

June 11, 2001

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

Dear Chairman Meserve:

SUBJECT: SUMMARY REPORT - 482nd MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS, MAY 10-11, 2001
AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 482nd meeting, May 10-11, 2001, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report and letter. In addition, the Committee authorized Dr. John T. Larkins, Executive Director, ACRS, to transmit the memorandum noted below:

REPORT

- Report on the Safety Aspects of the License Renewal Application for Arkansas Nuclear One, Unit 1 (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated May 18, 2001)

LETTER

- Proposed Final Management Directive 6.4, "Generic Issue Program" (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated May 18, 2001)

MEMORANDUM

- Proposed Final Rulemaking to Amend 10 CFR Part 55 and Associated Regulatory Guide 1.149, Revision 3 (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated May 15, 2001)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Final Review of the License Renewal Application for Arkansas Nuclear One (ANO), Unit 1

The Committee heard presentations by and held discussions with representatives of the NRC staff and the Entergy Operations, Inc. regarding the license renewal application for ANO, Unit 1 and the associated staff's final safety evaluation report (SER).

Representatives of Entergy described the scoping and screening processes as well as the aging management programs. The aging management programs include 22 existing or modified programs and 7 new programs. Since ANO, Unit 1 license renewal application utilized a number of lessons learned from Oconee and the industry, the number of open items and the staff's request for additional information have been significantly reduced. This resulted in completing the staff's review of the ANO, Unit 1 application well ahead of the schedule. Representatives of the NRC staff described the resolution of the 6 open items that were identified in the draft SER. Also, they discussed the time-limited aging analyses, one time inspections, and the adequacy of the aging management programs. The Committee, staff, and the applicant discussed the adequacy of the programs to address the potential for circumferential cracking in control rod drive mechanism nozzle presentations, such as has been observed at Oconee, Unit 3.

Committee Action

The Committee issued a report to Chairman Meserve on this matter dated May 18, 2001.

2. Commission Meeting on the Office of Nuclear Regulatory Research Programs and Performance

The Commission held a meeting on May 10, 2001 with stakeholders to discuss the Office of Nuclear Regulatory Research (RES) programs and performance. Participants included Drs. Dana A. Powers and Graham B. Wallis (ACRS), Dr. Kenneth Rogers (Chairman of Expert Panel), Mr. Harold B. Ray, Dr. Thomas Murley, Mr. Shane Johnson (DOE), Mr. Ashok C. Thadani (RES), and Dr. Edward Lyman (Nuclear Control Institute).

Dr. Powers discussed some of the highlights of the 2001 ACRS report regarding the NRC Safety Research Program. He noted that the objectives of the ACRS report were to identify new research directions to better help the NRC meet its mission obligations

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and to examine the ongoing research programs. Some of the future research directions include challenges such as risk-informing the license renewal rule, performance-based fire protection, pressurized thermal shock issues, new technologies for existing plants, extended fuel burnup, mixed-oxide fuel, and new reactor technologies.

Dr. Powers stated that there are well organized and well conducted research programs such as thermal-hydraulics, fuel, environmentally assisted cracking, and pressurized thermal shock. There are also excellent research plans for fire protection research, digital instrumentation and control, and analysis and evaluation of operational data. However, there are areas that need to be strengthened such as the scope and depth of probabilistic risk assessment (PRA) capabilities, the dissemination of PRA technologies to the line organizations and the Regions, and the human factors and human reliability research.

Conclusion

This briefing was for information only. The Commission commended the ACRS, both for its effort relative to evaluation of the NRC research program and the resulting ACRS report.

3. Risk-Based Performance Indicators

The Committee heard presentations by and held discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI) concerning the results of the staff's Phase 1 effort to develop risk-based performance indicators (RBPIs). The Committee discussed the relationship between RBPIs and the reactor oversight process (ROP), consideration of uncertainty in evaluating candidate performance indicators, issues associated with making RBPIs plant-specific, alternative approaches to RBPI determination, and configuration-based indicators for low-power and shutdown operations. The Committee also discussed possible use of a pilot program to test RBPIs for use in the ROP and the computer code SAPHIRE associated with Standardized Plant Analysis Risk (SPAR) Models.

Conclusion

The Committee plans to prepare a report on this matter during its 483rd meeting, June 6-8, 2001.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee discussed the response from the EDO, dated April 12, 2001, to ACRS comments and recommendations included in the ACRS letter dated March 15, 2001, concerning the Committee's on-going review of the Electric Power Research Institute RETRAN-3D Thermal-Hydraulic Transient Analysis Code.

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

- The Committee discussed the response from the EDO, dated April 12, 2001, to ACRS comments and recommendations included in the ACRS report dated January 11, 2001, concerning Issues Associated with Industry-Developed Thermal-Hydraulic Codes.

The Committee was not satisfied with certain aspects of the EDO's response. A Preliminary discussions on a response to the EDO were held during this meeting and will be continued during the June ACRS Meeting.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from April 5, 2001, through May 9, 2001, the following Subcommittee meetings were held:

- Reliability and Probabilistic Risk Assessment - April 17, 2001

The Subcommittee discussed the results of the staff's Phase 1 development of risk-based performance indicators for reactors, and related matters.

- Plant Operations - May 9, 2001

The Subcommittee discussed the Reactor Oversight Process excluding the Action Matrix.

- Planning and Procedures - May 9, 2001

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.

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LIST OF MATTERS FOR THE ATTENTION OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

- The Committee will continue discussion of a letter of response to the EDO during its June 2001 meeting regarding the EDO's letter of response to the ACRS report concerning Issues Associated with Industry-Developed Thermal-Hydraulic Codes.
- The Committee will be briefed on the issue of potential margin reductions associated with significant core power uprates during its June meeting. In addition, a Subcommittee meeting will be held on June 12, 2001 to continue discussion of issues associated with core power uprates. Committee comments on this matter may be provided during its July meeting.
- The Committee decided that no EDO response was needed for the ACRS letter on Proposed Final Management Directive 6.4, "Generic Issue Program," dated May 18, 2001.

PROPOSED SCHEDULE FOR THE 483rd ACRS MEETING

The Committee agreed to consider the following topics during the 483rd ACRS meeting, June 6-8, 2001:

Proposed Risk-Informed Revisions to 10 CFR 50.46 and Proposed Revisions to the Framework for Risk-Informing the Technical Requirements of 10 CFR Part 50

Briefing by and discussions with representatives of the NRC staff regarding the status of staff activities associated with the proposed risk-informed revisions to 10 CFR 50.46, "Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors," and proposed revisions to the framework for risk-informing the technical requirements of 10 CFR Part 50.

Potential Margin Reductions Associated with Power Uprates

Briefing by and discussions with Dr. A. W. Cronenberg, ACRS Senior Fellow, regarding his views on the adequacy of the staff's review process for power uprates and potential safety margin reductions associated with power uprates.

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Draft Final Safety Evaluation Report for the South Texas Project Nuclear Operating Company (STPNOC) Request to Exclude Certain Components from the Scope of Special Treatment Requirements Required by Regulations

Briefing by and discussions with representatives of the NRC staff regarding the draft final Safety Evaluation Report on the STPNOC exemption request.

Discussion of General Design Criteria

Briefing by and discussions with Mr. Sorensen, ACRS Senior Fellow, regarding his views on risk-informing General Design Criteria included in Appendix A to 10 CFR Part 50.

Need to Revise 10 CFR Part 54, "Requirements for Renewal of Operating Licenses for Nuclear Power Plants"

Discussion by the ACRS members on the need for revising 10 CFR Part 54.

Regulatory Challenges for Advanced Power Reactors

Discussion of follow-up matters resulting from the June 4-5, 2001 Workshop of the ACRS Subcommittee on Advanced Reactors and development of a course of action for dealing with these matters in the future.

Arrangements for the Visit to the Waterford Plant and Region IV Office

Discussion of arrangements and logistics for the June 27-28, 2001 visit to the Waterford Plant and NRC Region IV Office.

Meeting with NRC Commissioner Dicus

The Committee will meet with Commissioner Dicus to discuss items of mutual interest.

Sincerely,

/RA/

George E. Apostolakis
Chairman