

August 9, 2000

The Honorable Richard A. Meserve
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: SUMMARY REPORT — 119TH MEETING OF THE ADVISORY COMMITTEE ON
NUCLEAR WASTE ON JUNE 13–15, 2000, AND OTHER RELATED COMMITTEE
ACTIVITIES

Dear Chairman Meserve:

During its 119th meeting on June 13–15, 2000, at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, the Advisory Committee on Nuclear Waste (ACNW or the Committee) discussed several matters and approved the following report: **NRC Evaluation of DOE's Site Recommendation Considerations Report** (Report to Dr. William D. Travers, Executive Director for Operations, NRC, from B. John Garrick, Chairman, ACNW, June 29, 2000).

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Planning and Procedures

The ACNW approved several topics to be considered during the 120th ACNW meeting on July 25–27, 2000, to be held in Rockville, Maryland. Topics discussed included the following:

- Presentation by the NRC staff on its response to public comments on the “Guidelines for Performance-Based Activities.” The NRC staff will explain its approach to developing performance-based regulations consistent with Commission direction.
- A comprehensive overview of decommissioning activities, including the decommissioning of Site Decommissioning Management Plan sites, other complex sites, and commercial reactors. The NRC staff is expected to provide current schedules for the cleanup of all decommissioning sites.
- A briefing by Department of Energy (DOE) staff on the details of its performance confirmation program.
- An update of the key technical issue (KTI) resolution strategy and the results of recent interactions with DOE.

- A review of a project by NRC's Office of Nuclear Regulatory Research on hydrogeologic model development and parameter uncertainty.
- Preparation for the next public meeting with the Commission. The meeting is tentatively scheduled for October 17, 2000. The Committee will discuss planned reports, including reports on the development of a Yucca Mountain Review Plan (YMRP) and 10 CFR Part 63 involving disposal of high-level radioactive waste (HLW) in a proposed geologic repository at Yucca Mountain, Nevada; highlights of the Committee's recent European trip; risk-informed regulation in the Office of Nuclear Material Safety and Safeguards (NMSS); and comments on the staff's Yucca Mountain Site Sufficiency Strategy.
- A discussion of current regulatory issues by the NRC's Deputy Director of the Office of Nuclear Material Safety and Safeguards.
- Preparation of ACNW reports on risk-informed approaches to nuclear materials regulatory applications, comments on the low-level waste (LLW) NUREG report on performance assessment, highlights of the ACNW's visit to the United Kingdom and France, and a response to Executive Director for Operation's comments on the ACNW Action Plan.

2. Low-Level Waste Branch Technical Position on Performance Assessment

The NRC staff presented the draft final version of "A Performance Assessment Methodology for Low-Level Radioactive Waste Disposal Facilities: Recommendations of NRC's Performance Assessment Working Group," NUREG-1573, to the ACNW. The staff also summarized the approaches and methodologies recommended in the NUREG [formerly designated a branch technical position (BTP)], provided a summary of public comments, and discussed the key technical policy issues in the NUREG. The Committee discussed a number of issues and approaches in the NUREG with the staff.

Conclusions/Action Items

The ACNW will provide comments and make recommendations on the final document in a letter to the Commission.

3. West Valley Policy

Jack D. Parrott, DWM, NMSS, briefed the Committee on the NRC's draft policy statement announcing that the decommissioning criteria the NRC will apply to the West Valley Demonstration Project (WVDP) and the West Valley Site in western New York State will be those specified in the NRC license termination rule, Subpart E of 10 CFR Part 20. West Valley personnel from the New York State Energy Research and Development Authority (NYSERDA) and the DOE participated in this part of the ACNW meeting by video teleconferencing from West Valley. Mr. Parrott gave a summary of the draft policy statement and the NRC's schedule for responding to public comments. A final policy statement is scheduled to be published by December 2000. Elizabeth A. Lowes, DOE's Acting Director of the WVDP, read a prepared statement to the ACNW summarizing DOE's public comment on the draft policy

statement. She recommended that rather than following the draft policy statement, the NRC should follow a process in which DOE would first perform an analysis of impacts and risks of potential disposition modes, and then, upon receipt of the analysis, NRC would prescribe decontamination and decommissioning criteria.

Conclusions/Action Items

The ACNW will continue to follow the issues associated with West Valley.

4. ACNW Site Suitability and License Application — Task Action Plan

Lynn Deering, ACNW staff, presented a proposed strategy for the ACNW to review and oversee DOE's Site Recommendation Considerations Report (SRCR) and the NRC's sufficiency review of the DOE's SRCR. These activities are identified as tier one priorities in the ACNW's Action Plan for 2000. Ms. Deering described the purpose and scope of the ACNW's review of the SRCR and NRC's sufficiency review, the desired outcome, related ACNW activities, information, responsibilities, products, and schedules. Ms. Deering noted that her objective was to obtain agreement from the ACNW members on the proposed approach, assignments, and schedules outlined in the strategy. The ACNW anticipates that the Commission will request that the ACNW conduct an independent review of DOE's SRCR. The ACNW will evaluate whether the NRC staff's sufficiency comments are logical, defensible, and focused on the most risk-significant issues and whether the staff has a logical, defensible, risk-informed, performance-based basis for its findings that are linked to safety. Further, the ACNW will bring to the Commission's attention any vulnerabilities in the staff's capability, guidance, or other tools for reviewing a license application for Yucca Mountain, as well as strengths.

The scope of the ACNW's review includes reviewing portions of the SRCR, which is expected to be submitted in December 2000, as well as technical basis documents, including the repository safety strategy (RSS), the site recommendation (SR) design document, the total system performance assessment (TSPA) SR, selected process model reports (PMRs), analysis model reports (AMRs), issue resolution status reports, NRC's Revision 1 of the YMRP, and the NRC's Total System Performance Assessment 4 code.

Ms. Deering proposed a list of high-, medium-, and low-priority PMRs and areas of responsibility for ACNW members and staff, as well as a proposed schedule, and requested that the ACNW members review the draft Task Action Plan describing the proposed strategy and approve the strategy, schedules, and assignments.

Conclusions/Action Items

The ACNW agreed to review the document and provide its comments. Ms. Deering agreed to revise the draft document and provide a revision for the next meeting.

5. Proposed Yucca Mountain Repository Design Features

Representatives from DOE discussed the current design status for the proposed HLW repository at Yucca Mountain. The latest engineering changes include the removal of backfill, redesign of the titanium drip shields, changes in the waste package design, addition of placement pallets for the waste packages, increased preclosure ventilation, and provision for eight empty drifts for ventilation and standby use. The rationales for these changes were discussed with the Committee.

Conclusions/Action Items

This was an information briefing, and no action is anticipated at this time.

6. Department of Energy's Repository Safety Strategy

Dr. Jack Bailey, DOE's Management and Operating Contractor, briefed the ACNW on Revision 4 of DOE's evolving RSS. That revision of the RSS is due to be issued in August 2000. The RSS formulation is an iterative process, which involves defining the repository system characteristics, including defining hazards for preclosure and performance in postclosure, comparing the results with the standards, assessing uncertainties, assessing information needs, defining safety case requirements, and finally, defining what new information is needed. If necessary, the design will be modified and/or models updated. The RSS identifies principal factors for determining safety and relies on performance assessment and performance measures to increase overall confidence in safety.

The RSS has evolved as the program has moved from the viability assessment to design selection to the license application. Mr. Bailey reviewed the principal factors, performance assessment, and measures to increase confidence in postclosure safety for Revisions 2, 3, and 4 of the RSS. For Revision 4, the principal factors were developed using a risk-informed, performance-based approach, and for the first time, a full evaluation of features, events, and processes was performed. The total system performance assessment relied upon incorporating the updated PMRs and AMRs, an analysis of the range of uncertainties, and both nominal and igneous activity scenarios. The measures to increase confidence consist of a full evaluation of safety margins and defense in depth, as well as Revision 1 of the performance confirmation plan.

Mr. Bailey discussed the relationship between the RSS and KTIs, noting that several KTI subissues are closely linked to principal factors based on sensitivity analyses, while other subissues are less significant to repository performance. DOE plans to focus its remaining work on reducing uncertainties in areas closely linked to performance (principal factors) that will bound performance in other areas, and the information provided for that subissue will reflect the importance of that subissue to the safety case.

Conclusions/Action Items

The ACNW will review Revision 4 when it is issued and will decide at that time whether to prepare a letter to the Commission.

7. Status of the Nuclear Regulatory Commission Low-Level Waste Program

Mr. Tom Essig, Chief of the Environmental and Performance Assessment Branch, NMSS, gave the Committee an overview of the current status of national LLW-related activities, as well as a review of activities associated with the NRC LLW program. He was assisted in his presentation and in responding to ACNW members' questions by Mr. James Kennedy.

After reviewing the status of the national LLW program regarding both existing and planned State, Compact, and private facilities, Mr. Essig discussed in some detail the current NRC LLW program budgeted activities. He noted the following planned and in-progress activities in the discussion:

1. Publish performance assessment guidance.
2. Respond to State requests for assistance.
3. Review onsite disposal requests and import/export applications.
4. Coordinate with the Environmental Protection Agency on mixed-waste issues and rulemakings.
5. Develop a rule for greater than Class C storage at nuclear power plant dry storage facilities (independent spent fuel storage installations).
6. Participate in Integrated Materials Performance Evaluation Program reviews, as well as support other agency programs on LLW disposal issues.

Mr. Kennedy discussed several alternatives to 10 CFR Part 61 disposal currently under varying degrees of consideration, namely, nuclear power reactor entombment, rubbleization, "assured isolation" facilities, clearance of solid materials, issues associated with the Formerly Utilized Sites Remedial Action Program, and so on. These topics generated considerable discussion.

Also of interest to the Committee was a graphic comparing the radioactivity levels in various classes of LLW, which gave rise to a perception of inconsistency in the various regulations with regard to providing similar levels of public protection. The identification and integration of research needs and projects were also questioned.

Conclusions/Action Items

The Committee indicated that it appreciated the update and was looking forward to participating in the resolution of several of the identified alternatives to 10 CFR Part 61 facilities (such as assured isolation facilities, rubbleization, entombment of nuclear power reactors, clearance of solid materials, et al.).

8. Meeting With the Director of the Division of Waste Management, Office of Nuclear Material Safety and Safeguards

John Greeves, Director of DWM, and representatives from his staff briefed the Committee on current items of mutual interest. The staff covered issues relating to decommissioning, LLW, and the HLW programs.

Conclusions/Action Items

This was a regularly scheduled information exchange.

9. Draft Guide 1067, "Decommissioning of Nuclear Power Reactors," and Draft Guide 1071, "Standard Format and Content for Post-Shutdown Decommissioning Activities"

The ACNW heard a presentation by the NRC staff on two draft regulatory guides, DG-1067, "Decommissioning of Nuclear Power Reactors," and DG-1071, "Standard Format and Content for Post-Shutdown Decommissioning Activities."

Conclusions/Action Items

The Committee authorized a memorandum from the Executive Director, ACNW, stating that the Committee has no objection to the staff's issuance of these regulatory guides.

10. Election of Officers

The Committee re-elected Dr. B. John Garrick as Chairman and Dr. George M. Hornberger as Vice-Chairman. Their terms of office run from July 1, 2000, through June 30, 2001.

Sincerely,

/RA/

B. John Garrick
Chairman