

July 7, 2000

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

SUBJECT: SUMMARY REPORT - 473rd MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS, ON JUNE 7-9,
2000, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

Dear Chairman Meserve:

During its 473rd meeting June 7-9, 2000, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report and letters. In addition, the Committee authorized Dr. Larkins, Executive Director of the ACRS, to transmit the memoranda noted below.

REPORT

- Proposed Resolution of Generic Safety Issue 173A, "Spent Fuel Storage Pool for Operating Facilities" (Report to Richard A. Meserve, Chairman, NRC, from Dana A. Powers, Chairman, ACRS, dated June 20, 2000)

LETTERS

- Proposed Final Regulatory Guide and Standard Review Plan Section Associated with the Alternative Source Term Rule (Letter to William D. Travers, Executive Director for Operations, NRC, from Dana A. Powers, Chairman, ACRS, dated June 20, 2000)
- Draft Report, "Regulatory Effectiveness of the Station Blackout Rule" (Letter to William D. Travers, Executive Director for Operations, NRC, from Dana A. Powers, Chairman, ACRS, dated June 22, 2000)

MEMORANDA

- Industry Initiatives in the Regulatory Process (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated June 12, 2000)

- AP1000 Pre-Application Review (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated June 21, 2000)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Proposed Resolution of Generic Safety Issue-173A, "Spent Fuel Storage Pool for Operating Facilities"

The Committee heard presentations by and held discussions with representatives of the NRC staff concerning Generic Safety Issue (GSI) 173A. The NRC staff developed a generic action plan for ensuring the safety of spent fuel storage pools in response to two postulated event sequences at two separate plants (Susquehanna and Dresden 1). The principal concerns addressed by the action plan involve the potential for a sustained loss of spent fuel pool cooling and the potential for a substantial loss of spent fuel pool coolant inventory. The action plan also included plant-specific evaluations and regulatory analyses for safety enhancement backfits for plants that are more vulnerable to the GSI-173A concerns.

Conclusion

The Committee issued a report on this matter to Chairman Meserve, dated June 20, 2000.

2. Regulatory Effectiveness of the Station Blackout Rule

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding the draft report concerning the regulatory effectiveness of the station blackout (SBO) rule.

The NRC staff presented background information on the SBO rule. The staff discussed the draft report on the "Regulatory Effectiveness of the Station Blackout Rule," which has been issued for public comment. This report reflects the comments made by NRR and the regions. The draft report was provided to the Nuclear Energy Institute (NEI) for comment. The staff stated that the lesson learned from the evaluation of the SBO rule is that regulatory documents have to be reviewed more carefully for consistent interpretation of terms, goals, criteria, and measurements. The draft report concluded that the SBO rule was effective and that industry and NRC resources spent to implement the SBO rule were reasonable.

Conclusion

The Committee issued a letter on this matter to Dr. William D. Travers, Executive Director for Operations, on June 22, 2000.

3. Proposed Final Standard Review Plan Section and Regulatory Guide Associated With the Revised Source Term Rule

The Committee heard a presentation by and held discussions with representatives of the NRC staff regarding the proposed final version of Regulatory Guide 1.XXX (DG-1081), "Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Plants," and Standard Review Plan, Section 15.0.1, "Radiological Consequences Analysis Using Alternative Source Terms." NRC released these documents for public comment in December 1999. More than 130 comments were received. In response to the public comments, the staff revised DG-1081 relative to fuel gap fraction assumptions, the chemical form for fuel-handling accident calculations, selective implementation processes, and guidance for use of 10 CFR 50.59, along with other technical modifications. Changes were also made to the final version of the regulatory guide in response to the Committee's formal comments on the draft document.

Conclusion

The Committee issued a report on this matter to the Executive Director for Operations dated June 20, 2000.

4. Assessment of the Quality of Probabilistic Risk Assessments

The Committee heard presentations by and held discussions with representatives of the NRC staff and NEI concerning the staff's plans for addressing the issue of probabilistic risk assessment (PRA) quality until the American Society of Mechanical Engineers (ASME) and the American Nuclear Society (ANS) standards have been completed. The Committee discussed the schedule for and the status of the ASME and ANS standards development efforts, as well as staff plans to review the subject documents when they are available. The staff highlighted plans to develop guidance on what the staff considers to be technical elements and characteristics of a robust PRA. The staff also discussed plans to clarify the level of analysis and/or performance that might be expected for various applications and the role of the expert panel in risk-informed decisionmaking. The Committee considered NEI's plans to develop an industry-wide PRA certification

process guideline to integrate the initiatives of the various Nuclear Steam Supply System Owners Groups.

Conclusion

The Committee decided to continue its review of this matter during the July 2000 ACRS meeting when the staff's draft Commission paper and the proposed NEI guideline are expected to be available.

5. Performance-Based Regulatory Initiatives

The Committee heard presentations by and held discussions with representatives of the NRC staff concerning the proposed high-level guidelines for performance-based activities. The Committee considered the staff's actions to solicit internal and external stakeholder input in response to the Staff Requirements Memorandum dated September 13, 1999. The Committee and the staff discussed the relationship between the proposed guidelines and the Commission's White Paper on risk-informed, performance-based regulation (SECY-98-144) and the PRA Policy Statement. The Committee considered the revised guidelines issued for public comment on May 9, 2000, including the questions and proposed reconciliation of past comments. The Committee and the staff discussed the possible use of these guidelines in revising regulations to make them performance-based and in considering possible performance-based approaches to meet existing regulatory requirements.

The Committee also met with a representative of Public Citizen, Critical Mass Energy Project, to discuss this matter. The concerns expressed by the Public Citizen representatives were that the staff dismissed public comments without proper consideration, the proposed guidelines would erode regulatory conservatism and plant safety margins, the guidelines focus on economic efficiency rather than safety performance, and implementation of these guidelines would weaken public confidence. The Committee will consider these concerns.

Conclusion

The Committee decided to continue its review of this matter during the July 2000 ACRS meeting when the staff's draft Commission paper is expected to be available.

6. Use of Industry Initiatives in the Regulatory Process

The Committee heard presentations by and held discussions with representatives of the NRC staff and the NEI regarding a proposed Commission paper concerning proposed guidelines for using industry initiatives in the regulatory process. The ACRS members, the staff, and NEI representatives discussed whether the guidelines would impose additional burden on the industry, the steps in the proposed process, and the enforcement of plant-specific commitments associated with industry initiatives.

Conclusion

The Committee authorized the ACRS Executive Director to provide a memorandum to the NRC Executive Director for Operations dated June 12, 2000, stating that the ACRS had no objection to issuing these guidelines for public comment and requested the opportunity to review the proposed final guidelines after resolution of public comments.

7. Safety Culture at Operating Nuclear Power Plants

The Committee heard a presentation by and held discussions with Mr. John Sorensen, an ACRS Fellow, regarding a paper he was preparing concerning safety culture at operating nuclear power plants. He explained what safety culture is, why it is important, and what the NRC staff could do to support it. Mr. Sorensen recommended that the staff identify the essential attributes of safety culture and the associated performance indicators, and ensure that licensees maintain effective root cause analysis processes.

The ACRS members and Mr. Sorensen discussed the use of alternative phrases, such as general culture and quality culture, the correlation between safety culture and potential performance indicators, how to teach and inspect the elements of safety culture, and the importance of a risk-informed, performance-based regulatory system.

Conclusion

The Committee decided to consider preparation of a report to the Commission concerning this matter during the ACRS meeting on July 12-14, 2000.

8. Visit to Davis-Besse Nuclear Power Plant and Meeting With NRC Region III Plant Personnel

The Committee heard a presentation by and held discussions with Mr. Amarjit Singh, an ACRS Senior Staff Engineer, regarding the proposed schedule for touring the Davis-Besse Nuclear Power Plant, the specific areas to be visited, and the proposed topics of discussion with representatives of the licensee and the NRC Region III office. Mr. Singh presented the background information, current operating issues, and the results of the maintenance rule inspection at Davis-Besse. The topics of discussion with Region III representatives included regional organization, reactor program implementation, the new oversight inspection program, the senior reactor analyst program, and other fire protection related issues.

Conclusion

This briefing was held for information only. No Committee action is required.

9. Proposed Plan and Assignments for Reviewing License Renewal Guidance Documents

The Committee heard a presentation by Dr. Bonaca, Chairman of the Plant License Renewal Subcommittee, concerning plans for the ACRS to review license renewal guidance documents and ACRS member assignments for reviewing these documents. Dr. Bonaca outlined the scoping and screening processes used for identifying systems and components subject to aging management programs. He explained how the proposed generic aging lessons learned report would be used as a reference for aging management programs acceptable to the staff. The Committee discussed and revised proposed items that would be used to focus its review.

Conclusion

The Committee decided to hear a briefing from the staff at the ACRS meeting on August 30-September 1, 2000, concerning an overview of the proposed license renewal guidance documents.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee discussed the response from the NRC Executive Director for Operations (EDO) dated May 26, 2000, to the ACRS comments and recommendations included in the ACRS report dated April 13, 2000, concerning

the draft final technical study of spent fuel pool accident risk at decommissioning nuclear power plants.

As a result of the ACRS comments and recommendations, the staff has defined additional technical work that needed to be performed and included in the final report. The Committee plans to review and comment on the final report.

- The Committee discussed the response from the EDO, dated May 26, 2000, to ACRS comments and recommendations included in the ACRS report dated April 13, 2000, concerning the NRC program for risk-based analysis of reactor operating experience.

The Committee decided that it was satisfied with the EDO's response.

- The Committee discussed the response from the EDO dated May 12, 2000, to ACRS comments and recommendations included in its letter dated April 17, 2000, concerning the Commission's Reactor Safety Goal Policy Statement

The Committee decided that it was satisfied with the EDO response.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from May 11 through June 6, 2000, the following Subcommittee meetings were held:

C Planning and Procedures - June 6, 2000

The Planning and Procedures Subcommittee discussed proposed ACRS activities, practices, and procedures for conducting Committee business and organizational and personnel matters relating to ACRS and its staff.

LIST OF FOLLOW-UP MATTERS FOR THE EXECUTIVE DIRECTOR FOR OPERATIONS

- The Committee decided to continue its review of the staff's plan for addressing the issue of PRA quality during the July 2000 ACRS meeting when the staff's draft Commission paper and the proposed NEI guideline are expected to be available.
- The Committee decided to continue its review of the staff's proposed high-level guidelines for performance-based activities during the July 2000 ACRS meeting when the staff's draft Commission paper is expected to be available.

- The ACRS/ACNW Joint Subcommittee plans to continue its review of risk-informed regulatory initiatives in NMSS. The Joint Subcommittee decided to review the technical merits of Integrated Safety Assessments (ISAs) during a future meeting.
- The Committee decided to consider preparation of a report to the Commission concerning safety culture in nuclear power plants during the July 12-14, 2000 ACRS meeting.
- The Committee decided to hear a briefing from the staff at the August 30 - September 2000 ACRS meeting concerning an overview of the proposed license renewal guidance documents.
- The Committee had no objection to issuing the NRC staff's guidelines for using industry initiatives in the regulatory process for public comment and would like the opportunity to review the proposed final guidelines after resolution of public comments.

PROPOSED SCHEDULE FOR THE 474th ACRS MEETING

The Committee agreed to consider the following topics during the 474th ACRS Meeting, July 12-14, 2000:

Activities Associated with Risk-Informing 10 CFR Part 50

Briefing by and discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI) regarding: (a) proposed revision to 10 CFR 50.44 concerning combustible gas control systems and advance notice of proposed rulemaking (10 CFR 50.69 and Appendix T); and (b) NEI letter dated January 19, 2000.

Assessment of the Quality of the Probabilistic Risk Assessments

Briefing by and discussions with representatives of the NRC staff regarding a draft Commission paper on the assessment of the quality of probabilistic risk assessments (PRAs).

Proposed Final ASME Standard for PRA Quality

Briefing by and discussions with representatives of the American Society of Mechanical Engineers (ASME) regarding the proposed final ASME Standard for PRA quality.

Annual Report to the Commission on the NRC Safety Research Program

Discussion of the format and content of the annual ACRS report to the Commission on the NRC Safety Research Program.

Topics for Meeting with the NRC Commissioners on October 5, 2000

Discussion of topics for meeting with the Commissioners scheduled for October 5, 2000.

Sincerely,

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Dana A. Powers
Chairman