc. One characteristic of the SRA is that it follows a logical sequence of analyses based on 10 CFR Part 60. The sequence started with analysis of Part 60 for regulatory and institutional uncertainties, and now is focused on developing and refining the SFCG and LARP. Other characteristics of SRA were discussed, some of which include, it uses multidisciplinary technical groups, and performance assessment to help focus reviews on technical areas most important to performance; it documents results including rationale for decisions, and it is supported by a computerized database. The database is a program architecture developed by the CNWRA that supports the preparation of all the regulatory documents developed under SRA, and is interactive with the OITS.

STRUCTURE AND CONTENT OF THE LICENSE APPLICATION REVIEW PLAN

Mr. Johnson stated that the LARP is both generic (acceptance reviews, safety reviews) and specific (KTUs) to Yucca Mountain, and the LARP contains 100 individual Review Plans (SRPs), each structured into six parts: applicable 10 CFR Part 60 requirements, review strategy, review methods and acceptance criteria, implementation responsibilities and interfaces, example evaluation findings, and references.

He noted that there are two analyses conducted by the staff to develop the SRPs of the LARP: the Compliance Determination Strategy (CDS) that provides the review strategy for each of the 100 topics, and the Compliance Determination Method (CDM) that

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provides review methods and acceptance criteria, implementation, example evaluation findings, and references.

SCHEDULE AND STATUS FOR LARP DEVELOPMENT

Draft 0 of the LARP will be issued in late 1993, and the final LARP is planned for 2000. Draft 0 will include Part A, which is the LARP review strategy, 10 CFR Part 60 requirements for each of the 100 plans, and the CDSs for all 100 plans. Also, it will include three complete review plans for the following topics: igneous activity, shafts and ramps, and quality assurance.

RELATIONSHIP OF LARP TO RESEARCH PROGRAM AND EXAMPLES

Mr. Johnson indicated that research will be used in the following ways to support licensing activities:

- Support Staff's detailed reviews, including development of an independent understanding of processes and conditions, provision of a review method such as a model or code, and provision of limited confirmatory information.
- Use the CDSs to identify KTUs where research results will support the staff's detailed reviews.
- Provide research in a timely manner during prelicensing to support the review of DOE's site characterization program, and to support the development of IPA and other analysis methods.

Finally, Mr. Johnson presented three examples of CDSs: potentially adverse condition (PAC) of evidence of extreme erosion, potentially adverse condition of evidence of igneous activity, and assessment of compliance with the engineered barrier system performance objectives. He noted, for the CDS for extreme erosion, that the Acceptance review is a Type 1 review; the Safety Review is a Type 3 review. In addition, no KTUs and no research user needs were identified. Thus no detailed reviews are needed and no research is needed to support the reviews.

Dr. Hinze asked whether the CDS for erosion would provide guidance to the staff for making a determination on issue resolution and, if not in the CDS, then where could this type of guidance be found in the review strategy. Mr. Johnson explained that the CDS provides guidance on how to review and what to look for in a general way for PACs, but more detail, such as review methods and acceptance criteria is provided in the CDM. Thus the most detailed guidance on erosion or any PAC would be found in the individual SRP of the LARP. The CDM for erosion will be prepared in FY 1994. He explained that it was not chosen as one of the three CDMs that the

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staff is doing this year because the staff wanted to use examples that include Type 1 through 5 reviews.

Dr. Hinze noted that the staff would be conducting its issue resolution review of extreme erosion before the CDM is completed. He added that he believes that generic guidance should be developed for the staff to make findings regarding issue resolution. Mr. Johnson noted that the Topical Report Review Plan would be used to review topical reports, which are the vehicles for issue resolution.

Dr. Pomeroy continued the line of questioning by asking if the staff makes a favorable determination regarding the erosion topical report, how would this be documented and factored into the overall system? Mr. Johnson noted that, if the staff had no comments, it could make a preliminary sufficiency finding.

During Mr. Johnson's discussion on the final examples of CDSs, Dr. Steindler questioned why is a distinction is made between information acquired through research and technical assistance with respect to user needs. Mr. Johnson pointed out that there is a strong need for correlation between the two concepts of research and technical assistance. The problem definition is the same, the user is the same, and the methodologies to acquire the information may be the same, yet there is no evidence that technical assistance (TA) and research activities are correlated.

This briefing was for information only. No Committee action was taken at this meeting as a result of this briefing.

III. NRC HIGH-LEVEL RADIOACTIVE WASTE RESEARCH PROGRAM PLAN (Open)

[Note: Ms. Lynn Deering was the Federal Official for this portion of the meeting.]

Mr. Melvin Silberberg, Office of Nuclear Regulatory Research (RES), introduced the topic by thanking the ACNW members for their interaction with the RES staff on previous drafts of the high-level radioactive waste research program plan. Mr. Silberberg noted that the RES staff intend to issue the plan for public comment in the Federal Register after gaining additional feedback from the Committee. He noted that the RES staff do not intend to brief the Nuclear Safety Research Review Committee (NSRRC) prior to issuing the document for public comment.

Mr. Silberberg's outline of his presentation included: purpose of the plan, research strategy, NMSS/RES coordination and integration, and examples of program implementation. He indicated that he would

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address key points of program strategy, as opposed to details of ongoing research, itself.

PURPOSE OF RESEARCH PLAN

After acknowledging members of the NMSS staff for their assistance in developing the plan, Mr. Silberberg discussed the purpose of the plan, noting its primary purpose is to communicate what research NRC is conducting and secondly, the process for integrating the research with the licensing program.

He highlighted that the three reasons why NRC performs research is to: 1) develop licensing tools and technical bases to judge DOE license application adequacy; 2) ensure sufficient independent understanding of processes at the repository; and 3) maintain independent but limited confirmatory research. Dr. Hinze noted that the document does not do a good job of explaining why confirmatory research is needed. After some discussion, Dr. Silberberg agreed to clarify the need for confirmatory research in the document.

RESEARCH STRATEGY

Highlights from Mr. Silberberg's discussion of the research strategy embodied in Chapter 2 of the plan include:

Research is focused or targeted to address key technical uncertainties (KTUs) in determining compliance with 10 CFR Part 60, identified under the Systematic Regulatory Analysis (SRA).

NRC does not generate data as part of site characterization.

Research includes laboratory work, selected field experiments, and conceptual and mathematical modeling to understand important phenomenon and processes that impact on performance, and to test methods being used by DOE.

Dr. Pomeroy asked whether RES should identify as well as address KTUS. Mr. Silberberg agreed that in addressing KTUS, RES may identify additional KTUS. Dr. Steindler noted that KTUS are identified by NMSS as part of the SRA process, and should be distinguished from technical uncertainties identified by RES.

Dr. Kenneth Foland, ACNW Consultant, noted that, although the RES staff does not generate data for site characterization, the staff should identify data needed for site characterization. Mr. Silberberg agreed.

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Dr. Pomeroy asked what the staff would do if it identified late in the process additional data or measurements necessary for DOE to collect or perform. Mr. John Linehan, NMSS, responded that the staff passes information along to DOE through NUREG documents and semiannual research progress reports. To try to avoid surprises late in the process, NRC has tried to focus on some of the biggest problem areas first.

The schedule of the research program is driven by the needs of NMSS in conducting pre-licensing reviews and developing guidance for DOE, guidance for staff. Examples include the LARP and IPA.

Mr. Silberberg noted the need to conduct timely research that will influence the development of Compliance Determination Methods (CDM) that feed into the LARP. He displayed a timeline showing the start and finish of major program areas. Dr. Steindler noted that the timeline would be more useful if it defined the basis for work beginning in FY 1995 and after, to assist in five-year planning.

As he discussed the priorities for research, Mr. Silberberg addressed how the focus of the research program has evolved over time, such as moving from three repository sites to one, and the corresponding unique technical aspects of Yucca Mountain, i.e., unsaturated tuff. The criteria considered in planning research priorities include: 1) applicability to KTUS, 2) significance to assessing compliance, 3) timeliness, 4) feasibility and cost, and 5) programmatic considerations. He emphasized that the applicability to KTUS was most important, and that some KTUS are more important than others, such as those impacting performance.

Dr. Foland questioned the process for using these factors to make decisions. In addition, Dr. Pomeroy suggested that the process needs to be documented, and that an outside peer review panel should be consulted in setting priorities. Dr. Hinze asked whether all the criteria were given equal weight. Mr. Silberberg and Dr. William Ott, RES, responded that criteria 1 through 3 may be the most important, but it is difficult to determine relative importance. This topic was discussed at length, with no definitive conclusions drawn.

In reviewing the distribution of the HLW research program funds for FY 1993, it was noted that hydrology, geochemistry and geology are the highest funded areas. Dr. Ott noted that geology has increased from zero to its current funding level over the past three years in response to shifting from three sites to only the Yucca Mountain site.

Mr. Silberberg described activities involving program execution, including the annual program review with RES, NMSS and the CNWRA to revise KTUs and user needs, as appropriate. Dr. Ott added that the

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research program is reviewed periodically through quarterly reports, semiannual reports, and site visits, and that every two years program reviews are held in a specific technical area. He distinguished the reviews as technical as opposed to programmatic.

Mr. Silberberg discussed the peer review strategy, including public comment, program level NRC research review groups, expert panels, publication in the open literature, and presentations at technical meetings. Dr. Steindler noted that the document does not indicate what quality assurance requirements are imposed on NRC research. Dr. Pomeroy suggested that the RES staff consult several program managers from other government agencies to evaluate the RES program in additional to seeking public comments.

Mr. Silberberg discussed mechanisms for coordinating the program with DOE, noting that NRC does not intend to duplicate DOE's work or fill in data gaps. Rather, the strategy is driven by public health and safety issues and areas that may be critical to repository performance. Dr. Hinze noted that the NRC staff should fill data gaps in conducting some confirmatory research, which should be considered as coordination with DOE. Mr. Linehan clarified that the intent of this statement (not to fill data gaps) is to emphasize that DOE has the responsibility for collecting all information, while in some cases, NRC confirms and may add information. Dr. Steindler cautioned that RES needs to keep clear on what research NRC should do, and what DOE should do.

RES/NMSS COORDINATION AND INTEGRATION

Mr. Silberberg noted that this topic was addressed in Chapter 2 and Appendix C of the document. He used a diagram to describe the relationship of the NRC HLW research program to the licensing program. Highlights from this portion of the presentation may be summarized as follows.

Dr. Pomeroy noted that the document refers in Appendix C to an NMSS/Research Coordinator, and asked who this person is. Mr. Silberberg responded that Margaret Federline of NMSS is the coordinator. This role was established as a central point of contact between RES and NMSS to ensure coordination of SOWs at both the technical and management level.

Dr. Pomeroy noted that the document does not make clear for any particular user need whether RES is addressing the entire user need, or whether there is technical assistance work (TA) also ongoing or planned to address the user need. He suggested that there needs to be a cross-referencing in the document of ongoing research for a specific user need and related ongoing TA work.

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Dr. Steindler also noted that he could not find evidence of bilateral correlation between the TA and research programs, and that the document does not make clear whether the work RES is doing is overlapping the TA work or DOE work. He suggested that RES expand Appendix C to describe this correlation between RES and TA work. He also asked whether RES approves TA work similar to NMSS approval of RES, and noted that the document does not describe any technical assistance program reviews.

Mr. Silberberg noted that Appendix C is procedural, but it does go into the level of detail to indicate that during the annual review, RES will review related TA work. M. Federline noted that a joint quarterly review is conducted aimed at the programmatic level to look for overlap, etc. Dr. Steindler noted that this should be described in the document. Mr. Federline noted that they are looking for the right vehicles to describe the overall TA and RES programs, and are considering developing a series of documents including research strategy, IPA strategy, LARP development strategy, which would all be under the existing Overall Review Strategy document (ORS). Dr. Ott added that every research project undergoes an 1102 review, which is a formal review by the user offices to ensure that there is no overlap or duplication of work. This is described in the NRC Manual Chapter.

SUMMARY OF PROGRAM IMPLEMENTATION

Mr. Silberberg described examples of KTUs and anticipated products under the areas of performance assessment, geology, hydrology, geochemistry, engineered system, and containment. He indicated that Appendix A of the document reflects the status of KTUs identified in the various Compliance Determination Strategies (CDSs) under development within NMSS.

Mr. Silberberg concluded his talk by saying that progress in the last year within the HLW program, such as progress in the LARP and IPA and Research strategy, has provided a framework to link the research program to the licensing program throughout the prelicensing process. In addition, the staff is finding that there is consistency between existing user needs defined before the SRA process and the emerging KTUs defined under SRA. He also noted that the process is iterative.

Near the end of the discussion, Dr. Pomeroy asked whether the RES staff had given any thought to the Committee's suggestion to offer sabbaticals to NRC staff. Mr. Beckjord noted that RES is mindful of it, and they need to look at mechanisms for implementing it, given resource constraints. He added that the staff does work with universities on the cutting edge of science and is often able to maintain these relationships.

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Dr. Hinze noted that the document does not indicate whether it is generic or whether it is focused on Yucca Mountain.

Dr. Steindler noted that the RES strategy needs to specify for whom the report is intended. Mr. Silberberg indicated that the audience is for decision makers at all levels of management, as well as for the staff, CNWRA, and the public. Dr. Steindler asked [humorously] whom the document excludes?

Following the staff's presentation, the Committee discussed its concerns with the current draft plan. The Committee prepared and issued a report.

IV. <u>STANDARD REVIEW PLAN FOR THE REVIEW OF REMEDIAL ACTION OF</u> <u>INACTIVE MILL TAILINGS SITES</u> (Open)

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

Dr. Moeller introduced Mr. John Surmeier, Branch Chief, Uranium Recovery Branch (LLUR), Division of Low-Level Waste Management and Decommissioning (LLWM), Office of Nuclear Material Safety and Safeguards (NMSS). Mr. Surmeier briefly discussed the background in the development of the Standard Review Plant (SRP) that was first published in October 1985. Specifically, he reminded the meeting participants of the legal and regulatory framework of Titles I and II of the Uranium Mill Tailings Radiation Control Act (UMTRCA). He pointed out that he was focusing on the NRC's reviews of the DOE's remedial actions under Title I. He discussed why DOE was performing cleanups at these abandoned mill tailings. The primary source of exposure is the radon (²²²Rn), which is a noble gas released from the tailings containing elevated concentrations of radium (²²⁶Ra). However, Mr. Surmeier pointed out that there are other environmental concerns; these are chiefly related to (both radiological and toxic chemicals) hazardous effluents transported through ground-water contact with the tailings wastes. He characterized the changing regulatory climate in groundwater protection, which resulted in passage of the Resource Conservation and Recovery Act (RCRA), as the primary motivation to update the SRP. As a secondary observation, Mr. Surmeier would like to begin preparation of a companion document for Title II facilities (commercially-licensed by NRC or Agreement States) for reclamation, decontamination and decommissioning activities.

Dr. Steindler inquired about the long delay in the Office of Management and Budget (OMB) approval of the SRP publication. Mr. Surmeier indicated that the document was, in part, a victim of the change in administrations. The other point of contention between

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the EPA and NRC is the authority of NRC to grant approval for an alternate concentration limit when the point of exposure (POE) -- the nearest potential location for human ingestion exposure -- is greater than 500 meters from the point of compliance (POC) -- the location of the edge of the waste management area intersecting the vertical plane edge demarkation of the uppermost usable aquifer. EPA's contention is that NRC must obtain the EPA Regional Admin-istrator's concurrence for each such application.

Mr. Daniel Gillen, NMSS/LLWM/LLUR, addressed the background and development of the SRP within the context of the Uranium Mill Tailings Remedial Action (UMTRA) Program. Mr. Gillen clarified the various total number of sites. He pointed out that some physical locations had two distinct abandoned facilities, but he indicated that there are, in fact, 20 distinct construction projects associated with the UMTRA effort. Messrs. Gillen and Surmeier noted that, unlike the high-level radioactive waste management and disposal program, NRC has not issued separate regulations from the EPA-applicable standards (40 CFR Part 192, Subparts A, B, and C). NRC has the responsibility to review the remedial action at each UMTRA site and to concur that DOE's efforts comply with the EPA standards.

Mr. Gillen pointed out that the NRC executes this concurrence responsibility in two phases. The NRC concurs with the DOE's selection of the remedial action, as documented in the DOE's remedial action plan (RAP), by reviewing the RAP as detailed by the SRP. The NRC's selection concurrence rationale is documented in a technical evaluation report (TER). When DOE completes the remedial action, it submits a completion report to NRC. When NRC has reviewed this completion report, and any iterations thereof, it issues a completion review report (CRR). This is the second phase of concurrence: the performance of remedial action. Of course, there are inspections and other interactions and coordination steps involved, so that this is not just a paper reviewing exercise. When the field work is totally completed, NRC issues a caretaker's license to the DOE for surveillance in perpetuity.

Mr. Gillen proceeded to the main reason for revising the 1985 version of the SRP. Court challenges to the EPA standards forced EPA to reconsider and repromulgate the groundwater protection provisions of the standards. Until the revised standards are published in final form, the UMTRCA stipulates that the involved authorities (EPA, DOE and NRC) rely on the existing standards. The final revised rule was sent to OMB in May 1991, and it has been kept on hold in accordance with the moratorium on new regulations promulgated during President Bush's administration.

Mr. Gillen pointed out that two subjects, which were changed in the revised SRP. Firstly, the text and guidance on groundwater

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protection were revised. Both prevention of future contamination and remediation of existing contamination are addressed in the revised SRP. The second significant revision is the explicit inclusion of text and guidance on clean-up of land and structures within, and in the vicinity of, the former processing site. Dr. Steindler questioned the time frame for the use in the working level (WL) unit for the ²²²Rn hazard. Dr. Moeller pointed out that the WL is based on integrated time-of-exposure normalized to the WL-month (WLM). Evaluation of the instrumentation results always considers the length of the time of exposure to the conditions under question. Mr. Surmeier indicated that the SRP would be revised to reflect a more explicit description of the use of WLs with regard to ²²²Rn considerations.

On the point for the duration of DOE's long-term care of the closed facility, the silence in the UMTRCA is interpreted to imply an NRClicensed perpetual responsibility for DOE. Dr. Steindler questioned the significance of the phrase "long-term" in light of waste isolation performance. Mr. Gillen indicated that the performance period is 1000 years with reasonable assurance. Consequently, certain strategies, such as the use of synthetic liners (to prevent groundwater releases), would not be acceptable because such liners have not been shown to be effective beyond 30-50 years. Any reliance of that type has been placed upon natural materials, such as clay liners or enhanced infiltration covers. Mr. Michael Layton, NMSS/LLWM/LLUR, indicated that RCRA technologies spilled over into other waste isolation strategies. One of these was the use of a synthetic liner. Mr. Layton indicated that where differential settlement of tailings piles could tear a synthetic liner, a clay liner would have better plasticity and self-healing characteristics.

Mr. Gillen reviewed the history of the SRP. He characterized the purpose of the SRP as providing a consistent method of reviewing the DOE's remedial selection strategy from site to site. Due to the organization of NRC, reviewers would change from one site to another. The NRC staff developed a Standard Format and Content (SF&C) Technical Position to aid DOE in structuring their RAPs into a more standard configuration. This occurred in February of 1989. Following an internal quality assurance review, the NRC staff concluded that the SRP needed to be revised to be consistent with its own SF&C guidance, as well as the need to bring the SRP into line with the revised ground-water protection provisions of the proposed EPA standards.

Besides some restructuring of existing chapters and information, significant changes included:

• Enhanced information on hydraulic soil conductivity

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- Improved guidance on mitigating the effects of freeze/thaw cycles on the performance of the soil cover
- New guidance on site cleanup and verification
- Inclusion of pertinent information from the Staff Technical Position (STP) on Erosion Protection
- Total rewrite of the water resources section.

He also noted that the experience from a number of reviews and interchanges with DOE and the States were factored into the revision of the SRP, as well as the SF&C STP.

Dr. Pomeroy asked whether 10 CFR Part 100, Appendix A was still the guiding criteria for earthquake considerations. He was specifically interested in the expected revisions of Part 100 Appendix A to reflect probabilistic elements and the attendant impact that such changes would have on the SRP. Ms. Sandra Wastler, NMSS/LLWM/LLUR, indicated that the SRP would be reviewed upon promulgation of the Appendix A revisions.

Mr. Layton focused on the groundwater provisions of the SRP and how they were changed to reflect the evolution of the EPA standards with respect to impacts from mill tailings on groundwater resources. For regulations, he noted that the remedial action is considered in two phases. The first phase is the surface reclamation, which includes any excavation, consolidation, contouring, covering, cleanup and other surface construction activities. Placement of groundwater transport barriers to prevent or to minimize future groundwater contamination would be also included in this first phase. The second phase, which can extend for up to 100 years, concentrates on groundwater restoration, if necessary, for existing groundwater contamination.

Mr. Layton discussed each subpart of the EPA regulation with respect to the changes imposed by the EPA's proposed revisions to 40 CFR Part 192. Subpart A focuses on the disposal site (the processing and disposal sites can be different if the selected remedial action is to relocate the mill tailings), which conforms to RCRA standards codified in 40 CFR 264.92 to 264.95. The new parts that had to be reflected in the SRP include:

- Identification of the specific ground-water constituents
- List of concentration limits (background, maximum concentration limits [MCLs] or alternate concentration limits [ACLs])

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- Establishment of the need for a compliance monitoring system (background upgradient wells and POC wells)
- Establishment of a need for a post-disposal compliance period for site design performance demonstration
- Inclusion of a corrective action responsibility, in case of non-compliance

In like fashion, Subpart B relates to the processing site (which may not be the disposal site). Again, the RCRA regulations in 40 CFR 264.92 to 264.95 impose a need to identify constituents and list concentration limits, similar to those required for disposal sites. The distinguishing characteristic is the 100-year groundwater restoration period, should it be deemed necessary. However, it would be necessary that the affected aquifer is not now -- nor potentially in the future -- a source of drinking water. Since the EPA standards have not been completed, DOE has elected to postpone groundwater restoration activities at many sites. Institutional controls can be relied upon for protection of human health and the environment during this extended period. The NRC staff has not allowed and will not allow DOE to defer restoration where there is a real threat to public health.

Mr. Layton proceeded to Subpart C, which consists of alternatives to the primary EPA standard; these are called "supplemental standards." When DOE demonstrates technical impracticability, or in the case that the aquifer is a Class III (limited use/poor quality/low yield) aquifer, the EPA standards allow DOE some latitude in remedial actions, which still must come as close to the otherwise applicable primary standard as is reasonable. In any case, such supplemental standards must be sufficient to assure protection of public health and the environment.

Dr. Hinze expressed some reservations with the POC and the rationale/justification for its location. Mr. Layton pointed out that the guidance is general, because implementation is very sitespecific. Mr. Surmeier reminded the Committee that the UMTRA situation is very different from what is seen in the high-level and low-level site characterization arenas. In UMTRA the site and contamination already exist, usually in natural ore areas that have also been the sites for other industrial resource development activities. Modeling is extremely complicated and questionable in its use for developing a sampling location strategy. Dr. Hinze indicated that the definition of the POC seemed to stress proximity, which could lead to misrepresentation of the actual plume Dr. Hinze recommended that the staff be more configuration. prescriptive to DOE regarding location and spacing of monitoring wells, and hence the POC.

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Mr. Layton proceeded to discuss examples of sites where UMTRA cleanup activities are taking place. The two locations were the Green River, Utah, and Falls City, Texas, sites. He cited some problems and difficulties in conducting the remedial actions, especially from the perspective of groundwater protection:

- The travel distance from the waste impoundment to the uppermost aquifer is usually very short, about 20 feet (6.1 m).
- Theoretical and laboratory estimates of permeabilities (about 10^{-10} cm/s) tend to fall short of those demonstrated in the field (usually not exceeding 10^{-07} cm/s). This is a scaling problem and presents difficulties in justifying long-term performance.
- There is insufficient research information regarding the long-term performance of infiltration barriers, which are amended by adding bentonite for greater plasticity.
- There are sites where the upgradient direction is difficult to determine for compliance purposes (ground-water flow patterns are too complex).
- Some sites have had so much mineral resource exploration, that "background" concentrations are meaningless; for example, past exploratory boreholes were not grouted or properly sealed.

The Committee pointed out typos and editorial improvements, which are detailed in the transcript. Some more substantial recommendations included:

- It was recommended that definitions of certain terms such as maximal credible earthquake, capable fault, etc. be incorporated in the SRP.
- There is a need to add the means by which exposure consequences result from potential water contamination should be explicitly expressed, as well as the types of scenarios and assumptions used in estimating these consequences. It seems that there is an inconsistent level of prescription between this and other portions of the SRP.
- The SRP does not reference the regulatory criteria for applying supplemental standards.
- Chemical retardation is affected by more than just permeability reduction; other considerations include

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unexpected changes in redox potential or in complexing compounds. The SRP should address this.

The NRC staff requested a letter from the Committee. They specifically asked that the Committee indicate whether the general approach taken for the UMTRA sites could be used to develop an SRP for reclamation, decommissioning and decontamination of Title II (commercially-licensed) sites. Later in the meeting, the Committee prepared and issued a letter summarizing its conclusions.

V. NRC STAFF'S REVIEW PLAN FOR DOE STUDY PLANS (Open)

[Note: Ms. Lynn Deering was the Designated Federal Official for this portion of the meeting.]

Ms. Charlotte Abrams, Senior Project Manager, Division of High-Level Waste Management (HLWM), was the first speaker on the NRC staff's review plan for the DOE Study Plans. Ms. Susan Jones, Chief, Regulatory Interactions Branch, Yucca Mountain Site Characterization Project was the second speaker.

Highlights from Ms. Abrams presentation includes:

The purpose of the NRC staff's review of the DOE study plans is for early identification and resolution of potential licensing issues during the pre-licensing phase of the DOE's HLW program.

The DOE Site Characterization Plan (SCP) describes the site characterization program at the investigation level. The study plans present the details of the studies and activities to be conducted under each investigation.

The Level of Detail Agreement (LODA) between NRC and DOE was officially revised on March 22, 1993, to reflect increased experience of DOE and NRC staff. It describes the content requirements for the study plans, timing of the review, and procedures and reference requirements. The NRC staff reviewed the study plans in accordance with the LODA.

The revised LODA streamlines the content requirements for study plans by allowing the content and level of detail to vary for different types of study plans, i.e., study plans involving laboratory studies, versus those involving field work or modeling.

The NRC has 90 days to review and approve study plans. However, DOE can begin work at its own risk after 90 days if NRC has not responded. For studies that do not involve surface disturbing activities or are outside the controlled area, DOE can begin work any time.

The revised LODA also streamlines the way in which DOE provides procedures and references for each study plan. Before the revision, DOE had to provide a list of all procedures applicable to the study plan. This was a problem in that every time a procedure was changed, study plans would have to be revised and resubmitted. Now, DOE provides an up-to-date list of procedures as an attachment with the transmittal letter of any study plan. If DOE changes a procedure, it must notify the NRC. The NRC can call DOE for an updated list of procedures any time.

Finally, the LODA requires DOE to highlight specific changes made in the revised study plans.

Dr. Hinze asked whether all the study plans for the ESF had been submitted and approved by the NRC. Ms. Abrams and Ms. Jones clarified that four of the five studies have been submitted and were approved by NRC before the tunnel construction began. The four study plans involve testing inside the 200 foot tunnel.

Dr. Hinze asked whether the absence of a Licensing Support System (LSS) was detrimental to the staff's review of study plans. Ms. Abrams indicated that the LSS would be helpful; in the meantime, the staff is using the NRC NUDOCs system.

The Study Plan Review Plan of December, 1990 was revised on March 10, 1993, to streamline the review process from a two phased review to a single phased review. The old plan required the staff to conduct an acceptance review and a detailed technical review for study plans meeting specific criteria. The new plan calls for a one step review of all study plans and the staff may elect to provide detailed comments or questions on selected study plans that meet the same criteria. The detailed comments can be provided separately, but should be provided within six months.

The study plan review process is coordinated by the Senior Project Manager. The Project Manager identifies the appropriate lead and transmits a copy of the study plan to the lead scientist, his or her section leader, as well as to the section leader for performance assessment and quality assessment. Reviews are supported by the CNWRA and RES staffs as well, if the lead reviewer determines additional support is needed.

Dr. Hinze inquired how the NRC staff handles the review of study plans that reference related study plans, not yet available. Ms. Abrams explained that the staff may defer detailed technical review of such study plans until the entire package can be reviewed, or staff can go back any time to rereview a study plan when new information comes in.

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Dr. Pomeroy asked whether DOE has had to add to the program additional study plans that were not anticipated in the SCP. Ms. Jones responded that she thought there was only one, in the waste package area. However, activities have been added to existing study plans.

DOE may request the NRC to conduct an expedited review for acceptance and objection level concerns. NRC will notify DOE within 30 days of receipt of the study plan if it has objections to the work. NRC conducted expedited reviews of the four ESF related study plans.

There are 104 study plans. Fifty one have been received by NRC. NRC has completed reviews of 38 of these. Eighteen study plans have been revised by DOE and three of these have been reviewed by NRC staff. The NRC staff has provided detailed comments and questions on eight study plans with 55 open items, most of which DOE has responded to.

The NRC will use the open item tracking system (OITS) to track comments, questions, and objections resulting from review of the SCP, study plans, progress reports, and other official DOE documents. The OITS was developed by the CNWRA.

Dr. Pomeroy asked whether open items can be resolved through topical reports. Ms. Abrams responded that if DOE specifically requests resolution on specific open items, the NRC staff will evaluate the items in the topical report for this purpose.

Dr. Pomeroy asked about the timeframe in which NRC staff must review topical reports. Mr. Joseph Holonich, NMSS, responded that the new topical report review plan lays out an eight step review process to be conducted over 26 weeks, including interchanges with DOE on issues. Dr. Hinze inquired whether the ACNW would see the topical report review plan before staff completes the plan. Mr. Holonich agreed to send a copy to the ACNW.

Dr. Moeller asked whether the OITS would include a rationale for why an item has been closed out. Ms. Abrams indicated that there is a requirement for this in the OITS, and in addition, staff will document how it has closed out an open item, and transmit this to DOE.

Dr. Moeller asked how the NRC staff sets priorities for its review of study plans. Ms. Abrams responded that staff sets priorities based on technical content and open items.

Dr. Hinze asked whether the staff, in the objectives of the revised Study Plan Review Plan, would consider technology as part of its assessment in determining whether the stated objectives of the

study plan can be met, using the methods described. After much discussion, the staff indicated that DOE decides what method it will use and the staff does not require state-of-the-art methods, just methods that will fulfill the objectives of the study plan.

Dr. Pomeroy asked whether the OITS would be available to the public, and to ACNW. Mr. Holonich indicated that he would have to get back to the Committee on this.

Highlights from Ms. Susan Jones' presentation include:

Study plans are planning documents, requirements for which are discussed in the Quality Assurance Requirements Description (QARD).

In addition to study plans, additional details of various studies are provided in technical procedures and test planning packages. Test planning packages describe controls that need to be placed on the planned tests to preclude possible test interferences.

Study plans only cover data collection, analyses and modeling that evolve from the data. The plans do not address many engineering activities for the repository or performance assessment.

Each study plan describes how data come from other study plans and how the data collected will be distributed to other study plans. DOE's review process requires each major technical participant from the U.S. Geologic Survey, DOE laboratories, and the M&O to see every study plan and review it.

NRC staff has commented on 21 study plans; DOE has responded to 18 of the reviewed study plans. The State of Nevada has commented on 18 study plans; DOE has responded to all of these. DOE tracks open items using a system called TRACER. Each open item is assigned to someone for response. Responses go back through DOE headquarters, where commitments are tracked.

DOE's highest priority study plans are surface disturbing study plans, which include surface based tests and ESF. Second priority is data collection and analysis work, then modeling. Dr. Pomeroy asked whether ongoing work, such as seismological data collection, would be given a higher priority than surface based testing, in that it must continue without interruption. Ms. Jones verified that was correct.

Study plan revisions are triggered by editorial comments, NRC and the State of Nevada's comments, programmatic changes, technological innovations, data results, and feedback from performance assessment or design. Dr. Pomeroy asked how DOE deals with the time lag involved in getting approval to implement a change in the field. Ms. Jones responded that it depends on the type of change,

depending on the change control procedures. If the change does not violate any of the controls already established for the study, the PI can proceed with the change without approval.

Of the 104 study plans, 64 have been submitted to DOE by project participants, 42 of these have been accepted by the NRC, 10 are being reviewed by NRC, and 12 are in DOE's review process. Forty have not yet been submitted to DOE; 14 of these involve data collection, and 26 involve modeling. DOE has requested that these final 40 plans be submitted by next year.

This briefing was for information only. No Committee action was taken as a result of this briefing.

VI. <u>DOE_YUCCA MOUNTAIN SITE CHARACTERIZATION PROGRESS REPORTS</u> (Open)

[Note: Ms. Lynn Deering was the Designated Federal Official for this portion of the meeting.]

Ms. Abrams began her presentation by citing the regulatory basis for DOE to prepare semiannual progress reports: 10 CFR 60.18(G), and the Nuclear Waste Policy Act (NWPA), Section 113(B)(3). She noted that the NRC staff reviews the progress reports to: 1) fulfill responsibilities under NWPA and 10 CFR Part 60, and 2) continue efforts toward the early identification and resolution of potential licensing issues. The objectives of the staff's review are to: 1) evaluate progress, results, and changes in the site characterization program, 2) identify any new concerns, 3) evaluate material related to potential resolution of existing concerns, and 4) provide a general review of technical and programmatic information. Ms. Abrams noted that, based on the previous days presentation on the SRA, the staff would be revising the Study Plan Review Plan and the Review Plan for DOE Progress Reports to indicate that the staff will consider Key Technical Uncertainties (KTUs) identified in the SRA as part of the review.

Ms. Abrams explained that the review process is identified through the review plan for NRC staff review of DOE progress reports, issued in August 1990. Progress reports are also reviewed by representatives of all technical disciplines, quality assurance, and performance assessment. Ms. Abrams noted that review plans can be revised at any time.

She indicated that seven progress reports have been submitted to NRC. The first report was received in February 1990, and the most recent report in December 1992. The NRC staff only reviewed reports Number 1, 5, 6, and 7. Dr. Hinze asked what priority is given to progress reports. Ms. Abrams responded that progress

reports and study plans are given high priority, but the staff does not drop everything when a new one comes in the door. Dr. Moeller asked how DOE got so far behind in its submittal of progress reports. Ms. Susan Jones, DOE Yucca Mountain Project Office (YMPO), responded that from report number 4 and above, the concurrence cycle held up the reports, as they go from the project office all the way up to the DOE secretariat level. DOE is trying to streamline the concurrence process.

Ms. Abrams summarized the findings of the NRC staff's review for progress report numbers 1, 5, 6, and 7. She noted that for reports number 1 and 5, the staff made recommendations and observations only, and had no open items. For report number 1, the staff was concerned that it appeared incomplete relative to the requirements for progress reports in 10 CFR Part 60. In addition, the report lacked adequate discussion of progress on the Site Characterization Analysis (SCA) open items, and detail.

For report number 5, the staff's main concerns addressed the need for better integration of the studies, more detailed information, such as complete references, status of the studies, and changes to Another concern related to conflicting statements on studies. whether DOE was conducting iterative performance assessment. She noted that DOE responded to the NRC's concerns on this report in DOE noted in its response that it had changed the February 1993. format of progress reports, as reflected in report number 7, and had provided additional information in tables and discussions in progress report number 7. DOE also noted that the formation of a geophysical technical exchange scheduled for June 1993, and clarified that they are integrating information into their iterative performance assessments.

Ms. Abrams stated that the NRC staff transmitted its comments on report numbers 6 and 7 in a memorandum to DOE, dated May 5, 1993. General concerns included the need to address the status of certain site characterization activities, such as the ESF design activities, and waste package design activities, and concern for the timeliness of reports, noting however, improvement in report number Incomplete references were also noted as a general concern. 7. The staff review of reports number 6 and 7 resulted in seven new open items, in the form of three comments, and four questions, which will be tracked in the Open Item Tracking System (OITS). The three comments are as follows: 1) no updated information on advanced conceptual waste package design, 2) ESF design changes are not reflected in progress reports, although major changes to the ESF design have occurred since the SCP, and DOE has not shown how the revised ESF will interface with the repository conceptual design, and 3) no reference to the updated Q-list for items applicable to revised ESF. Ms. Abrams indicated that for question 2, the staff is reviewing design packages for the ESF, and views

changes to the ESF in an incremental way, but has not seen the overall package.

The four questions address: 1) what is the potential effect of air movement from the ESF on the collection of geochemical data, 2) how is DOE factoring the site characterization into the Total Systems Performance Assessment (TSPA), 3) what is the potential for drift design methodology to result in quality design, and 4) what specific studies are being proposed to address the NRC open items?

Ms. Abrams stated that DOE is making progress on content and timeliness of progress reports, guidance is in place to review progress reports, and the NRC staff will conduct expedited reviews, if possible, at DOE's request.

Ms. Susan Jones, YMPO, gave the next portion of the presentation on the progress reports. Highlights from her talk that were not covered already by Ms. Abrams include:

- A progress report 1) cites technical reports and research products containing more detailed information, 2) highlights work started, work in progress, and work completed during the reporting period, 3) discusses changes to site characterization resulting from data collection, repository and waste package design, and performance analyses, and 4) covers a specific six-month period but contains an epilogue. A progress report is not: 1) a stand alone it must be used together with referenced document, papers, reports, etc., and 2) a mechanism for controlling changes to the program. DOE has formal change control procedures, while significant changes during the reporting period are simply described in the progress reports. She noted that the conceptual design of the ESF has not been officially changed since the SCP, and thus has not been discussed in progress reports to date.
- The schedule for completing a progress report is roughly four months from the time input is received from the Principal Investigator to the time the report is printed and distributed.
- NRC's comments and questions on progress reports are handled according to a formal YMPO procedure. All comments are compiled by the M&O and are tracked in DOE using the TRACER system, similar to study plan open items. Observations and recommendations are addressed through response letters from DOE to NRC and modifications to progress reports to accommodate NRC's input.

> • The format and content of progress reports has evolved since report number 1 to expand on the detail and coverage, provide references not readily available, and provide more information on status and plans for resolution of NRC SCA concerns. In addition, DOE has improved the process for generating, reviewing, and publishing progress reports, with a new goal of four months from the end of a reporting period to the publication of a report.

This briefing was for information only. No Committee action was taken as a result of this briefing.

VII. <u>VIDEOCONFERENCING SUBSYSTEM DEVELOPMENT</u> (Open)

Mr. Mark Stella, Advisory Committee Senior Fellow, briefed the Committee on videoconferencing (VTC) subsystem development for the Committee's conference room at the Two White Flint North Building. Mr. Stella also discussed the IRM pilot program to implement VTC for selected NRC offices. He recommended that the ACNW office develop a point-to-point VTC for HLW program interactions with DOE and DOE contractor facilities. Inclusion of existing network communication systems, such as INTERNET, was also suggested for consideration. The Committee endorsed these recommendations.

Dr. John Larkins, ACNW Executive Director, requested that Mr. Stella prepare a plan for senior management review that includes what VTC protocols are being used by DOE (and DOE contractors), what equipment should be installed and the estimated cost.

VIII. <u>EXECUTIVE SESSION</u> (Open/Closed)

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

The Committee prepared the following items:

A. <u>Reports</u>

<u>Review of April 21, 1993, Draft High-Level Radioactive</u> <u>Waste Research Program Plan</u> (Report to James M. Taylor, Executive Director for Operations, from Dade W. Moeller, Chairman, ACNW, dated May 25, 1993)

<u>Revision 1 of the Final Standard Review Plan for the</u> <u>Review of Remedial Action of Inactive Mill Tailings Sites</u> <u>Under Title I of the Uranium Mill Tailings Radiation</u> <u>Control Act</u> (Report to Chairman Selin from Dade W. Moeller, Chairman, ACNW, dated May 25, 1993)

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B. <u>Memorandum</u>

Memorandum for Robert M. Bernero, Director, NMSS, from Dade W. Moeller, Chairman, ACNW, dated May 26, 1993, complimenting the NRC staff on its presentations during this meeting.

C. <u>4th International High-Level Radioactive Waste Management</u> <u>Conference and Exposition</u>

Several members and staff attended the 4th International High-Level Radioactive Waste Management Conference and Exposition held in Las Vegas, Nevada, on April 26-30, 1993. Rather than present oral reports during this meeting, the Committee agreed to request that each attendee provide a written report on the meeting highlights for distribution to members and staff.

D. Four-Month Program Plan

The Committee continued its discussion on the merits of preparing and issuing a Four-Month Plan for communicating priorities to the Commission. The Committee requested that Dr. John Larkins solicit individual comments on this issue from each Commissioner and report back to the Committee. The Committee agreed to address this matter in detail during the proposed meeting in August.

E. <u>Health Physics Society Meeting</u>

Dr. Moeller noted that he had been invited to present a paper on ACNW activities related to high-level and low-level radioactive waste during the 38th Annual Meeting of the Health Physics Society, July 11-15, 1993, in Atlanta, Georgia. The Committee approved his travel and the subject of his presentation.

F. <u>Review of EDO Response to Recent ACNW Reports</u>

The Committee discussed how to reconcile Committee comments and recommendations with the EDO responses. The Committee requested that the ACNW staff compare the recommendations from recent reports with the EDO responses to determine whether the issues have been closed. (Dr. Hinze requested that some of his unanswered questions raised during the Yucca Mountain site visit should be added to the list for discussion.) The results of this comparison are to be provided to the members for comment during the next meeting.

G. <u>Executive Session on Organizational and Other Matters</u> (Closed)

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G. <u>Executive Session on Organizational and Other Matters</u> (Closed)

The Committee reviewed the qualifications of individual consultants relative to future needs of the Committee. The Committee also discussed internal organizational and personnel matters with the ACNW Executive Director.

H. <u>ACNW Future Activities</u>

- The Committee and staff continued their plans for the site visit on June 23-24, 1993, to the Whiteshell Nuclear Research Laboratories and the Underground Research Laboratory, located in Pinawa, Manitoba, Canada.
- The Committee agreed to hold an administrative meeting in August to review the future role and goals of the Committee. The session will be in lieu of the scheduled Committee meeting on August 25-26, 1993. A proposed agenda and list of questions will be prepared and distributed to the ACNW members for comment. A site close to the One White Flint North Building will be selected for the meeting. The members expressed interest in meeting with the Commissioners during the session.
- The Committee agreed to have a technical exchange meeting with the Yucca Mountain Project Office in Las Vegas, Nevada, on October 27-28, 1993. This meeting, along with a site visit to Yucca Mountain, will be in lieu of a full Committee meeting in October.

Dr. Hinze recommended that, in conjunction with this trip, a working group meeting be held in Las Vegas on the characterization of the unsaturated zone flow and transport properties together with the other activities in Las Vegas.

- Dr. Pomeroy noted that he has a conflict on September 22-23, 1993. The Committee agreed to reschedule the Committee meeting for September 29-30, 1993.
- The Committee reconfirmed its request to invite members of the NRC staff to brief the Committee on its review of the DOE topical report entitled "Erosion Rates at the Yucca Mountain Geologic Setting: Methodology and Results." The briefing will focus on cation ratio methods for dating desert varnish on relict hillside boulders.

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- The Committee agreed to postpone a planned briefing on performance assessment computer codes for site cleanups, such as DITTY and GENII, until the NRC staff's plan for code use is further developed.
- The Committee agreed to postpone a planned briefing on the status of the Licensing Support System until DOE and NRC plans are further developed.
- The Committee requested a briefing from representatives of the NRC and U.S. Geological Survey on thermal loading uncertainties and rock-water interactions. Dr. Pomeroy and Ms. Deering offered to attend a Nuclear Waste Technical Review Board (NWTRB) meeting on July 13-14, 1993, that will address this issue.
- Dr. Moeller reminded the Committee of his interest in scheduling a working group meeting that will examine lessons learned from both HLW and LLW facility siting and operational experiences. The working group will focus on technical and regulatory deficiencies. Planning for this meeting will be deferred until the Committee has identified areas of high priority during the August administrative session.
- The Committee discussed a proposed agenda for the Engineered Barrier System (EBS) session to be held during the July full Committee meeting. A representative of DOE observed that DOE will hold a two day meeting in September on this subject. Copies of the meeting agenda will be forwarded to the ACNW members and staff.

I. Future Meeting Agenda

Appendix IV summarizes the proposed items endorsed by the Committee for the 54th ACNW Meeting, July 23-24, 1993, and future Working Group meetings.

The meeting was adjourned at 4:06 p.m., Thursday, May 20, 1993.

APPENDICES MINUTES OF THE 53RD ACNW MEETING MAY 19-20, 1993

I. Federal Register Notice

- II. Meeting Schedule and Outline
- III. Attendees

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- IV. Future Agenda and Subcommittee Activities
- V. List of Documents Provided to the Committee

Office of Polar Programs, National science Foundation, Washington, DC 20550.

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FOR FURTHER INFORMATION CONTACT: Thomas F. Forhan at the above address or (202) 357-7817.

SUPPLEMENTARY INFORMATION: The National Science Foundation, as directed by the Antarctic Conservation Act of 1978 (Public Law 95-541), has developed regulations that implement the "Agreed Measures for the Conservation of Antarctic Fauna and Flora" for all United States citizens. The Agreed Measures, developed by the Antarctic Treaty Consultative Parties, recommended establishment of a permit system for various activities in Antarctica and designation of certain animals and certain geographic areas as requiring special protection. The regulations establish such a permit system to designate Specially Protected Areas and Sites of Special Scientific Interest. The application received is as follows:

1. Applicant

Dr. Bill J. Baker, Department of Chemistry, Florida Institute of Technology, Melbourne, FL 32901

Activity for Which Permit Requested

Introduction of Non-Indigenous Species into Antarctica. The applicant is requesting a permit to take four nonpathogenic microorganisms to McMurdo Station to perform antimicrobial assays on extracts from marine invertebrates. Microorganisms will be handled using sterile techniques and will be disposed of by sterilization at the conclusion of the study.

Location

McMurdo Station

Dates

10/01/93-02/28/94

Thomas F. Forban,

Permit Office, Office of Polar Programs. [FR Doc. 93–11625 Filed 5–14–93; 8:45 gm] BILING CODE 7555-01-M

NUCLEAR REGULATORY COMMISSION

Advisory Committee on Nuclear Waste; Meeting

The Advisory Committee on Nuclear Weste (ACNW) will hold its 53rd neeting on Wednesday and Thursday, May 19 and 20, 1993, in room P-110, 7920 Norfolk Avenue, Bethesda, MD. Notice of this meeting was published in

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the Federal Register on April 28, 1993 (58 FR 25849).

Wednesday, May 19, 1993

8:30 a.m.-8:45 a.m.: Opening Remarks by ACNW Chairman (Open)---The ACNW Chairman will make opening remarks regarding conduct of the meeting and comment briefly regarding items of current interest.

8:45 a.m.-10:45 a.m.: Update on the Systematic Regulatory Analysis (SRA) (Open)—Hear briefings by and hold discussions with representatives of the NRC staff and the Center for Nuclear Waste Regulatory Analyses (CNWRA) on the current status of the Systematic Regulatory Analysis, conducted by CNWRA, and products resulting from this initiative, including technical assistance efforts and the development of the License Application Review Plan.

11 a.m.-1 p.m.: NRC High-Level Radioactive Waste Research Program Plan (Open)—Review and comment on the revised Draft HLW Research Program Plan, NUREG-1406, and associated technical assistance. Representatives of the NRC staff will participate.

2 p.m.-5 p.m.: NRC High-Level Radioactive Waste Research Program Plan (Open)—Continue discussion of the revised draft HLW Research Program Plan, NUREG-1406.

5:15 p.m.-6:30 p.m.: Committee Activities (Open/Closed)—Discuss anticipated and proposed Committee activities, future meeting agenda, and organizations and personnel matters relating to ACNW members, staff and consultants.

A portion of this session may be closed to public attendance pursuant to 5 U.S.C. 552b(c)(2) and (6) to discuss organizational and personnel matters that relate solely to the personnel rules and practices of this advisory committee and matters the release of which would represent a clearly unwarranted invasion of personal privacy.

Thursday, May 20, 1993

8:30 a.m.-8:45 a.m.: Standard Review Plan for the Review of Remedial Action of Inactive Mill Tailings Sites (Open)— Review and comment on Revision 1 of the Standard Review Plan for use in reviewing the Remedial Action of Inactive Mills Tailings Site Under Title I of the Uranium Mill Tailings Radiation Control Act. Representatives of the NRC staff will participate.

10 a.m.-12 Noon: NRC Staff's Standard Review Plan for DOE Study Plans (Open)—Hear a briefing by and hold discussions with representatives of the NRC regarding a proposed NRC staff Standard Review Plan for use in reviewing the DOE Study Plans.

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1 p.m.-3 p.m.: NRC Staff's Responses to DOE Site Characterization Progress Reports (Open)—Hear briefings by and hold discussions with representatives of the NRC staff on NRC's responses and follow-up to the DOE Site Characterization Progress Reports for the proposed Yucca Mountain respository. Also, discuss the revised procedures for evaluating the DOE study plans. Representatives of DOE will participate, as appropriate.

3:15 p.m.-4:15 p.m.: Preparation of ACNW Reports (Open)—The Committee will discuss proposed ACNW reports regarding items considered during this meeting.

4:15 p.m.-5:15 p.m.: Miscellaneous (Open)—Discuss miscellaneous matters related to the conduct of Committee activities and complete discussion of topics 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. The office of the ACRS is providing staff support for the ACNW. Persons desiring to make oral statements should notify the Excecutive Director of the office of the ACRS as far in advance as practical so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements. Use of still, motion picture, and television cameras during this meeting may be limited to selected portions of the meeting as determined by the ACNW Chairman. Information regarding the time to be set aside for this purpose may be obtained by a prepaid telephone call to the Executive Director of the office of the ACRS, Dr. John T. Larkins (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 ACNW Executive Director or call the recording (301/492-4600) for the current schedule if such rescheduling would result in major inconvenience.

I have determined in accordance with subsection 10(d) Public Law 92-463 that it is necessary to close portions of this meeting noted above to discuss organizational and personnel matters

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Federal Register & Vol. 58 No. 93 A Monday: May 17, 1993 A Notices

that relate solely to the personnel rules and practices of this advisory committee and the release of which would represent a clearly unwarranted invasion of personal privacy per 5 U.S.C. 552b(c) (2) and (6).

Dated: May 11, 1993.

John C. Hoyle,

Advisory Committee Management Officer. [FR Doc. 93–11584 Filed 5–14–93; 8:45 am] BILLING CODE 7500-01-00

[Docket No. 50-220; License No. DPR-63]

Niagara Mohawk Power Corp., Nine Mile Point Nuclear Station Unit No. 1; Issuance of Director's Decision

Notice is hereby given that the Director, Office of Nuclear Reactor Regulation, has issued a Director's Decision concerning a Petition dated October 27, 1992, filed by Ben L. **Ridings (Petitioner). The Petitioner** requested that the Nuclear Regulatory Commission (NRC) issue an immediately effective order directing Niagara Mohawk Power Corporation (NMPC) to cease power operation of Nine Mile Point Nuclear Station Unit No. 1 (NMP-1) and place the reactor in a cold-shutdown condition until such time as subsequent tests and inspections are shown to provide the requisite reasonable assurance of no undue risk to public health and safety. The Petitioner also requested that the NRC hold a public hearing before the plant is allowed to operate again.

The Petition sought relief on the besis of assertions that (1) NMPC is operating NMP-1 in violation of the requirements for availability of an emergency core cooling system (ECCS) high-pressure coolant injection (HPCI) system, including the failure to provide the mandatory emergency backup power to the 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.

On December 4, 1992, the Director of the Office of Nuclear Reactor Regulation acknowledged receipt of the Petition and notified the Petitioner that this matter would be considered pursuant to 10 CFR 2.206. The Petitioner's request for immediate action was denied in the Director's December 4, 1992, letter acknowledging receipt of the Petition. The Director's December 4, 1992, letter included a request for some specific information that was not fully legible or not provided in the Petition. The information in a response received by we the NRC Office of the Executive Director for Operations on January 5, 1993, or in a January 11, 1993, telephone conversation between the Petitioner and the NRC Project Manager for NMP-1. The Petitioner's response also asserted that the NMP-1 facility will not meet the leakage limits of 10 CFR part 50, Appendix J, when the leakage rates of **Category A containment isolation valves** are added to the leakage total for the NMP-1 containment building. in -addition, the Petitioner contended that NMPC's asserted failures to comply with the requirements of 10 CFR part 50 precluded NMPC from operating NMP-1 with limited liability.

The NRC staff issued License Amendment No. 140 to the NMP-1 Facility Operating License (DPR-63) on April 12, 1993. This license amendment corrects the NMP-1 Technical Specifications tables that list the containment isolation valves, their initiating signals, and their stroke times. To the extent the Petitioner sought such corrections, this relief has been granted. NMPC has committed to update, by June 30, 1993, the NMP-1 Updated Final Safety Analysis Report (UFSAR) to: properly list the containment isolation valves. The NRC staff will verify this commitment as part of its routine reviews of UFSAR updates. With regard to the other requests made by the Petitioner, an immediate shutdown of NMP-1 and the institution of a public hearing before authorizing resumption of plant operation, the Director has determined that the Petitioner's request should be denied. The reasons for the denial are given in the "Director's Decision Pursuant to 10 CFR 2.206" (DD-93-10), which is available for inspection and copying in the Commission's Public Document Room, The Gelman Building, 2120 L Street NW., Washington, DC, and at the local public document room for the Nine Mile Point Nuclear Station at the Reference and Documents Department, Penfield Library, State University of New York, Oswego, New York 13126.

A copy of the decision will be filed with the Secretary of the Commission for the Commission's review in accordance with 10 CFR 2.206(c). As stated in 10 CFR 2.206(c), the decision will become the final action of the Commission 25 days after the date of issuance unless the Commission on its own motion institutes review of the decision within that time.

Dated at Rockville, Maryland, this 9th day of May 1993.

Petitioner submitted the requested For the Nuclear Regulatory Commission information in a response received by Thomas E. Murley, the NRC Office of the Executive Director for Operations on January 5, 1993, or in a January 11, 1993, telephone conversation between the Petitioner and Exust a cope response to the State St

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OFFICE OF PERSONNEL MANAGEMENT

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SES Performance Review Board

AGENCY: Office of Personnel Management.

ACTION: Notice.

SUMMARY: Notice is hereby given of the appointment of members of the OPM Performance Review Board.

FOR FURTHER INFORMATION CONTACT: Violet R. Parker, Executive Personnel Division, Office of Personnel, Administration Group, Office of Personnel Management, 1900 E Street NW., Washington, DC 20415, (202) 606– 2420.

SUPPLEMENTARY INFORMATION: Section 4314(c) (1) through (5) of title 5, U.S.C., requires each agency to establish, in accordance with regulations prescribed by the Office of Personnel Management, one or more SES performance review boards. The board shall review and evaluate the initial appraisal of a senior executive's performance by the supervisor, along with any recommendations to the appointing authority relative to the performance of the senior executive.

Office of Personnel Management.

James B. King,

Director.

The following have been selected as regular members of the Performance Review Board of the Office of Personnel Management:

- Patricia W. Lattimore [Acting Chair], Acting Deputy Director.
- Michael C. Cushing [Vice Chair], Chief of Staff.

Curtis J. Smith, Associate Director, Retirement and Insurance Group

- Patricia W. Lattimore, Associate Director, Administration Group/Acting Deputy, Director.
- Loonard R. Klein, Associate Director, Career Entry Group.
- Steven R. Cohen, Regional Director, Chicago Region.
- Jean M. Barber, Acting Associate Director, Personnel Systems and Oversight Group.
- John J. Lafferty, Acting Associate Director for Investigations Group.
- Dona Wolf, Director, Human Resources Development Group.

[FR Doc. 93-11478 Filed 5-14-93; 8:45 am] BILLING CODE 6325-01-M Appendix II



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

Revised: May 17, 1993

SCHEDULE AND OUTLINE FOR DISCUSSION 53RD ACNW MEETING MAY 19-20, 1993

Wednesday, May 19, 1993, Rm. P-110, 7920 Norfolk Ave., Bethesda, MD

1)	8:30-8:45 a.m. <u>Opening Remarks by ACNW Chairman</u> (Open)
	1.1) Opening statement (DWM/RKM)
	1.2) Items of current interest (DWM/RKM)
	12:05 p.m.
2)	8:45-10:45-a.m. Update on the Systematic Regulatory Analysis (SRA)
	(Open) (WJH/LGD/GNG)
	2.1) Presentations by NMSS & CNWRA on technical
	assistance products from SRA including the
	license application review plan
	2.2) Current/future initiatives
	(2.3) General discussion
	10:30-10:45 + + B B B & K /15 min) + + +
31	12.05 p
-,	5:00 p.m. NRC High-Level Radioactive Waste Research Program
	Plan (Open) (WJH/LGD)
	3.1) Overview - M. Silberberg
	3.2) Strategy for HLW research
	3.3) Research prioritization
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	1: 00 - 2: 00 p.m. * * * LUNCH * * *
	05 4:15
	2:00 - 5:00 p.m. 3.4) Integration and coordination
	3.5) Examples of Research Program Implementation
	[3.6] ACNW discussion of possible committee report
	* * *
	Δ:35
4)	5:15-6:30 p.m. Committee Activities/Future Agenda (Open/Closed)
- /	(DWM/RKM)
	Discuss anticipated and proposed Committee
	activities; future meeting agenda, administrative and
	organizational matters, as appropriate
	4.1) Finalize plans for Canadian Whiteshell
	Laboratories visit
	4.2) Review activities through September
	4.3) Review working group schedule
	4.4) Other future topics/lessons learned from 4th
	International HLWM Conference and Exposition
	4.5) Approve next ACNW 4-Month Program Plan
	4.0) Approve speech for Annual HPS Meeting
	r = Transcribed portion of meeting

53rd ACNW Meeting Agenda

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4.7) Review EDO response to recent ACNW letters 4.8) Videoconferencing at TWFN - M. Stella 4.9) Discuss consultant use (Closed) 7:05 6:30 p.m. * * * RECESS *** <u>Thursday, May 20, 1993, Rm. P-110, 7920 Norfolk Ave., Bethesda, MD</u> 10:30 5) 8:30 - 9:45 a.m. Review and Comment on the Standard Review Plan (SRP) for the Review of Remedial Action of Inactive Mill Tailings Sites Under Title I of the Uranium Mill Tailings Radiation Control Act (Open) (MJS/GNG) 5.1) Staff presentation 5.2) General discussion 5.3) Discussion of possible ACNW report BREAK (15 min.) * * * 45 15 6) 10:00-12:00 Neon NRC Staff's Review Plan for DOE Study Plans (Open) (WJH/LGD/HJL) 6.1) NRC staff presentation 6.2) DOE-YMPO staff presentation L(6.3) General discussion 12:00 Noon-15 1:00 p.m. * * * LUNCH * * * 7 2:10 7) 1:00-3:00 p.m. NRC Staff's Responses to DOE Site Characterization Progress Reports (Open) (WJH/LGD) 7.1) NRC staff's presentation 7.2) DOE YMPO staff presentation 7.3) General discussion 2:10-2:30 * * * BREAK (15 min.) * * * 2:30 4:06 8) 3:15-5:15 p.m. Preparation of ACNW Reports (Open) (DWM/RKM) Discuss proposed ACNW reports regarding items considered during this meeting and previous meetings, including: 8.1) HLW Research Program Plan 8.2) UMTRCA Title I SRP 8.3) 4-Month Program Plan 4:06 5:15 p.m. * * * ADJOURN * * *

APPENDIX III: MEETING ATTENDEES

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53RD ACNW MEETING MAY 19-20, 1993

ACNW MEMBERS			<u>1st Day</u>	<u>2nd Day</u>
Dr. Will	iam J. Hinze		X	<u> </u>
Dr. Dade	W. Moeller		X	<u> </u>
Dr. Paul	W. Pomeroy		X	<u> </u>
Dr. Mart	in J. Steindler		<u> </u>	<u> </u>
<u>CONSULTANT</u>			<u>1st Day</u>	<u>2nd Day</u>
Dr. Kenne	eth Foland		<u> </u>	<u> </u>
ACNW STAFF			<u>1st Day</u>	2nd Day
Ms. Lynn Mr. Giorg Dr. John Mr. Howar Mr. Richa Mr. H. S	F. Deering gio N. Gnugnoli T. Larkins rd J. Larson ard K. Major tanley Schofer		X X X X X X X	<u> </u>
NRC STAFF Charlotte Margaret Myron Fl: Dan Gille Joe Holon Robert Jo Susan Jon Janet Kon Janet Lan Michael 1 Michael 1 John Line Donald Le Tim McCan Michael 1	e Abrams Federline iegel en hich ohnson hes tra hbert Layton Lee ehan osley rtin fcNeil	NMSS NMSS NMSS NMSS NMSS NMSS OCM OPP NMSS NMSS NMSS NMSS RES RES		

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Bill Morris

William Ott

Jacob Philip

Mel Silberberg

John Surmeier

Sandra Wastler

John Randall

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Rex	Wescott	NMSS
J. 1	Youngblood	NMSS

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

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Joseph Bannon ·	ERM
Mary Birch	CRWMS-M&O
Chuck Casto	Seactor Reid
Bud Cigar	DA Central
Jennifer Conway	Weston
Linda Desell	DOE
April Gil	DOE
Richard Goffi	Weston
Susan Jones	DOE
Pat Laplanta	CNWRA
L. A. Lindsay	CRWMS
Walter Matyskiela	M&O
Ellen Ott	DOE
Bonnie Packer	TRW
Wesley Patrick	CNWRA
Paul Reichert	Weston
Gene Roseboam	USGS
John Russell	CNWRA
Budhi Sagar	CNWRA
Sharon Skuchko	DOE
Steve Smith	Governmental Dynamics, Inc.
E. Tiesenhausen	CCCP
Ray Wallace	USGS
Pat Ware	BNA
Jim York	Weston
L. Zerr	STS

APPENDIX IV: FUTURE AGENDA

June 23-24, 1993 - Several ACNW members and staff will visit the Canadian Research Laboratories (Whiteshell and Underground Research Laboratories), Pinawa, Manitoba Province, Canada.

54th ACNW Committee Meeting July 21-22, 1993 (Tentative Schedule)

<u>High-Level Radioactive Waste Management Quality Assurance</u> (Open) -The Committee will be briefed by representatives of the NRC staff on HLW Management Quality Assurance. DOE and State of Nevada representatives will be invited to participate.

<u>Decommissioning Plans</u> (Open) - The Committee will be briefed by representatives of the NRC staff on the status of the decommissioning plans for the Shoreham and Fort St. Vrain Nuclear Power Plants.

<u>Decision Support System</u> (Open) - The Committee will be briefed on the Decision Support System, an interagency cooperative effort being developed by Sandia National Laboratories to generate an environmental risk evaluation and database management system.

<u>Engineered Barrier Systems</u> (Open) - The Committee will be briefed on the status of the Engineered Barrier System (EBS), the role of site characterization in defining the EBS, and other related issues.

<u>Canadian Whiteshell Nuclear Laboratory Trip Report</u> (Open) -Several members and staff will report on their visit to the Canadian Research Laboratories (Whiteshell and Underground Research Laboratories), Pinawa, Manitoba Province, Canada.

<u>Committee Activities</u> (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.

Working Group Meetings

<u>Characterization of the Unsaturated Zone Flow and Transport</u> <u>Properties</u>, (October 26, 1993), Las Vegas, Nevada, (Lynn Deering) - The Working Group will examine the current understanding of processes controlling matrix and fracture-flow in the unsaturated zone at Yucca Mountain, existing approaches to model or bound fracture flow in the unsaturated zone, insights gained from performance assessment activities regarding the sensitivity of infiltration and other parameters and assumptions, on-going site characterization studies, the relationship between performance

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assessment and site characterization activities, and significant data gaps.

<u>Use of Fractals for Fluid Flow at Yucca Mountain</u>, (Date to be determined), Bethesda, MD (Lynn Deering) - The Working Group will examine the use of fractals in the development of conceptual and numerical models of fluid flow in unsaturated, fractured rock. Studies show that the roughness characteristics of fracture surfaces can be simulated by the use of fractals. DOE is considering the use of this approach in its study plan on fluid flow in unsaturated fractured rock systems.

Lessons Learned in HLW and LLW Disposal Programs, (Date to be determined), 7920 Norfolk Avenue, Bethesda, MD (Howard Larson) -The Working Group will examine lessons learned from both HLW and LLW facility siting and operational experiences. The Working Group will focus on technical and regulatory deficiencies. APPENDIX V LIST OF DOCUMENTS PROVIDED TO THE COMMITTEE

MEETING HANDOUTS

DOCUMENTS

AGENDA ITEM_NO.

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1 <u>Chairman's Report</u>

- 1. Memorandum to Richard Major from Dade W. Moeller, dated April 25, 1993, regarding Possible Subjects for ACNW Discussion
- 2. Letter to Lake Barrett, OCRWM, from Thomas Isaacs and Maxwell Blanchard, DOE, dated March 31, 1993, regarding Final Report of the Task Force on an Alternative Program Strategy, with enclosure
- 3. Limitation of Exposure to Ionizing Radiation, NCRP Report No. 116, Issued March 31, 1993 [partial contents]
- 4. The Cost and Consequences of Site Proliferation, Low-Level Radioactive Waste Forum, August 1988
- 2 <u>Update on the Systematic Regulatory Analysis (SRA)</u>
 - 5. Viewgraphs on Development of the High-Level Waste License Application Review Plan and Relationship to the Research Program, presented by Robert L. Johnson, dated May 19, 1993
- 3 NRC High-Level Radioactive Waste Research Program Plan
 - 6. Viewgraphs on High-Level Radioactive Waste Research Program: Program Plan, Coordination and Integration Research Strategy, Program Implementation, presented by Melvin Silberberg, dated May 19, 1993
- 4 <u>Committee Activities/Future Agenda</u>
 - 7. Viewgraphs on Videoconferencing for ACNW and ACRS, presented by Mark Stella, dated May 19, 1993
- 5 <u>Review and Comment on the Standard Review Plan (SRP) for the</u> <u>Review of Remedial Action of Inactive Mill Tailings Sites</u> <u>Under Title I of the Uranium Mill Tailings Radiation Control</u> <u>Act</u>
 - 8. Viewgraphs on Standard Review Plan (SRP) for Review of Remedial Action of Inactive Mill Tailings Sites under Title I of the Uranium Mill Tailings Radiation Control Act; (Rev 1), undated
- 6 NRC Staff's Standard Review Plan for DOE Study Plans
 - 9. Viewgraphs on NRC Staff Review of DOE Site Characterization Study Plans presented by Charlotte Abrams, dated May 20, 1993
 - 10. Viewgraphs on Yucca Mountain Site Characterization Study

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Plans presented by Susan Jones, dated May 20, 1993

- 7 <u>NRC Staff's Responses to DOE Site Characterization Progress</u> <u>Reports</u>
 - 11. Viewgraphs on Yucca Mountain Site Characterization Progress Reports presented by Susan Jones, dated May 20, 1993
 - 12. Viewgraphs on NRC Staff Review of DOE Site Characterization Progress Reports presented by Charlotte Abrams, dated May 20, 1993
 - 13. Letter to Joseph Holonich from Dwight Shelor, OCRWM, DOE, dated May 3, 1993, regarding Monthly Study Plan Status Report, with enclosure [Handout #1]
- 8 <u>Preparation of ACNW Reports</u>
 - 14. Review of EDO Response to recent ACNW Letters [Handout #2]

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MEETING NOTEBOOK CONTENTS

- 1 <u>Chairman's Report</u> Introductory Statement by ACNW Chairman, May 19-20, 1993 Items of Current Interest
- 2 Update on the Systematic Regulatory Analysis (SRA)
 - 1. Status Report
 - Memorandum for ACNW Members from Charlotte Abrams, dated October 30, 1991, regarding Certified Minutes of the ACNW Working Group Meeting and Visit to the CNWRA June 26-28, 1991
 - 3. Memorandum for ACNW Members from Lynn Deering, dated April 14, 1993, regarding overall review strategy for the HLW Program, with enclosure
 - 4. Memorandum for Dade Moeller from Lynn Deering, dated January 20, 1993 regarding Follow-up to Request for Summary on SRA. Providing the following:

a. Article for April 1993 International HLW Conference: NRC Staff Development of the License Application Review Plan (LARP) For a HLW Repository b. Article for WM 93: Summary of the Paper -Application of Systems Engineering to the Licensing of a HLW Repository

c. October 29, 1992 Presentation Slides from the NRC/DOE Technical Exchange on Systems Engineering: Overview of NRC's Regulatory Documents and Relationship to the SRA

3 NRC High-Level Radioactive Waste Research Program Plan

- 5. Status Report
- 6. May 1, 1992 letter from D. Moeller to J. Taylor, "Review of NRC High-Level Radioactive Waste Research Program Plan (draft NUREG-1406)"
- 7. July 20, 1992 Letter from J. Taylor to D. Moeller, "Response to ACNW Letter Dated May 1, 1992, on Review of NRC High-Level Radioactive Waste Research Program Plan (draft NUREG-1406)"
- 8. April 11, 1993 Memorandum from D. Moeller to R. Major, transmitting paper entitled, "Research Impact Assessment: Where are we now?"
- 9. March 6, 1993 comments provided by D. Moeller on draft NUREG-1406
- 10. March 8, 1993 memorandum from M. Steindler to L. Deering transmitting comments on draft version of NUREG-1406
- 11. March 8, 1993 note from W. Hinze to L. Deering transmitting comments on draft NUREG-1406
- 12. April 3, 1993 note from D. Moeller transmitting comments

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on the March 26, 1993 draft NUREG-1406

4 <u>Committee Activities/Future Agenda</u>

- 13. Visit to Canadian Research Laboratories
- 14. Topics through November 1993
- 15. Other Topics to be Scheduled
- 16. Working Group Meetings
- 17. Blaha list of proposed ACNW agenda items
- Memorandum for ACNW Members from Howard Larson, dated May 3, 1992, re: Principle Observations of International High-Level Waste Conference
- 19. Next 4-Month Program Plan for the ACNW
- 20. Memorandum for John Larkins from Mark Stella, dated May 6, 1993, re: Revised Videoconference Strategy
- 21. Memorandum for Dade Moeller from James Taylor, dated April 30, 1993, re: Response to ACNW Views on Possible Impacts of the Energy Policy Act of 1992 on the Staff's High-Level Waste Repository Program
- 22. Memorandum for Dade Moeller from James Taylor, dated May 4, 1993, re: Recommendations and Findings on Source Term and Other Low-Level Waste Considerations
- 23. Speech given by Dade Moeller presented at the Annual Health Physics Society Meeting, July 11-15, 1993 in Atlanta Georgia [draft]
- 24. Discuss items of a personal nature [closed]
- 5 <u>Review and Comment on the Standard Review Plan (SRP) for the</u> <u>Review of Remedial Action of Inactive Mill Tailings Sites</u> <u>Under Title I of the Uranium Mill Tailings Radiation Control</u> <u>Act</u>
 - 25. Status Report
 - 26. April 15, 1993 Transmittal of present & revised SRPs for Remedial Actions at Inactive Uranium Milling Sites
- 6 NRC Staff's Standard Review Plan for DOE Study Plans
 - 27. Status Report
 - 28. April 12, 1993 Memorandum from L. Deering to ACNW Members transmitting "Review Plan for NRC Staff Review of DOE Study Plans Revision 2," March 12, 1993
 - 29. December 6, 1990 Memorandum from R. Browning to DHLWM staff, "Issuance of Review Plan for NRC Staff Review of DOE Study Plans"
 - 30. August 4, 1992 letter from D. Moeller to R. Bernero, "Progress in Site Characterization Activities"
 - 31. May 26, 1992 letter from J. Holonich to J. Roberts, "Status of Staff Reviews of Study Plans and Related U.S. DOE Site Characterization Reports"
 - 32. Monthly Study Plan Status for September 1992

- 7 <u>NRC Staff's Responses to DOE Site Characterization Progress</u> <u>Reports</u>
 - 33. Status Report
 - 34. May 26, 1992 letter from J. Holonich to J. Roberts, "Status of Staff Reviews of Study Plans and Related U.S. DOE Site Characterization Reports"
 - 35. May 5, 1993 letter from R. Bernero to L. Barrett, "U.S. NRC Staff Comments on Site Characterization Progress Reports 6 and 7"
 - 36. October 27, 1992 letter from R. Bernero to J. Bartlett, "NRC Staff Comments on DOE Progress Report On Site Characterization: Yucca Mountain, Nevada, Number 5, For Period April 1, 1991, Through September 30, 1991"
 - 37. August 10, 1990, Memorandum from R. Browning to DHLWM Staff, "Issuance of SCP Progress Report Review Plan"
 - 38. January 28, 1993 letter from J. Roberts to J. Holonich, responding to ACNW's letter from August 4, 1992