

March 12, 2002

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

Dear Chairman Meserve:

SUBJECT: SUMMARY REPORT - 489th MEETING OF THE ADVISORY
COMMITTEE ON REACTOR SAFEGUARDS, FEBRUARY 7-8,
2002, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 489th meeting, February 7-8, 2002, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report and letters. In addition, the Committee authorized Dr. John T. Larkins, Executive Director, ACRS, to transmit the memorandum noted below:

REPORT

- Review and Evaluation of the Nuclear Regulatory Commission's Safety Research Program (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated February 14, 2002)

LETTERS

- The Revised Reactor Oversight Process (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated February 13, 2002)
- Reevaluation of the Technical Basis for the Pressurized Thermal Shock Rule (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated February 14, 2002)

MEMORANDUM

- Proposed Amendment to 10 CFR 50.55a to Incorporate by Reference ASME Boiler and Pressure Vessel and OM Code Cases (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated February 12, 2002)

HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

1. Risk-Informed Regulation Implementation Plan

The Committee heard presentations by and held discussions with representatives of the NRC staff concerning SECY-01-0218, "Update of the Risk-Informed Regulation Implementation Plan." The staff discussed the status of selected risk-informed activities and the relationship between the Implementation Plan and "Performance Goals" of the NRC Strategic Plan in the Strategic Arenas for nuclear reactor safety, nuclear materials safety, and nuclear waste safety. The staff presented its prioritization process and discussed efforts to identify additional activities to be risk-informed. The staff also discussed efforts to apply planning, budgeting, and performance management (PBPM) to establish priority rankings for the various arena activities.

Committee Action

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

2. Meeting with the EDO and the Office Directors of NRR, NMSS, and RES

The ACRS and ACNW members met with the NRC Executive Director for Operations (EDO), Directors of the Office of Nuclear Reactor Regulation (NRR), Office of Nuclear Material Safety and Safeguards (NMSS), and Office of Nuclear Regulatory Research (RES) to discuss several items of mutual interest, including: initiatives associated with risk-informing NMSS activities; issues associated with core power uprates; risk-informed and performance-based regulatory approach; activities associated with future plant designs; and ongoing and proposed research activities.

Committee Action

Since this meeting was beneficial to all parties involved, the ACRS and ACNW plan to schedule such meetings periodically in coordination with the EDO and the Directors of NRR, NMSS, and RES.

3. Proposed Final Revision to Regulatory Guide 1.174 and SRP Chapter 19

The Committee heard presentations by and held discussions with representatives of the NRC staff concerning status of staff efforts to address probabilistic risk assessment (PRA) quality in regulatory activities. The staff presented its updated approach to

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revising Regulatory Guide 1.174 for the use of risk-information in license amendment reviews. The staff plans to develop a new regulatory guide, separate from Regulatory Guide 1.174, to collectively address matters related to PRA quality. The staff plans to endorse industrial standards under development by the American Society of Mechanical Engineers (ASME) and American Nuclear Society (ANS) with exceptions and clarifications, as appropriate. The staff also discussed plans to consider the results of industry PRA peer reviews conducted in accordance with NEI 00-02. The staff proposes to incorporate and/or reference information from other related documents on PRA quality (SECY-00-0162), to develop a PRA data handbook, and to revise NUREG/CR-6595 on large early release frequency.

Committee Action

This briefing was for information only. The Committee plans to continue its review of this matter during future meetings.

4. PTS Technical Bases Reevaluation Project

The Committee heard presentations by and held discussions with the NRC staff regarding the Pressurized Thermal Shock (PTS) Technical Basis Reevaluation Project. The staff provided the status of the Project and presented the initial results of the analysis of the failure frequency of the Oconee Unit 1 reactor pressure vessel. The ACRS members and the staff discussed the treatment of uncertainties, validation of the RELAP5 code for PTS events, elimination of main steamline break scenarios, verification of human reliability analysis results, and variance narrowing associated with histogram sampling.

Committee Action

The Committee provided a letter to the Executive Director of Operations on this matter, dated February 14, 2002.

5. Thermal-Hydraulic Phenomena Subcommittee Report

The Committee heard a report by the Chairman of the Thermal-Hydraulic Phenomena Subcommittee regarding issues discussed at its January 16-18, 2002 meeting. The Subcommittee heard presentations from the GE Nuclear Energy and the NRC staff regarding the staff's review of the GE Licensing Topical Report, "Constant Pressure Power Uprate" (CPPU), and heard presentations from Framatome ANP Richland and the

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NRC staff relative to the staff's review of the Framatome S-RELAP5 realistic thermal-hydraulic code version and its application to PWR large-break LOCA analysis.

Committee Action

The Committee has scheduled review of the GE CPPU Topical Report during its April Meeting, subsequent to issuance of the NRC staff's Safety Evaluation on this matter. Committee review of the Framatome S-RELAP5 code is expected to occur later this year, following issuance of the NRC staff's Safety Evaluation.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee discussed the response from the Executive Director for Operations (EDO) dated December 18, 2001, to the ACRS comments and recommendations included in the ACRS report dated November 16, 2001, concerning the safety aspects of the license renewal application for the Edwin I. Hatch Nuclear Plant, Units 1 and 2.

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

- The Committee discussed the response from the EDO dated January 24, 2002, to the ACRS comments and recommendations included in the ACRS letter December 14, 2001, concerning the proposed steam generator program guidelines and associated generic license change package.

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

- The Committee discussed the response from the EDO dated January 18, 2002, to the ACRS comments and recommendations included in the ACRS report dated November 18, 2001, concerning the NRC Action Plan to address the differing professional opinion issues on steam generator tube integrity.

The Committee plans to review the resolution of the NRC Action Plan items when they become available.

- The Committee considered the response from the EDO, dated February 1, 2002, to comments and recommendations included in the ACRS reports dated October 17 and December 12, 2001, concerning applications for core power uprates for the Duane Arnold Energy Center and the Dresden and Quad Cities Nuclear Power Plants, respectively.

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

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- The Committee considered the response from the EDO, dated January 25, 2002, to comments and recommendations included in the ACRS report dated December 12, 2001, concerning the proposed rulemaking for risk-informed revisions to 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors."

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

- The Committee considered the response from the EDO, dated January 10, 2002, to the comments and recommendations included in the ACRS letter dated October 12, 2001, concerning the revised Reactor Oversight Process (ROP).

The Committee decided to write a letter regarding the EDO's response reaffirming the ACRS comments regarding threshold values, concurrent findings, and, in accordance with the SRM dated December 20, 2001, the need to discuss risk-informed and performance-based elements of the ROP.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from December 5, 2001, through February 6, 2002, the following Subcommittee meetings were held:

- Materials and Metallurgy - January 15-16, 2002

The Subcommittee reviewed the preliminary results of the Fracture Analysis of Vessels: Oak Ridge (FAVOR) code calculation associated with the Reevaluation of the Technical Basis for the Pressurized Thermal Shock Rule Screening Criterion Project.

- Thermal-Hydraulic Phenomena - January 16-18, 2002

The Subcommittee reviewed (1) The GE Nuclear Energy Licensing Topical Report NEDC-33004P, "Constant Pressure Power Uprate," Revision 2, and (2) the Framatome ANP Richland S-RELAP5 realistic thermal-hydraulic code version and its application to large-break LOCA analyses.

- Planning and Procedures (ACRS Retreat) - January 24-26, 2002

The Subcommittee discussed several matters, including: regulatory challenges associated with the licensing of future plant designs; NRC safety research program

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report to the Commission; use of formal decision analysis in the regulatory decisionmaking process; SAPHIRE code; issues associated with power uprates; matters related to the reactor oversight process; and the effectiveness of the ACRS process for conducting Committee business.

- Planning and Procedures - February 6, 2002

The 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 MATTERS FOR THE ATTENTION OF THE EXECUTIVE DIRECTOR FOR OPERATIONS

- The Committee would like the opportunity to review the draft final amendment to 10 CFR 50.55a to incorporate by reference ASME Boiler and Pressure Vessel and OM code cases after reconciliation of public comments.
- In coordination with the EDO and Directors of NRR, RES, and NMSS, the ACRS and ACNW plan to schedule periodic meetings with the EDO and the Office Directors to discuss items of mutual interest in the future.
- The Committee decided to review the resolution of the NRC Steam Generator Action Plan items as they become available.
- The Thermal-Hydraulic Phenomena Subcommittee plans to review the validation of the RELAP5 code for pressurized thermal shock scenarios.
- The Materials and Metallurgy Subcommittee plans to review the staff's proposed risk acceptance criteria for the reactor pressure vessel failure frequency due to pressurized thermal shock events.
- The Committee plans to continue its review of matters related to PRA quality during future meetings. The ACRS Subcommittee on Reliability and PRA plans to meet in August 2002 to discuss the staff's proposed regulatory guide and associated industry guidance.

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PROPOSED SCHEDULE FOR THE 490TH ACRS MEETING, MARCH 7-9, 2002

The Committee agreed to consider the following topics during the 490th ACRS meeting, March 7-9, 2002:

- Clinton Nuclear Power Station Core Power Uprate
- Proposed NEI 00-04, "Option 2 Implementation Guideline," for Risk-Informing the Special Treatment Requirements of 10 CFR Part 50
- Arkansas Nuclear One, Unit 2 Core Power Uprate
- Phase 2 Pre-Application Review of the AP1000 Design

Sincerely,

/RA/

George E. Apostolakis
Chairman