ACNW-0036

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31ST ACNW MEETING
MAY 22-23, 1991

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Issued: June 24, 1991

MINUTES OF THE 31ST MEETING OF THE ADVISORY COMMITTEE ON NUCLEAR WASTE
MAY 22-23, 1991
BETHESDA, MARYLAND

The 31st meeting of the Advisory Committee on Nuclear Waste was held Wednesday and Thursday, May 22-23, 1991, at 7920 Norfolk Avenue, Bethesda, Maryland.

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 announced that a transcript of some open part of the meeting was being made, and would be available in the Nuclear Regulatory Commission (NRC) Public Document Room at the Gelman Building, 2120 L Street, N.W., Washington, D.C.

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

I. CHAIRMAN'S REPORT (Open)

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

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

- The NRC held its 14th Annual Awards Ceremony on May 2, 1991. He singled out several NRC staff who received awards and congratulated them.

- The NRC staff issued a bulletin on performance assessment of near-surface low-level radioactive waste (LLW) disposal facilities. This was issued as part of the information disseminated through the National Low-Level Waste Management Program and is a condensation of guidance in NRC Guidance Documents, NUREG-1199 and 1200, as well as other sources. He stated that, in response to a request from Commissioner Rogers, the Committee will review the capabilities of the NRC staff to conduct performance assessments.

- The Electric Power Research Institute (EPRI) will hold its 13th Annual Low-Level Waste Management Seminar at Boulder, Colorado, June 20-21, 1991. The focus will be on research results from EPRI's LLW projects, current issues, ongoing radioactive waste management and waste processing projects and "innovators" programs underway at nuclear power plants.

- As of April 26, 1991, the NRC reasserted its authority over possession and use of byproduct, source and special nuclear material in Idaho. Governor Andrus cited severe budget constraints as contributing to the decision of the state to relinquish its Agreement State status.

- The U.S. Environmental Protection Agency (EPA) has delayed rulemaking to implement the National Emission Standards for Hazardous Air Pollutants (NESHAP) for NRC licensed facilities (not including nuclear power plants) until November 15, 1991. This includes waste facilities.

- Dr. Roger Whitfield, Director of the Environmental Restoration Office, U.S. Department of Energy (DOE), has been selected Engineer of the Year for 1990 by the Conference of Federal Environmental Engineers.

- A Subcommittee of the U.S. House of Representatives approved a bill requiring that hazardous and radioactive wastes from federal facilities meet the same regulations (e.g., Resources Conservation and Recovery Act (RCRA)) governing private sector waste. A full Energy Committee markup is expected by the end of May 1991.

II. WORKING DRAFT #3 OF THE 40 CFR PART 191, HIGH-LEVEL WASTE REPOSITORY STANDARDS (Open)

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

Mr. Floyd Galpin, EPA, was the lead presenter. He noted that the concept of release limits, vs. individual probabilistic dose limits, received much support at a recent EPA conference. He suggested that the Committee consider a presentation on related risk assessment studies from EPRI.

Dr. Moeller indicated that the Committee did not disagree with the release limit philosophy but rather it did not understand the transition from 1,000 deaths in 10,000 years to the specific curie release values. Now that additional information has been provided, he believed many of these questions had been cleared up.

Mr. Galpin noted that gaseous releases from the proposed repository need to be readdressed, specifically those for carbon-14. A revision reflecting such a change, however, was not included in working draft (WD) #3.

Mr. Galpin addressed the problem of clear communication between interested groups, particularly with respect to probabilities and complementary cumulative distribution functions (CCDF). Specifically mentioned was the difference between EPA's "reasonable expectation" for compliance analyses results and the NRC's "reasonable assurance." He perceives the meaning of EPA's words as "being somewhere better than the 50th percentile." Another reason for using the term "reasonable expectation" was that the EPA did not want the history of the NRC term to influence the determination of acceptance. Mr. Galpin suggested that the future schedule for revising WD #3 was dependent upon whether a negotiated rulemaking was decided to be held. That decision will probably not be made until late this summer.

Mr. Ray Clark, EPA, stated that the biggest change in WD #3 was the dropping of groundwater protection from Subpart B and creating a new Subpart C. He proceeded through the changes, comparing WD #3 with the original 1985 standards.

Among the changes noted and discussed:

1. Clarifying that all doses now are "effective dose equivalents."

2. Requiring that dose levels be met rather than reasonable assurance they will be met.

3. Providing an option (for comment) of either a 10 or a 25 mrem/year limit. Whichever one is chosen will apply to both DOE and NRC facilities.

4. Removal of the alternative standards section.

5. Requiring a 100,000 year qualitative projection evaluation for the purpose of comparative site evaluation.

6. Providing an option (for comment) of either 10 or 25 mrem/year for 1,000 and 10,000 years.

7. Providing a new Subpart C based on the Safe Drinking Water Act with 1,000 and 10,000 year options applying to Subparts A and B. (This broadens the applicability of these standards to management and storage as well as disposal).

8. Compliance is to be demonstrated before the emplacement of waste.

9. Temporary emplacement, under certain conditions, is possible for performance assessment purposes.

The Committee discussed these changes. It was noted that, while EPA does not have a specific plan for converting to sieverts in WD #3, there is an overall EPA evaluation currently underway as to the proper utilization of ICRP 60, UNSCEAR, and BEIR V recommendations. The EPA is asking for public comment on the options noted. The reason for the 1,000 and 10,000 year options in (7) above is an attempt to develop a public record for whichever one is selected. (This lack of record for the 1,000 year time-frame in the 1985 Standards was one reason for the remand by the Court).

Dr. Hinze, while agreeing with the concept of considering a site for more than 10,000 years, voiced his opinion that he did not perceive a real justification for the 100,000 year period selected for site comparison. Mr. Clark stated that the value was selected because 1) it was an order of magnitude greater than 10,000 years and 2) DOE had used the 100,000 year period in their siting guides. The problems with performing such an evaluation were discussed at length.

Dr. Moeller questioned the temporary emplacement guideline insofar as the applicability of the EPA Administrator's approval. He was told that the EPA Administrator's approval would not be necessary for an NRC licensed facility, such as Yucca Mountain.

The changes from the 1985 standards insofar as Appendices B and C were noted:

1. An option of 1 or 3 MCi was proposed as the transuranic (TRU) waste unit (in response to a comment that the TRU waste unit was not equivalent to the 1000 metric tons of heavy metal unit).

2. Iterative performance assessments were suggested to be performed before waste is to be put into the system, throughout the operations phase and as a final confirmation before closure.

3. Guidance is provided only for undisturbed performance - not disruptive events.

Considerable discussion occurred on Item 1 above, with Dr. Moeller questioning the impact of fuel reprocessing on the equivalency values. Mr. Galpin noted that, while reprocessing removes the fissionable uranium and plutonium, the contribution of these

isotopes to risk would be relatively minor since their inventory percentage is small.

Dr. Pomeroy questioned the availability of truly independent expert judgment and EPA's in-house performance assessment (PA) capability. It was explained that EPA used contractors for detailed PAs but did have an in-house program, which while fairly simple, was used to set the release limits. Mr. Clark pointed out that EPA had limited resources and did not expect to expand its PA capability other than for the carbon-14 gaseous release problem.

The "three-bucket" approach was discussed next. Mr. Clark stated that a separate enclosure addressing this topic was sent to all recipients of WD #3. The major change from what the Committee had seen proposed earlier by the NRC was that the lower limit on bucket two (the unlikely scenario) was set at one in 10,000 versus the previous one in 1,000. EPA, however, elected to go with the one in 10,000 value, as it was more conservative.

The possibility for initiating a negotiated rulemaking process, which had been suggested by the Nuclear Waste Technical Review Board, was discussed. The EPA has contracted with the Conservation Foundation to study the feasibility of negotiated rulemaking with initial interviews in the Washington, D.C. area set for late May/early June. A recommendation is to be made by late summer. An alternative to negotiated rulemaking would be technical workshops.

The ultimate schedule for repromulgation of the HLW standards will depend upon the outcome of the rulemaking feasibility study. It is expected that, with negotiation, the rule would be out in a year, while, without negotiation it would take probably a year beyond that. Looming over whatever path taken is the possibility that Congress could set a deadline of 6 to 24 months unrelated to the path chosen by EPA.

In response to a comment from Dr. Pomeroy, it was noted that the affected states (Nevada, New Mexico, and Washington) would be involved in the second round of interviews when they occur.

Dr. Hinze asked about the basis for the linear non-threshold approach and was told that EPA policy is to use this conservative method.

Discussion shifted to the three-bucket approach with Dr. Hinze noting the Committee's belief that human intrusion should be considered separately in the third bucket. Messrs. Clark and Galpin responded that they believe human intrusion is plausible and must therefore be considered with the overall repository performance assessment.

Dr. Hinze asked about the drilling statistics being considered almost a de facto requirement. In response, it was stated that the statistics were intended to represent a maximum worst case. It was believed that removal of the values would make it even more difficult for a licensee to sustain an argument about any number without having this bottom value. These statistics were largely generated by A. D. Little. Although the EPA staff had discussions with representatives of the Bureau of Mines, they focused on borehole sealing rather than the drilling frequency and density.

Drs. Pomeroy and Moeller questioned the applicability of the National Emission Standards for Hazardous Air Pollutants (NESHAP) limits to the repository and were told that currently they would not apply to an NRC licensed facility. However, should the stay in applicability be dropped, then the NESHAP limits would apply.

Dr. Moeller went through his list of comments and questions concerning: the incorrect use of "radioactivity released" when it should properly be "radioactive material released"; comparability of acceptable risk level to unmined uranium ore; reasons for 100 km^2 size of the controlled area; and NRC's agreement to modify Part 60 to comply with 40 CFR Part 191. He also requested an explanation of the statement that if the disposal system cannot be shown to comply with the containment requirements, EPA will consider whether modifications to Subpart B or C are appropriate. An example where this provision might apply is the gaseous release limit.

The six questions on which EPA requested guidance were discussed in some detail with Messrs. Galpin and Clark. This was done in order for the members not only to understand the questions thoroughly, but also to understand their purpose and intent so that the Committee's comments would be responsive.

Dr. Pomeroy asked about post-closure monitoring and was told that EPA encourages it for as long as feasible (and as long as the monitoring itself does not cause a release). He also asked what is the "reasonable period" mentioned in the standard for maintaining the capability to recover waste from the repository. Mr. Clark stated his expectation that such a period "was on the order of 10 to 100 plus something years."

The session closed with Dr. Moeller commenting that the Committee definitely plans to respond to the six questions but will not send its reply until after its 32nd meeting, currently scheduled to be held June 20, 1991. This schedule was determined to be acceptable to the EPA representatives.

III. Briefing by Representatives of the State of South Carolina (Open)

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

Mr. Vandy Miller, State Programs (SP), introduced Mr. Virgil Autry, Bureau of Radiological Health, Department of Health and Environmental Control (DHEC), State of South Carolina. In his remarks, Mr. Miller noted that South Carolina became the 21st Agreement State in September 1969, administers approximately 300 licenses and has been responsible for the safe operation of the Chem-Nuclear LLW disposal site near Barnwell, South Carolina since 1971. He also noted that the state has always received an "adequate and compatible" review from the NRC since inception of its program.

Mr. Autry discussed the organization and makeup of the DHEC Board, noting that their expertise covers a wide range. He discussed the organization of the Bureau of Radiological Health (BRH) and the responsibilities of its three divisions: Electronic Products, Environmental Surveillance, and Radioactive Materials. Mr. Autry is Director of the Radioactive Materials Division. In addition to monitoring and oversight of the Barnwell facility, the Radioactive Materials Division is responsible for oversight of radioactive waste transportation, compliance program enforcement, emergency response and DOE programs. He noted that the Radioactive Waste Engineering Group spends approximately 85% of its time on the Barnwell facility, with one person assigned full-time to the site. A medical incinerator located in Hampton, South Carolina, is another facility that requires considerable effort because some shipments received contain measurable amounts of radioactive materials. Most waste received at the incinerator is from out-of-state generators.

In response to a question from Dr. Pomeroy, Mr. Autry described their environmental surveillance laboratory, noting its participation in the EPA cross-check program and its full compliance with relevant quality assurance (QA) programs.

Mr. Autry reviewed the history leading up to the Barnwell license and noted that a public hearing was held before its issuance although one was not required. Most of the local residents accept the facility. A local legislator introduced a state bill to extend the life of the site because of the delays at the North Carolina facility (which is to become the host site for the Southeast Compact.)

South Carolina adopted Part 61. In addition, under its safe drinking water regulations, it treats all groundwater in the state

as drinking water, a condition with which Mr. Autry does not totally agree.

The interest bearing perpetual maintenance account for the Barnwell facility contains in excess of $40 million. It is expected that the interest alone from this account will provide adequate funds for site monitoring and maintenance.

Mr. Autry described the evolution of waste acceptability at the Barnwell site. Initially, no container was to exceed 100 mR/hr on contact whereas now certain Class C wastes may have contact readings up to 50,000 R/hr. Mr. Autry pointed out that South Carolina, not the NRC, put dewatering restrictions on the waste. The state set the breakpoint between Class A and B waste at 1 uCi/cc for half-lives greater than five years. The state also required waste to be solidified at the point of origin rather than at Barnwell, banned waste from Three Mile Island facility for about eight years, banned organic liquid scintillation fluids and banned the use of urea formaldehyde as an acceptable waste matrix.

Dr. Hinze asked how South Carolina interacts with the states of Nevada and Washington on questions of mutual concern, viz. LLW site disposal considerations. Mr. Autry replied that the communications process, while more formal now, has been in existence over a number of years. In addition to the exchanges of information provided by various association committees, such as the Conference of Radiation Control Program Directors, the Federal government provides forums for the interchange of relevant ideas and programs.

Mr. Autry observed that the current relationship with the NRC is more than satisfactory. He also described the state's relationship with the U.S. Geological Survey (USGS) and noted that USGS provided technical assistance in the early evaluation process for the acceptability of the Barnwell site.

Mr. Paul Lohaus, NMSS, noted that NRC conducts several cooperative programs with the states, such as those related to waste solidification media and high integrity containers.

Mr. Autry stated that South Carolina placed a 100,000 ft^3/month limit on the LLW volume that could be received at the Barnwell site. While there were some politically related concerns, the principal reason was health and safety based upon the number and types of shipments, the numbers of personnel required to offload the trucks, etc. Currently, the site is receiving 60-70,000 ft^3/month.

When Part 61 was implemented, South Carolina found adoption easy because much of the regulation was designed around the Barnwell site. In 1980, South Carolina passed its own Radioactive Waste Act

that requires a permit for all waste shipments, requires three day advance notification and specifies liability guarantees (principally bonding).

Over the years, evolved designs of trenches, standpipe placements, drain systems and other related items, have improved the current shallow land disposal system.

Mr. Autry discussed the sump and well monitoring program and the trench cap enhancement program. The trench cap enhancement is a layered system of clays, liners, sand and vegetation whose performance will be monitored to decide the best way to close the site. The results will be reviewed by a committee comprised of personnel from outside the agency and Chem Nuclear. While the purpose of the trench cap is to retard water infiltration, once water permeates the cap then the philosophy is to move the water through the disposal area as quickly as possible.

In response to a question concerning the observed tritium levels, it was stated that most of the tritium is from the atmosphere. Some, however, has come from the older trenches. In its analyses, South Carolina credits the metal containers with a 50-60 year hold-up capability which will permit much of the tritium to decay before leaking.

The state estimates that the site could operate for another 6.7 years at its maximum 1.2 million ft^3/year waste receipt rate. However, the site is to be shutdown at the end of 1991 by state law. DHEC is required to prepare a report to the state legislature on the status of the site and, also, to provide a recommendation for future use of the site. It was estimated that approximately 10-15% of the waste disposed at the site originated in South Carolina.

It is expected that sufficient funds to monitor and maintain the site properly will come from the perpetual care fund. This Fund contains a large contigency. The largest expected maintenance problem will be correcting subsidence. In response to a question from Dr. Pomeroy, Mr. Autry suggested that for regulatory purposes, South Carolina assumes "perpetual" to mean at least 300 years.

Chem-Nuclear will be permitted to leave the site when it satisfies both Part 61 and South Carolina's equivalent regulations. It is expected that this probably will require another 7-9 years.

Incoming shipments receive 100% inspection. Over one-half million dollars in fines have been levied, mainly against nuclear power plants. The principal observed violation usually involves a DOT regulation. Site operations are also continually monitored on a daily basis.

The Barnwell site is a priority one licensee which means the state thoroughly inspects the complete program every six months. While the NRC is welcome and has accompanied DHEC on many of its inspections, it does not accompany the state every time. However, it does review every state inspection report. State inspections are not generally announced, but the Chem-Nuclear radiation protection officer is informed as he represents the licensees regulatory group. (He usually does not inform the site operations group as he is in a separate chain-of-command).

Special (out-of-the-ordinary) waste shipments occupy much of the South Carolina engineers' time due to the additional analyses required before the granting of a variance. The solution to a problem must be proposed by the generator, then reviewed and accepted by the licensee (Chem-Nuclear) and the state.

Dr. Hinze asked if DHEC was aware of Chem-Nuclear's site model, do they monitor its use and have they ever, for example, specified trench or monitoring well locations? Mr. Autry stated that the model is monitored, the state is informed of any changes to it, and well and trench locations, especially in the southern area, have been suggested. He was not certain whether the model handled geochemistry considerations or whether it was a hydrologic model only.

It was pointed out that, with the immediate proximity to the Savannah River Plant, the site had been extensively studied and that many predicted results had been observed.

Dr. Moeller asked whether the Hanford and Beatty sites were similarly monitored with shallow and deep wells. Ms. Kathleen Schneider, GPA/SP, replied that Hanford was principally monitored by DOE due to its location on a DOE reservation. The Beatty site is very dry. Both sites have deep and shallow monitoring wells.

Dr. Pomeroy asked whether all data generated by the licensee are analyzed and was told that the data are analyzed for trends. The licensee, in required quarterly reports, must not only state what has changed since the last report but also why. Mr. Autry pointed out that tritium is considered an extremely useful precursor. Some reports are daily while others are either weekly, monthly or quarterly. This very multiplicity is believed to assure that early indications will be received and acted upon. Mr. Autry noted a situation where air sampling results caused the state to require an adjustment as to how certain vendors' waste shipments were to be handled. Routine sampling analyses are usually "split" but periodically there are also independent samples taken and analyzed.

South Carolina not only monitors specific radionuclides but also monitors hazardous and toxic pollutants. The latter analyses are

performed by an independent contractor. Compliance with the Low-Level Waste Policy Amendments Act (LLWPAA) is also performed by DHEC. This means administering surcharges and reviewing the LLWPAA milestone compliance for all states. All exported wastes are reviewed since materials such as radium and solidified oil are not permitted to be disposed of at the Barnwell site.

Mr. Autry responded to a hypothetical question from Dr. Pomeroy as to how the state program would compare to one run by the NRC in a non-Agreement State. In addition to the dedicated staff (including a full-time, on-site presence) Mr. Autry pointed out the political reality that the surrounding populace tend to trust local or state employees more than Federal Government employees.

The retention periods for junior DHEC staff members are generally in the range of two to three years. They generally leave after their specialized training is completed. Most go to industry but many go to other state or Federal programs. Most of the health physicists start with a bachelor's degree (usually in biology or chemistry) and are then trained in radiation protection/health physics disciplines. The NRC has about 15 core courses available to the Agreement States for personnel training. In addition, on-the-job training is conducted by supervisors. Corporate memory at the DHEC is maintained at the section manager level, which averages five plus years of experience with the South Carolina group. Senior managers, such as Mr. Autry, have more than 18 years of service at DHEC.

In closing, Mr. Miller pointed out that State Programs has asked the five Regional Agreement Officers to look for indicators that will provide precursory warnings as to which states are likely to have budgetary constraints that could impact the program. Once identified, if possible, SP would provide assistance and, if necessary, ask for support from the Division of Low-Level Waste Management and Decommissioning.

IV. DIGITAL DATA SET FOR YUCCA MOUNTAIN (Open)

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

The presentation was given by Mr. Carl Daudt, ACNW intern and a Ph.D. candidate in seismology at Purdue University. Dr. Hinze introduced the topic.

Dr. Hinze explained that the project on the digital data set was initiated as a result of the lack of data displayed in a consistent form in terms of map scales and projections in the DOE Site Characterization Plan for Yucca Mountain. With the data set, the

Committee will have access to geographic, topographic, geologic, and hydrologic information.

Dr. Hinze noted that the geographic information system used by Mr. Daudt is "user friendly." The database developed by Mr. Daudt includes regional and site specific data. He has prepared a report that explains what the software can do and how to access the digitized data.

Mr. Daudt began his ACNW intern project in early July 1990 and continued to October. His mission was to explore the use of a geographic database that would aid in evaluations of the Yucca Mountain site. He was asked to select existing geographic information software (GIS) that will work on the computer equipment available to the ACNW staff. The product should provide the ACNW with a visual perspective of geological, geophysical, and geographical information for the Yucca Mountain site and region. A final requirement was that the database be expandable to conform to future GIS standards and site data.

Two types of data were digitized; detailed (site) data and regional data from 35 to 39 degrees north and from 114.5 to 118 degrees west. Data types include gridded data, such as gravity or magnetic anomalies; point locations, such as well locations or earthquake epicenters; lines that represent features such as faults or topographic contours; and areal descriptions, such as the general geology or the repository perimeter boundary. Regional data were gridded at a one-kilometer interval.

Data were from site and regional maps that Mr. Daudt hand-digitized or from other sources on magnetic tape. The data set does not contain locations of roads or political boundaries, however, latitude and longitude tick marks are provided for location. Mr. Daudt added that it would be simple and useful to add roads and other information of that type.

The software chosen by Mr. Daudt is IDRISI, a software package that was developed by Dr. Ron Eastman of Clark University. The software is an inexpensive system that is raster based. IDRISI has basic data retrieval, entry, display and management facilities. It also offers the capability to import and export data from other formats.

Other software used by Mr. Daudt was GSMAP and Pizazz Plus. GSMAP was produced by the U.S. Geological Survey and was published as an Open-File-Report. It is a digitizing software package that also requires a digitizing tablet. Pizazz Plus is a program to capture what the user projects on the screen of the computer in order to retrieve a quality printout. The project report produced by Mr. Daudt contains examples of Pizazz Plus printouts.

The map projection chosen by Mr. Daudt was the Lambert conic conformal projection with standard parallels at 33 and 45 degrees, a central meridian at 117 degrees west, and a base latitude at the equator. This was chosen because the magnetic anomaly data for the Yucca Mountain site are already at this projection and other data were easily converted to that projection.

Mr. Daudt provided the Committee with a computer demonstration of the data set with examples of the gravity map of the region with the seismicity data overprinted. He also displayed the site boundaries, some fault data, and general geology. This was supplemented with projected slides of some examples of the data set.

He noted that one problem he encountered when he digitized data from regional maps was that some data appeared to be offset slightly from the topographic contours and faults. This potential problem with spatial alignment makes it important for the person working with a GIS system to know how the data should match.

IDRISI code also allows the user to add an explanation (legend) to the map. Mr. Daudt displayed an example of this feature of the system. He also demonstrated how the use of a variety of colors enables the viewer to differentiate between data sets.

Another feature of the system demonstrated by Mr. Daudt is the ability to draw a profile of what is being viewed on a map.

Mr. Daudt noted that many data sets are being released by the U.S. Geological Survey in digital form. It is important to be able to display these data sets and, through GIS systems, to look at relationships between various data sets. By displaying overlapping data on the computer screen, the geologist is not required to look at several maps at one time.

Dr. Pomeroy and several NMSS staff expressed interest in receiving copies of the digital data set. This briefing was for information only. No action was taken by the Committee.

V. EXECUTIVE SESSION (Open)

A. REPORTS AND MEMORANDA

- Review of Regulatory Guides on Revised 10 CFR Part 20 (Report to Commissioner Rogers, dated May 30, 1991.)

- Alternative Approach to the Probabilistic Section of the Containment Requirements in 40 CFR Part 191 ("The Three-Bucket Approach") (Report to Chairman Carr, dated May 30, 1991.)

- Review of Draft SECY Paper on Dealing with Uncertainties (Memorandum to Mr. Robert Bernero, Director, Office of Nuclear Material Safety and Safeguards, dated May 30, 1991.)

B. REPORT FROM WORKING GROUP ON INTEGRATION OF GEOPHYSICS INTO SITE CHARACTERIZATION OF A HIGH-LEVEL WASTE REPOSITORY (Open)

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

The Working Group meeting was held on April 22, 1991, with eight speakers representing the State of Nevada, NRC DHLWM, DOE Yucca Mountain Project Office, U.S. Geological Survey, private industry, and academia. All participants were knowledgeable of the Yucca Mountain program. Presentations were formal with informal discussions.

The objectives of the Working Group were to build for the Committee the knowledge base on geophysics and discuss how geophysical methods could be utilized to study the subsurface conditions at the proposed site.

An important concern of the Working Group was the integration of data. Dr. Hinze noted that the DOE had produced a "white paper" to respond to that concern, however, it was noted by the DOE that this was only the first step in work toward integration of geophysical methods into site characterization efforts.

Three items that the working group thought required special attention related to the role of geophysics, the problem of integration, and the current existing geophysical data.

Highlights of the presentations and discussions by the participants were:

- Three-dimensional characterization of the site, on a regional and local level, is essential to the licensing process and geophysics should play an important part.

- Geophysical methods are relatively non-intrusive; thus, acquisition of the resulting data will not violate the integrity of the site.

- Geophysical tests should be tuned to the objective. The problems of resolution and sensitivity of parameter variations are important concerns.

- The appropriate sequencing of geophysical tests within the site characterization program is important.

- The white paper does an excellent job of reviewing existing geophysical data. The report also recommends feasibility testing to determine the best geophysical techniques to be used.

- Two examples of ongoing integration efforts were provided:

  - Dr. Walter Mooney included gravity and geologic data in his interpretation of the Amargosa Valley seismic reflection line.

  - Dr. Chris Fridrich showed how the integration of heat flow; and structural, stratigraphic, geophysical, and hydrological data were used to provide an interpretation for the large hydraulic gradient northwest of Yucca Mountain.

It appears that geophysicists have inadequate input to DOE Study Plans. An example is the Midway Study Plan where geophysical data are not being considered to plan the placement of trenches to examine possible faults.

Committee members were pleased to hear that the DOE Study Plans are flexible documents that can be changed as more data become available or more tests are necessary.

Existing geophysical data should be qualified as soon as possible. These data are already being used in the planning of site characterization studies and locations of tests.

DOE needs to consider new technologies. The geophysical program will need upgrading periodically.

Some follow-up items suggested by Drs. Hinze and Pomeroy were:

- Will there be any follow-up by DOE to the white paper?

- The Committee should consider a natural resource evaluation working group that will focus on methods other than geophysics.

- When reviewing the DOE Study Plans, consideration should be given to the integration and sequencing of geophysical tests with other work.

- Establishment of a regional studies working group and a detailed study working group should be considered.

- All existing geophysical data should be presented in a standard GIS format.

- A presentation by the DOE on the new Management and Operation contractor, especially for the proposed work in the geosciences, should be considered. Thought should also be given to hearing how DOE envisions the integration task of the M and O contractor.

- When available, DOE should be asked to summarize the Site Suitability Evaluation which subsumes the surface based prioritization study.

- An effort should be made to determine how the NRC tracks the DOE Study Plan revisions and how they plan to review revisions.

- How are programs related to earthquake seismology, stress monitoring, and heat flow integrated into site studies?

- What data system, if any, is being set up by the Yucca Mountain Project Office?

- Consideration should be given to the appointment of a geophysics "Czar" to pull together studies and issues for site characterization studies.

C. TRIP REPORTS

1. Second Annual International High-Level Radioactive Waste Management Conference

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

The Second Annual International High-Level Radioactive Waste Management conference was held in Las Vegas, April 19 to May 2, 1991. Dr. Pomeroy, Dr. Okrent, and Ms. Charlotte Abrams attended. Dr. Pomeroy reported on the conference.

There were fifty-two sessions during the conference, many held concurrently. Presentations included technical discussions on geology, geochemistry, waste package, and engineering. There were also discussions of regulations and standards, performance assessment, societal issues and public policy, and risk.

Points highlighted by Dr. Pomeroy and Ms. Abrams were:

- Conference attendees agreed that human intrusion was a significant problem for a HLW repository.

- Dose limits versus release limits were discussed and there was a significant amount of support for the EPA release limits.

- NRC subsystem standards were criticized with respect to their lack of flexibility.

- The Nuclear Waste Negotiator, Mr. David Leroy, gave an excellent presentation of his function and his goals.

- A controversial presentation on the licensing support system (LSS) was given by Mr. Chris Pflum and a lawyer from the University of Nevada at Las Vegas. The presentation discussed the usefulness of the LSS concept and why it should be located at the University of Nevada. Concern was expressed about the lack of movement on the system by DOE and NRC.

- Although access to the proposed Yucca Mountain site continues to be limited, new technical data are being acquired. These were summarized at the Conference.

Follow-up items suggested during the presentation:

- The LSS administrator might be invited to provide a status report to the Committee.

- The DOE might be invited to review what it plans to do to qualify the existing core samples.

Mr. Ray Wallace, U.S. Geological Survey, stated that DOE has decided that approximately 37,000 feet of existing core will be qualified with existing procedures on a case-by-case basis. This drill core already been used in reconnaissance of Yucca Mountain. Contrary to statements in a recent General Accounting Office report, only about seven percent of the $48 million was spent on holes that were cored. Other drilling was for tests such as water level or testing geophysical testing.

Dr. Pomeroy provided the Committee with information on two planned EPRI workshops on the EPA high-level standards. These workshops are planned for September 23-26, 1991, and January 1992. Their aim is to provide a technical forum for focused scientific and technical

review and discussion of the technical bases for the existing high-level waste disposal standards, 40 CFR Part 191.

Agenda items for the EPRI Workshops include the risk basis for the standards, containment requirements and population protection, individual and groundwater protection, and human intrusion in the implementation of the standards.

Since the EPRI September meeting conflicts with the scheduled ACNW meeting, the Committee was asked to decide if it wishes to participate.

2. Lunar Crater Volcanic Field

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

Ms. Abrams and Dr. Hinze reported on the recent visit to Lunar Crater Volcanic Field. The trip was attended by Committee members and Consultants, and representatives of the DOE, NRC staff, Center for Nuclear Waste Regulatory Analyses, State of Nevada, Clark County, Nuclear Waste Technical Review Board, and National Academy of Sciences.

Participants observed the geomorphic evidence for age relationships of the various volcanic cones and flows at and near the Yucca Mountain site, at Lunar Crater Volcanic Field, and in Death Valley. Dr. Ken Foland presented isotopic data to support age determinations in the Lunar Crater area.

Comparisons of the geomorphic evidence and isotopic data stimulated discussion. Dr. Hinze stated that, based on these discussions, his concerns about the need for a geologic dating working group were re-enforced.

The Committee is also interested in any analog research the NRC staff may be considering that may include the Lunar Crater Volcanic Field.

3. Nuclear Waste Technical Review Board Meeting

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

The Committee heard a report from Dr. Pomeroy who attended the Nuclear Waste Technical Review Board (NWTRB) meeting on performance assessment, held on May 20-21, 1991.

Dr. Pomeroy reported that the first day was taken up entirely with a review of the performance assessment program at DOE. During the NWTRB meeting, Mr. Russ Dyer, DOE, who has the responsibility for directing the performance assessment program, stated that expert opinion will form the basis for every decision in performance assessment. Performance assessment is often seen as a panacea for all the problems in the HLW program rather than a useful tool in the decision process. Several participants in the meeting emphasized the importance of deciding on methodologies for the elicitation of expert judgment and how experts are selected.

During the second day of the meeting, presentations were made on performance assessment outside of the DOE/YMPO program, including the Golder Performance Assessment Program. Dr. Pomeroy concluded that there is little coordination between the performance assessment program being conducted for DOE Headquarters and the much larger program being conducted for the Yucca Mountain Project Office.

Dr. Pomeroy and Mr. Gnugnoli discussed the Performance Assessment and Calculation Exercises (PACE) that bring together disparate elements and many subcontractors to give an integrated result.

D. MEETING WITH DR. CONGEL, NRR

Dr. Moeller reported on his meeting with Dr. Frank Congel to discuss airborne releases from nuclear power plants. Mr. Congel is expected to submit an informal report to the Committee on the matters discussed.

E. LEACHING RESISTANCE OF LLW WASTE FORM

The Committee deferred its discussion of a response to a recent Staff Requirements Memorandum (SRM) concerning an ACNW suggestion that Part 61 be revised with regard to the leaching resistance of the low-level waste form and associated groundwater protection requirements. (This topic will be discussed during the 32nd ACNW meeting.)

F. UNCERTAINTIES IN IMPLEMENTING THE EPA'S HLW RADIATION PROTECTION STANDARDS

The Committee completed its deliberations on the NRC staff draft report that concerns dealing with uncertainties in association with the implementation of the EPA HLW repository

standards. A related memorandum to Mr. Robert Bernero was issued on May 30, 1991.

G. MEMORANDUM FROM COMMISSIONER ROGERS

The Committee discussed a memorandum from Commissioner Rogers, dated April 29, 1991, regarding three questions to be answered by the Committee. The Committee agreed to establish a Working Group to address the first two questions, viz. Has the NRC staff developed a suitable performance assessment program?, and, are there adequate equipment, expertise and training available to the NRC staff for HLW and LLW computer modelling? Dr. Pomeroy will chair this Working Group. The Working Group will meet on September 11-13, 1991.

The Committee prepared a memorandum to Commissioner Rogers in response to his third question on the basis/criteria for apportionment of the responsibilities between the ACNW and ACRS for review of the regulatory guides being developed in support of the revised 10 CFR Part 20. The memorandum, which was drafted, subject to final approval by ACRS, was issued on May 30, 1991.

In view of the estimated time required to prepare an adequate response, the Committee agreed to request that the SECY deadline for response to Commissioner Rogers' other two questions be moved from May 30, 1991, to September or October.

H. ACNW FUTURE ACTIVITIES

- The Committee discussed the proposed Electric Power Research Institute's Workshops on HLW disposal criteria, tentatively scheduled for September 1991 and January 1992. The workshops may not be held if the EPA decides to use negotiated rulemaking to develop its HLW standards, 40 CFR Part 191. In case the meetings are held, the Committee agreed that an ACNW observer should attend.

- The Annual meeting of the Health Physics Society will be held in Washington, D.C., during the week of July 21-25, 1991. Since this meeting will have a number of presentations that directly address areas of interest to ACNW members and staff, there may be a possible conflict with the scheduled 33rd ACNW meeting (July 24-26, 1991). The Committee will consider during the 32nd ACNW meeting whether the 33rd ACNW meeting should be rescheduled so that members and staff can attend the Health Physics Society meeting.

- The Committee selected the following tentative dates for future Working Group meetings:

Topic	Dates	Chairman
10 CFR 20 Regulatory Guides*	8/20-22/91	Moeller
Computer Modeling/PA	9/11-13/91	Pomeroy
Quaternary Dating	10/22/91	Hinze
Residual Contamination	10/25/91	Steindler
Long-Term Climatology	11/19/91	Hinze
Post-Closure Monitoring	11/22/91	Moeller
Human Intrusion/Natural Res.	12/17/91	Hinze

*ACRS members, Mr. James Carroll and Dr. Ernest Wilkins, expressed interest in being kept informed on the Committee's plans for reviewing the Regulatory Guides.

- The Committee agreed that there is no longer a need to have a Working Group on an alternative probabilistic format for the containment requirements in EPA's high-level waste standards.

- The Committee agreed that Mr. Howard Larson should not devote further effort to revising the draft report prepared by Ms. Mary Ryan entitled, "Comments Regarding 40 CFR Part 191, EPA High-Level Waste Repository Standards." The Committee also agreed that no additional work should be devoted to the draft report prepared by Ms. Mary Ryan entitled, "Listing of Computer Codes Used in Geological Repository Modeling."

- The Committee had no objection to Dr. Pomeroy presenting a paper on expert opinion and uncertainties in nuclear waste disposal performance assessment as part of the program for the annual meeting of the Society for Risk Analysis to be held in Baltimore, MD, in December 1991.

- It was reported that the Naturally Occurring Radioactive Material (NORM) disposal facility in Utah has been licensed to accept mixed wastes. Dr. Moeller requested that the ACNW staff learn more on this subject and report to the Committee.

I. FUTURE AGENDA

The Committee agreed to the tentative future agenda as shown in Appendix II. This list includes items proposed by the Commissioners and NRC staff as well as ACNW members.

The 31st ACNW meeting was adjourned at 4:33 p.m. on May 23, 1991.

APPENDIX I: MEETING ATTENDEES

31ST ACNW MEETING
MAY 22-23, 1991

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

ACNW CONSULTANT

NRC STAFF		1st Day	2nd Day	
Donald Chery	NMSS	X		
Seth Coplan	NMSS	X		
Philip Justus	NMSS		X	
Paul Lohaus	NMSS	X		
Helen Pastis	NRR	X	X	
Leroy Person	NMSS	X		
Clark Prichard	RES	X		
Phillip R. Reed	RES	X		
Michael Tokar	NMSS	X		
Ricky Twigg	NRR		X	
James Wolf	OGC	X		

ATTENDEES FROM OTHER AGENCIES AND GENERAL PUBLIC

Paula Austin	SAIC
Virgil R. Autry	South Carolina DHEC/BRH
Mike Bauser	EEI/UWASTE
Lester Berkowitz	TRW
Ray Clark	EPA
Jean Dameron	TRW
Carl R. Daudt	Purdue University
Stan Echols	Winston & Strawn
Floyd Galpin	EPA
Richard Goffi	Weston/Jacobs Engineering
William Haslebacher	Weston/EER
V. Lewis Killpack	Weston/UE&C
Paul M. Krishna	Battelle
Homi Minwalla	Weston/Jacobs Engineering
Andy Muir	ICF Technology
Cliff Noronha	Weston
Steve Oston	TASC
Ricardo Palabrica	Weston/UE&C
U-Sun Park	SAIC
Caroline Petti	EPA
Pat L. Plante	CNWRA
Edward Regnier	DOE
Kyle Rogers	EPA
Vic Sgobbe	GAO
G. Stirewalt	CNWRA
Ray Wallace	USGS Hq
E.M. Weaver	Duke Engineering & Service,Inc.
R. F. Williams	EPRI

APPENDIX II. FUTURE AGENDA

32nd ACNW Committee Meeting June 20, 1991 (Tentative Agenda)

Leaching Resistance of LLW Waste Form - The Committee will continue its discussion on a response to a recent Staff Requirements Memorandum (SRM) concerning a proposed revision of Part 61 with regard to leaching resistance of the low-level waste form and groundwater protection requirements.

Trip Reports - Dr. Pomeroy will report on his recent visit to the West Valley Demonstration Project, New York. Dr. Hinze will report on the American Geophysical Union Meeting, held in Baltimore, Md.

Joint Working Group Report - The Committee will hear a report on a joint meeting of the Working Group on Expert Judgment and the Working Group on Human Intrusion, held on June 18-19, 1991.

Working Draft #3 of the 40 CFR Part 191, High-Level Waste Repository Standards - The Committee will continue its discussion on a draft report in response to the six questions accompanying working draft #3 of the EPA standards.

Committee Activities - The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, and organizational matters, as appropriate. The members will also discuss matters and specific issues that were not completed during previous meetings as time and availability of information permit.

Working Group Meetings

Joint Meeting of Working Group on Expert Judgment and the Working Group on Human Intrusion in the Performance Assessment for Nuclear Waste Disposal, June 18 and 19, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Gnugnoli) 8:30 a.m., Room P-110 - The Working Group will continue the examination of methods for eliciting expert judgment. The meeting will focus on the actual mechanics of elicitation. This includes questions on who will identify and select the experts, as well as how the selected experts are trained and how their opinions are aggregated. Human intrusion will serve as the reference example in relating the elicitation process to a real and useful application. Participants will include normative experts, as well as NRC and DOE staff and consultants involved with Yucca Mountain and WIPP.

Regulatory Guides for Implementing Revisions to 10 CFR Part 20, August 20-22, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Gnugnoli) - The Working Group will review, discuss and make recommendations for revising nine regulatory guides:

- Interpretation of Bioassay Measurements
- Instruction on Health Risks from Occupational Radiation Exposure
- Instructions to Pregnant Women
- Preparation of Applications for Use of Sealed Sources and Devices for Performing Industrial Radiography
- Preparation of Applications for Medical Uses
- Criteria and Procedures for Summation of Internal and External Occupational Doses
- Dose to Embryo/Fetus
- Assessing External Radiation Doses from Airborne Radioactive Materials
- Air Sampling

NRC Staff Computer Modeling and Performance Assessment Capabilities in HLW and LLW, September 11-13, 1991, 7920 Norfolk Avenue, Bethesda, Md, (Gnugnoli) - The Working Group will review, discuss and make recommendations regarding the NRC staff capabilities to make independent evaluations of licensee proposals with respect to the performance of low-level and high-level radioactive disposal facilities. Emphasis will be placed on computational capabilities involving computer modeling, documentation, verification and validation.

Geologic Dating October 22, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Abrams) - The Working Group will review and discuss the problems and limitations associated with the various Quaternary dating methods to be used in site characterization of an HLW repository.

Residual Contamination Clean-up Criteria October 25, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Gnugnoli) - The Working Group will review, discuss and make recommendations regarding the soil clean-up criteria and clean-up levels for unrestricted use at contaminated sites that are or have been under AEC or NRC license.

Long-Term Climate Change November 19, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Abrams) - The Working Group will review and discuss potential long-term climate changes and their impact on performance assessments and ultimately on the suitability of the proposed HLW repository.

Post-closure Monitoring November 22, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Larson) - The Working Group will discuss post-closure monitoring of an HLW repository and other related issues.

The ACNW staff will invite representatives from EPA and NRC to brief the Committee on various aspects associated with post-closure monitoring.

Human Intrusion December 17, 1991, 7920 Norfolk Avenue, Bethesda, MD, (Abrams) - The Working Group will discuss methodologies for the assessment of the potential for natural resources at a proposed HLW disposal site.

APPENDIX III. DOCUMENTS RECEIVED

A. Documents Received from Presenters and ACNW Staff

AGENDA ITEM NO.	DOCUMENTS
1	Chairman's Report
	1. Recent Events of Possible Interest to ACNW Members, dated May 18, 1991, by Dade W. Moeller [Official Use Only]
2	Working Draft #3 of the 40 CFR Part 191 High-Level Waste Repository Standards
	2. Presentation to ACNW by Mr. Ray Clark on Working Draft #3 of 40 CFR Part 191 [Viewgraphs]
	3. Two Graphs on Distribution of CCDFs for Comparison with EPA Release Limits
3	Agreement State Program Implementation by the State of South Carolina
	4. South Carolina Department of Health and Environmental Control, Bureau of Radiological Health, Organization Chart and Other Related Viewgraphs, undated
4	Digital Data Set for Yucca Mountain
	5. Yucca Mountain Digital Data Set - Project Report Prepared for: U.S. NRC Advisory Committee on Nuclear Waste - Revision 1.1, by Carl Daudt, May 22, 1991
	6. Yucca Mountain Digital Data Set by Carl Daudt, May 22, 1991 [Viewgraphs]
7	Working Group on Integration of Geophysics into Site Characterization of an HLW Repository
	7. ACNW Working Group on Geophysical Testing for Characterization of an HLW Repository, draft 3, dated May 22, 1991
10	Anticipated ACNW Activities
	8. Memorandum to ACNW Members from Charlotte Abrams, dated May 14, 1991, re Proposed ACNW Working Groups
	9. Letter to S. Fortuna, NRC, from Wesley Patrick, CNWRA, dated May 21, 1991, re ACNW Visit to CNWRA

B. Meeting Notebook Contents Listed by Tab Number

TAB	CONTENTS
1	Chairman's Report
	1. Introductory Statements by ACNW Chairman for the 31st Meeting, dated May 22-23, 1991
	2. Items of Interest, undated
2	Working Draft #3 of the 40 CFR Part 191 High-Level Waste Repository Standards
	3. Status Report, undated
	4. Memorandum to ACNW Members from Howard Larson, dated May 8, 1991, re EPA's HLW Standards, 40 CFR Part 191; Working Draft #3, with enclosures
	5. Memorandum to James Taylor and Dade Moeller from Samuel Chilk, dated April 18, 1991, re Staff Requirements - Periodic Meeting with ACNW, 2:00 p.m., Friday, March 22, 1991, Commissioners' Conference Room, One White Flint North, Rockville, Maryland
3	Agreement State Program Implementation by the State of South Carolina
	6. Status Report, May 22-23, 1991
	7. Note to Docket No. 27-47 from LeRoy Person, dated May 10, 1990, re March 15 and 16 South Carolina Agreement State Visit (Inspection and Compliance Assessment)
	8. Memorandum to Leo Higginbotham from John Starmer, dated May 28, 1985, re Trip Report for Travel on May 13-15, 1985, with enclosure
	9. Memorandum to Edward Hawkins from George Pangburn, dated June 6, 1983, re Trip Report to Barnwell Low-Level Waste Disposal Facility, with enclosure
	10. Memorandum to Edward Hawkins from George Pangburn, dated September 17, 1982, re Trip Report - South Carolina Hearings, with enclosure
	11. Memorandum to Edward Hawkins from George Pangburn, dated August 5, 1981, re Trip Report for Barnwell Licensing Action, June 9-11, 1981, with enclosure
	12. Extract from the report, "Status of States Providing Disposal Capacity for LLW," dated January 31, 1991, by F. C. Combs
4	Digital Data Set for Yucca Mountain
	13. Status Report, dated May 22, 1991
5	Revising 10 CFR Part 61 Relative to Leaching Resistance

14. Status Report, dated May 22-23, 1991
15. Memorandum to James Taylor and Dade Moeller from Samuel Chilk, dated April 18, 1991, re Staff Requirements - Periodic Meeting with ACNW 2:00 p.m., Friday, March 22, 1991, Commissioners' Conference Room, One White Flint North, Rockville, Maryland
16. Memorandum to Raymond Fraley from James Taylor, dated April 15, 1991, re NRC Staff Response to 28th ACNW Meeting Follow-up Items
17. Memorandum to James Taylor from Dade Moeller, dated May 10, 1991, re Requirements for Groundwater Protection at LLW Disposal Sites
18. Draft Memorandum to Dade Moeller from Martin Steindler, dated March 21, 1991, re What Information is Needed for the Part 61 Study? [Official Use Only]
19. ACNW Report to Chairman Carr, dated September 6, 1990, re Revision 1 of Draft Technical Position on Waste Form

6 Draft SECY Paper on Uncertainties

20. Memorandum to ACNW Members from Howard Larson, dated May 10, 1991, re Review of SECY Paper on Dealing with Uncertainties, with enclosure

7 Working Group on Integration of Geophysics into Site Characterization of an HLW Repository

21. Status Report, undated

8 High Level Radioactive Waste Management Conference

22. Meeting Agenda for the Second Annual International High Level Radioactive Waste Management Conference and Exposition held on April 28 - May 3, 1991 at Caesars Palace, Las Vegas

9 Field Trip to Lunar Crater

23. Memorandum to ACNW Members from Charlotte Abrams, dated May 14, 1991, re Recent Visit to Lunar Crater Volcanic Field, with enclosure

10 Anticipated ACNW Activities

24. Set June Agenda
25. Draft Agenda for Visit to the Center for Nuclear Waste Regulatory Analyses
26. Memorandum to Dade Moeller from Kenneth Rogers, dated April 29, 1991, re General Questions Not Addressed at the ACNW Meeting with the Commission on March 22, 1991
27. Enclosure 4 to Fellowship Program Monthly Report, undated, by Abrams, Gnugnoli, and Larson

please take notice that the Nuclear Regulatory Commission has received the following applications for export licenses. Copies of the applications are on file in the Nuclear Regulatory Commission's Public Document Room located at 2120 L Street, NW., Washington, DC.

A request for a hearing or petition for leave to intervene may be filed within 30 days after publication of this notice in the Federal Register. Any request for hearing or petition for leave to intervene shall be served by the requestor or petitioner upon the applicant, the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555; the Secretary, U.S. Nuclear Regulatory Commission; and the Executive Secretary, U.S. Department of State, Washington, DC 20520.

In its review of the applications for licenses to export nuclear grade graphite as defined in 10 CFR part 110 and noticed herein, the Commission does not evaluate the health, safety or environmental effects in the recipient nation of the material to be exported. The information concerning these applications follows.

NRC EXPORT LICENSE APPLICATIONS

Name of applicant, Date of Appl., Date Received, Application number	Description of items to be exported	Country of destination
Pennegraph, Inc., 04/24/91, 04/26/91, XMAT0357	35,000.0 kgs of Bulk Nuclear Grade Graphite for use as Electrode Material for Electrical Discharge Machining.	France.
Pennegraph, Inc., 04/24/91, 04/26/91, XMAT0358	35,000.0 kgs of Bulk Nuclear Grade Graphite for use as Electrode Material for Electrical Discharge Machining.	Italy.
Pennegraph, Inc., 04/24/91, 04/26/91, XMAT0359	35,000.0 kgs of Bulk Nuclear Grade Graphite for use as Electrode Material for Electrical Discharge Machining.	Sweden.

Dated this 3rd day of May 1991 at Rockville, Maryland.

For the Nuclear Regulatory Commission.

Ronald D. Hauber,

Assistant Director for Exports, Security, and Safety Cooperation, International Programs, Office of Governmental and Public Affairs.

[FR Doc. 91-11214 Filed 5-9-91; 8:45 am]

BILLING CODE 7590-01-M

Advisory Committee on Nuclear Waste; Meeting

The Advisory Committee on Nuclear Waste (ACNW) will hold its 31st meeting on May 22 and 23, 1991, room p-110, 7920 Norfolk Avenue, Bethesda, MD, 8:30 a.m. until 5 p.m. each day. The entire meeting will be open to the public.

The purpose of the meeting will be to review and discuss the following topics:

A. Briefing by and discussion with representatives of the State of South Carolina regarding the implementation of their agreement state program.

B. Respond to the Staff Requirements Memorandum concerning the need for revision to 10 CFR part 61 as it relates to low-level waste form leachability and groundwater protection requirements.

C. The Committee may continue discussions which address dealing with uncertainties in implementing the EPA High-Level Waste Standards.

D. Discuss information obtained by members from attendance at the Second Annual International High-Level Radioactive Waste Management Conference and a field trip to Lunar Craters.

E. Briefing and discussion on a digital data set prepared for the Yucca Mountain site.

F. The Committee will hear a presentation by a representative of the DOE Office of Civilian Radioactive Waste Management on research being conducted in support of DOE's HLW repository characterization program.

G. The Committee will be briefed on Working Draft #3 of the Environmental Protection Agency's 40 CFR part 191, High-Level Waste Repository Standards if available.

H. The Committee will hear a report from its Working Group Chairman on a recent meeting concerning integration of geophysics into the site characterization of a high-level waste repository.

I. The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, administrative, and organizational matters, as appropriate. The members will also discuss matters and specific issues that were not completed during previous meetings as time and availability of information permit.

Procedures for the conduct of and participation in ACNW meetings were published in the Federal Register on June 6, 1988 (53 FR 20699). In accordance with these procedures, oral or written statements may be presented by members of the public, recordings will be permitted only during those portions of the meeting when a transcript is being kept, and questions may be asked only by members of the Committee, its consultants, and staff. The office of the ACRS is providing staff support for the ACNW. Persons desiring to make oral statements should notify the Executive Director of the office of the ACRS as far in advance as practical so that appropriate arrangements can be made to allow the necessary time during the meeting for such statements. Use of still, motion picture, and television cameras during this meeting may be limited to selected portions of the meeting as determined by the ACNW Chairman. Information regarding the time to be set aside for this purpose may be obtained by a prepaid telephone call to the Executive Director of the office of the ACRS, Mr. Raymond F. Fraley (telephone 301/492-4516), prior to the meeting. In view of the possibility that the schedule for ACNW meetings may be adjusted by the Chairman as necessary to facilitate the conduct of the meeting, persons planning to attend should check with the ACRS Executive Director or call the recording (301/492-4600) for the current schedule if such rescheduling would result in major inconvenience.

Dated: May 6, 1991.

John C. Hoyle,

Advisory Committee Management Officer.

[FR Doc. 91-11215 Filed 5-9-91; 8:45 am]

BILLING CODE 7590-01-M

NUCLEAR WASTE TECHNICAL REVIEW BOARD

Meeting

ACTION: Notice of meeting.

SUMMARY: Pursuant to the Nuclear Waste Technical Review Board's (the Board) authority under section 5051 of Public Law 100-203 of the Nuclear Waste Policy Amendments Act of 1987 (NWPAA), the Board's Panel on Transportation & Systems will hold a public hearing on August 15, 1991, in Denver, Colorado. The purpose of the

SCHEDULE AND OUTLINE FOR DISCUSSION
31ST ACNW MEETING
MAY 22-23, 1991

Wednesday, May 22, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

1)	8:30 - 8:45 a.m.	Opening Remarks by ACNW Chairman (Open) 1.1) Opening Remarks (DWM/RKM) 1.2) Items of Current Interest (DWM/RKM)
2)	8:45 - 10:45 a.m.	Briefing by EPA Staff on Working Draft #3 of the 40 CFR Part 191 High-Level Waste Repository Standards (Open) (DWM/HJL) 2.1) Summary of Working Draft #3 2.2) Changes from previous drafts 2.3) Schedule for final promulgation
	10:~~45~~ 50 - 11:~~00~~ 15	****** BREAK ******
3)	11:~~00~~ 15 - 1:00 p.m.	Briefing by Representatives of the State of South Carolina (Open) (PWP/HJL) 4.1) Agreement State Program Implementation 4.2) Observations
	1:00 - 2:~~00~~ 10 p.m.	****** LUNCH ******
4)	2:~~00~~ 10 - 3:~~00~~ 10 p.m.	Briefing on a Digital Data Set Prepared for Yucca Mountain -- C. Daudt (Former ACRS/ACNW Intern) (Open) (WJH/CEA)
5)	3:00 - 3:30 p.m.	Consider a Response to an SRM Concerning the Need for Revision to 10 CFR Part 61 as it Relates to Low-Level Waste for Leachability and Ground-Water Protection Requirements (Open) (MJS/HJL) 5.1) Status of Response
	3:~~20~~ 10 - 3:~~45~~ 30 p.m.	****** BREAK ******
6)	3:~~45~~ 30 - ~~5:30~~ 4:10 p.m.	Discuss Uncertainties in Implementation of the EPA High-Level Waste Standards (Open) (MJS/HJL)
	5:~~30~~ 10 p.m.	****** RECESS ******

Thursday, May 23, 1991, Room P-110, 7920 Norfolk Avenue, Bethesda, Maryland

7)	8:30 - 9:~~00~~ 17 a.m.	Working Group Chairman's Report on Recent Meeting Concerning Integration of Geophysics into Site Characterization of a HLW Repository (Open) (WJH/CEA)

[= Parts that were transcribed

8) 9:~~00~~ 17 - ~~9:30~~ 10:07 a.m. — Report on the Second Annual International High-Level Radioactive Waste Management Conference (Open) (PWP/CEA)

9) ~~10:00~~ 10:29 - 10:~~00~~ 38 a.m. — Report on the Field Trip to Lunar Crater Volcanic Field (Open) (WJH/CEA)

10:~~00~~ 07 - 10:~~15~~ 29 a.m. ****** BREAK ******

12 ~~10~~) ~~10:15~~ 1:22 - ~~11:30~~ 2:27 pm ~~a.m.~~ — Anticipated ACNW Activities (Open) (DWM/RKM)

2:27 - 2:45 pm * BREAK *

10.1) The Committee will discuss anticipated and proposed Committee activities, future meeting agenda, and organizational matters as appropriate.
- 10.1.1) Set June Agenda
- 10.1.2) Visit to CNWRA (June 26-28, 1991)
- 10.1.3) Meeting with Commission (July 25, 1991)
- 10.1.4) Rulemaking: Transportation Regulation Compatibility with IAEA
- 10.1.5) Working Group on Expert Judgment (June 18-19, 1991)
- 10.1.6) Working Group on Non-reactor Site Cleanups
- 10.1.7) ACNW Staff Research Projects

12:~~00~~ 10 - 1:~~00~~ 22 p.m. ****** LUNCH ******

11 ~~21~~) ~~1:00~~ 10:44 am - 12:10 ~~4:30~~ p.m. & 13) 2:45 - 4:38 p.m. — Preparation of ACNW Reports (Open)

Discuss Proposed ACNW Reports Re:

11.1) Dealing with Uncertainties in Implementation of EPA's HLW Standards (MJS/HJL)

11.2) Need for Revisions to 10 CFR Part 61 Regarding Leachability and Ground-Water Protection (MJS/HJL)

11.3) Response to Commissioner Rogers' April 29, 1991 Memorandum

4:~~30~~ 32 p.m. ****** ADJOURN ******

10:38 Adjourn formal part of meeting.

(8) 10) 10:38 am - 10:44 am Report by ACNW Chairman on his Meeting with F. Congel (NRR) on Airborne Releases from Nuclear Power Plants.

8) 9:~~00~~ 17 - ~~9:30~~ 10:07 a.m. — Report on the Second Annual International High-Level Radioactive Waste Management Conference (Open) (PWP/CEA)

9) ~~9:30~~ 10:29 - 10:~~00~~ 38 a.m. — Report on the Field Trip to Lunar Crater Volcanic Field (Open) (WJH/CEA)

10:~~00~~ 07 - 10:~~15~~ 29 a.m. ****** BREAK ******

See below

10) ~~10:15-11:30 a.m.~~ 1:22 p.m.-2:27 p.m. Anticipated ACNW Activities (Open) (DWM/RKM)

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

Break 2:27 pm - 2:45 pm

- 10.1.1) Set June Agenda
- 10.1.2) Visit to CNWRA (June 26-28, 1991)
- 10.1.3) Meeting with Commission (July 25, 1991)
- 10.1.4) Rulemaking: Transportation Regulation Compatibility with IAEA
- 10.1.5) Working Group on Expert Judgment (June 18-19, 1991)
- 10.1.6) Working Group on Non-reactor Site Cleanups
- 10.1.7) ACNW Staff Research Projects

12:~~00~~ 10 - 1:~~00~~ 22 p.m. ****** LUNCH ******

11) ~~1:00-4:30~~ p.m. Preparation of ACNW Reports (Open)

resumption 2:45 pm - 4:33 pm

Discuss Proposed ACNW Reports Re:

- 11.1) Dealing with Uncertainties in Implementation of EPA's HLW Standards (MJS/HJL)
- 11.2) Need for Revisions to 10 CFR Part 61 Regarding Leachability and Ground-Water Protection (MJS/HJL)
- 11.3) Response to Commissioner Rogers' April 29, 1991 Memorandum

4:33 pm. ~~4:30~~ p.m. ****** ADJOURN ******

10:38 am End of formal session

10:35 - 10:44 am

Report by Chairman Moeller on his meeting with F. Congel (NRR) on airborne releases from nuclear power plants.

10:44 am - 12:10 pm Preparation of ACNW Reports