

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

August 28, 1990

MEMORANDUM FOR: James M. Taylor
Executive Director for Operations

FROM: *Ray Fraley*
Raymond F. Fraley
Executive Director, ACNW

SUBJECT: 22ND ACNW MEETING FOLLOW-UP ITEMS

Based on discussions regarding methods for improved implementation and follow-up of ACNW recommendations, a summary of Actions, Agreements, Assignments, and Requests made during each ACNW meeting will be sent to your office following each meeting.

Attached is a list of the requests made at the 22nd ACNW meeting, July 30-31, 1990.

Those items in the list "Actions, Agreements, Assignments, and Requests" that do not deal with requests made of the NRC Staff or that are not pertinent to NRC Staff activities have not been included in this follow-up list.

Attachment: As stated

cc. H. L. Thompson, EDO
J. L. Blaha, EDO
S. J. Chilk, SECY
E. J. Jordan, AEOD
R. M. Bernero, NMSS
T. E. Murley, NRR
E. S. Beckjord, RES
A. L. Eiss, NMSS
J. Giitter, NRR
M. V. Federline, OCM/KC
J. Kotra, OCM/JC
R. MacDougall, OCM/FR
S. Bilhorn, OCM/KR
M. Weber, OCM/KC

*Q102
11*

ACTIONS, AGREEMENTS, ASSIGNMENTS, AND REQUESTS
22ND ACNW MEETING - JULY 30-31, 1990

REPORTS, LETTERS AND MEMORANDA

1. NRC Staff's Approach for Dealing with Uncertainties in Implementing the EPA HLW Standard (See Attachment 1)

The Committee was briefed by the NRC staff on a draft SECY paper that discusses their approach for dealing with technical and regulatory uncertainties in implementing the EPA HLW standards, 40 CFR Part 191. The Committee and NRC staff also discussed the roles of "expert judgment" and decision analyses in addressing uncertainties. The Committee commented on this draft SECY paper in a letter to Mr. Robert M. Bernero dated August 3, 1990.

2. Decommissioning of the Pathfinder Atomic Power Plant (See Attachment 2)

The Committee was briefed on the NRC staff's findings in their Safety Evaluation Report and Environmental Assessment on the proposed final decommissioning of the fuel handling building and reactor building at the Pathfinder Atomic Power Plant. During the discussion, Dr. Moeller expressed interest in knowing what are the EPA requirements for the disposal of asbestos and can asbestos be buried in a municipal sanitary landfill. The staff agreed to respond to these questions. A report on Pathfinder, dated August 3, 1990, was sent to Chairman Carr.

Future Activities

Appendix A summarizes the tentative agenda items and related Working Group activities that were agreed to for future meetings of the Committee. This list includes items proposed by the Commissioners and NRC staff as well as ACNW members.

3

APPENDIX A. FUTURE AGENDA

August 29-31, 1990

Technical Position on Waste Forms (Revision 1) (Open) - The Committee will be briefed by the NRC staff on modifications to the Draft Branch Technical Position related to the cementation of LLW Waste Forms (Revision 1).

Radioactive Waste Repository Licensing Symposium (Open) - The Committee will prepare a presentation which will be given at the Radioactive Waste Repository Licensing Symposium on September 17-18, 1990 in Washington, D.C. The symposium is being sponsored by the Board on Radioactive Waste Management, National Academy of Sciences.

Proposed Regulatory Guide on the Format and Content for HLW Repository License Applications (Open) - The Committee will be briefed by the NRC staff on the Regulatory Guide on the format and content for HLW repository license applications. The Committee will review this guide prior to the public comment period.

EPA Standards (Open) - The Committee will continue discussion of the EPA standards for high-level radioactive waste disposal in a geologic repository. A status report on Working draft #3 of the standard is expected during this meeting. (Tentative)

Committee Activities (Open) - The Committee will discuss anticipated and proposed Committee activities, four month meeting plan, future meeting agenda, and organizational matters, as appropriate. The Committee will discuss its potential involvement in decommissioning reviews for other than 10 CFR Part 50 licensed facilities.

September 19-20, 1990 (Tentative Agenda)

DOE Study Plans (Open) - The Committee will be briefed on the proposed revisions to current review procedures being used by the NRC staff for its review of DOE study plans associated with the site characterization for the proposed HLW repository. (Tentative, based on receipt of revision of Study Plan Review Plan.)

EPRI's Performance Assessment Methodology for a HLW Site (Open) The Committee will be briefed by representatives of EPRI on the status of the EPRI work on a performance assessment methodology for a HLW repository. The EPRI report on this work is expected to be completed in September 1990 and released in October 1990.

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

Tentative Working Group Meetings (Dates to be determined)

Migration of Carbon-14 (Open) - An ACNW Working Group will be briefed on the potential problems that could arise at a high-level repository as a result of carbon-14 release and migration. This will include a discussion of EPA release limits for this radionuclide. A report to the full Committee will follow.

Human Intrusion (Open) - An ACNW Working Group will examine how human intrusion at a high-level waste repository will be dealt with under 10 CFR Part 60 considerations and guidance from 40 CFR 191 Appendix B. This will include discussion of the WIPP experience and explore a range of views from various groups. A report to the full Committee will follow.

DOE/USGS White Paper (Open) - An ACNW Working Group will have discussions with the NRC staff on the review of and comments on the DOE/USGS white paper on integration of the geophysical aspects of the repository SCP. This report is important as it relates to a major central theme of the SCA comments on integration.

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

August 3, 1990

Mr. Robert M. Bernero, Director
 Office of Nuclear Material Safety
 and Safeguards
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Dear Mr. Bernero:

**SUBJECT: NRC STAFF'S APPROACH FOR DEALING WITH UNCERTAINTIES IN
 IMPLEMENTING THE EPA HLW STANDARD**

During the 22nd meeting of the Advisory Committee on Nuclear Waste, July 30-31, 1990, we met with the NRC staff to review and comment on the subject draft SECY paper (Reference 1). This draft was prepared by the staff in response to a request by the Commission for a "... summary on the staff's current approach to dealing with uncertainties/methodologies in implementing the EPA probabilistic standard so as to avoid [as] many of the controversial aspects as possible."

We believe, for the reasons given below, that the staff's approach is not adequate. We include in this letter specific comments on the draft paper and also provide our comments on other aspects of the staff's role in implementing the EPA Standards.

1. The draft paper describes two parts to the finding of compliance with the EPA Standards. One part deals with the standard of performance and the other with confidence that the standard of performance has been met. The staff has failed, however, to provide an adequate approach for dealing with residual uncertainties that will be encountered in completing this finding. Much of the paper concerns methods for reducing and managing uncertainties related to 10 CFR Part 60 and the potential activities of DOE, but the staff appears to have neglected to develop an adequate approach for dealing with uncertainties inherent in 40 CFR Part 191.
2. The paper acknowledges, albeit in conditional terms, the need for expert judgment, but provides no insight on how the staff will apply this judgment or develop an approach for selecting from among conflicting but apparently equally supported opinions. We believe that expert judgment will be required

~~5448130126~~ 3/10

regardless of the specific form of the final EPA Standards, and thus, the approach to the use of expert judgment in a robust manner is crucial to the quality of the licensing determinations.

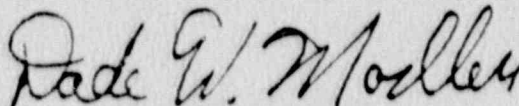
The transcript of the 22nd ACNW meeting contains the details of our discussion with the staff concerning conflicting expert opinions. Our conclusion is that it may not be appropriate to treat discrepancies in expert opinions by using weighted averages unless this process has been carefully analyzed and the limitations of its application to both technology and licensing matters are well defined.

3. The staff has included strategies in the paper such as rule-makings to 10 CFR Part 60 to reduce uncertainties. While it is possible to narrow the technical and regulatory topics so that only fully determinable variables remain to be considered in the licensing process, we believe this tactic is neither likely to be successful nor is it appropriate. The description offered by the staff does not allow insight into the scope or the schedule that the staff strategy would call for, in part because existing rulemaking topics are not in an advanced stage of development. The status and description of rulemaking previously proposed to support the conclusion that the EPA Standards are workable are cast into question as is the ability to bring uncertainties into concert with the use of the HLW probabilistic standards.
4. We were unable to discern the relationship between the draft paper and the content of the related strategy document prepared by the NRC staff (Reference 2). We concluded that an integrated overall strategy and a strategy for devising methods for demonstrating compliance with the EPA Standards are necessary and we urge the staff to develop such an integrated approach for delineation of methods that would demonstrate such compliance. Such an integrated strategy should also address the connection between those activities to be carried out by DOE in response to uncertainties related to 10 CFR Part 60 and the NRC staff activities related to demonstration, by DOE, of compliance with 40 CFR Part 191.
5. The current reevaluation of the EPA Standards, which may include a reformulation of its probabilistic requirements, mandates a reexamination of assumptions about its implementability that were made a number of years ago. This requires prompt attention to the development of a coherent strategy for dealing with the various uncertainties that arise in performance assessment. The staff should be urged to undertake such a development without delay.

August 3, 1990

We conclude that the draft paper should be modified by the staff to include a coherent strategy outline that explicitly addresses the implementation of the EPA Standards and consideration of the associated uncertainties. The modifications should include exposition of the bases on which the strategies are developed, their application to regulatory and technical uncertainties, and a more deliberate discussion of how expert judgment would be applied, evaluated and justified.

Sincerely,



Dade W. Moeller
Chairman

References:

1. Staff's Approach for Dealing With Uncertainties in Implementing the EPA HLW Standards (WITS 8900236), draft SECY paper, undated.
2. SECY-90-207, First Update of the Regulatory Strategy and Schedules for the High-Level Waste Repository Program, dated June 7, 1990.

cc: M. Federline, OCM/KC
M. Weber, OCM/KC
S. Bilhorn, OCM/KR
J. Kotra, OCM/JC
K. Dragonette, OCM/JC
R. MacDougall, OCM/FR
H. Thompson, EDO
R. Browning, NMSS
A. Eiss, NMSS
D. Fehringer, NMSS

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

August 3, 1990

The Honorable Kenneth M. Carr
 Chairman
 U.S. Nuclear Regulatory Commission
 Washington, D.C. 20555

Dear Chairman Carr:

SUBJECT: DECOMMISSIONING OF THE PATHFINDER ATOMIC POWER PLANT

During our 22nd meeting, July 30-31, 1990, the Advisory Committee on Nuclear Waste met with the NRC staff to review plans for the decommissioning of the Pathfinder plant. The Committee had previously commented on this subject in our letter to you on October 18, 1989. Documents utilized in our latest review included the Safety Evaluation Report (SER) and the Environmental Assessment prepared by the NRC staff.

This was the first application for decommissioning of a nuclear power plant that was handled by the Division of Low-Level Waste Management and Decommissioning. This being the case, this is an excellent opportunity for the staff to reevaluate their generic technical guidance for the review and approval of similar applications in the future, as well as procedures for inspection of the decommissioned facilities. This guidance would be particularly helpful in ensuring uniformity in handling such applications.

Because of the low power and limited operating lifetime of this Plant, the associated decommissioning operations cannot be considered comparable to those anticipated for a major nuclear power plant. The same is true for the recent decommissioning of the Shippingport Atomic Power Station. Nonetheless, both of these operations, and the cleanup activities at Three Mile Island, Unit 2, are providing information, guidance and data that will be useful for the future. To this end, we encourage the NRC staff to keep abreast of such activities and to collect and digest the lessons learned.

The stated exposure rate to be attained in decontaminating the buildings and equipment surfaces at the Pathfinder plant is less than 5 μ R/hr, which is comparable to less than 45 mR/yr (assuming continuous exposure). Because this dose rate will be confined to

9408100173 3/10

August 3, 1990

a secured area (with only plant workers having access), we believe it is acceptable. Nonetheless, care should be taken, using realistic exposure scenarios, to ensure that this approach is compatible with the recently issued Policy Statement on Below Regulatory Concern. Included in such an assessment should be a consideration of the half-lives of the principal radionuclides involved.

We believe that the SER provides inadequate attention to the generation, retention, and analysis of liquid wastes. The SER does not appear to accurately reflect the attention directed to this problem by the licensee.

One item that needs to be given greater consideration relative to the potential environmental impacts of the decommissioning operations is groundwater contamination. Specific steps that should be taken include documenting existing groundwater contamination levels and establishing sufficient wells to monitor the possible migration of radionuclides down the hydrologic gradient to other areas. A careful assessment also needs to be made of the potential for transport of radionuclides by groundwater.

Airborne radionuclide releases to the environment which are anticipated during the decommissioning operations are expected to be well within NRC regulatory limits. The licensee, however, had not established a means to provide a written record of such releases. We concur with the NRC staff that the licensee should be required to measure, evaluate and report such releases.

In our letter to you on October 18, 1989, we offered recommendations on five topics that we believed should be given specific attention by the NRC staff in its review of plans for decommissioning the Pathfinder Atomic Plant. Each of these topics has been addressed.

Because of the low radionuclide levels and radiation dose rates involved, there could be a tendency for the licensee (and/or its contractor) to become "relaxed" in their approach to this project. For this reason, we urge that the NRC staff closely monitor the decommissioning to assure that standard operating procedures, including good health physics practices, are observed throughout the operation.

August 3, 1990

Based on our review, and with due consideration to the advice given above, we concur with the NRC staff that this phase of the decommissioning of the Pathfinder Atomic Power Plant can be conducted without undue risk to the public health and safety.

Sincerely,



Dade W. Moeller
Chairman

References:

1. Safety Evaluation Report on Proposed Final Decommissioning of the Fuel Handling Building and Reactor Building at the Pathfinder Generating Plant," License No. 22-08799-02, Docket No. 30-05004, June 1990
2. Environmental Assessment of Proposed Final Decommissioning of the Fuel Handling Building and Reactor Building at the Pathfinder Generating Plant," License No. 22-08799-02, Docket No. 30-05004, June 1990