

January 18, 2002

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

Dear Chairman Meserve:

SUBJECT: SUMMARY REPORT - 488th MEETING OF THE ADVISORY  
COMMITTEE ON REACTOR SAFEGUARDS, DECEMBER 5-7  
2001, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 488th meeting, December 5-7, 2001, 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 memoranda, and letter noted below:

REPORT

- Core Power Upgrades for Dresden Nuclear Power Station, Units 2 and 3 and Quad Cities Nuclear Power Station, Units 1 and 2 (Report to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated December 12, 2001)

LETTERS

- Proposed Rulemaking for Risk-Informed Revisions to 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors" (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated December 12, 2001)
- Proposed Steam Generator Program Guidelines and Associated Generic License Change Package (Letter to William D. Travers, Executive Director for Operations, NRC, from George E. Apostolakis, Chairman, ACRS, dated December 14, 2001)

The Honorable Richard A. Meserve

## MEMORANDA

- Final Part 20 Rulemaking on Revision of the Skin Dose Limit (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated December 10, 2001)
- Proposed Closeout of Generic Safety Issue-172, "Multiple System Responses Program" (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated December 10, 2001)
- Proposed Rulemaking on Submission of Financial Information Requirements for Applications to Renew or Extend the Term of an Operating License for Power Reactors (10 CFR § 50.33(f)(2)) (Memorandum to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS, dated December 14, 2001)

## OTHERS

- Report (Draft NUREG-1755, "Some Observations on Risk-Informing Appendices A and B to 10 CFR Part 50") prepared by an ACRS Fellow (Letter to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated December 20, 2001)
- Report (Draft NUREG-1766, "Safety Culture: A Survey of the State-of-the-Art) prepared by an ACRS Fellow concerning Safety Culture (Letter to Chairman Meserve, NRC, from George E. Apostolakis, Chairman, ACRS, dated December 20, 2001)

In addition, as authorized by the Committee, Dr. Larkins, ACRS Executive Director, issued a letter to Mr. Steven P. Nesbit, Duke Energy Company, dated December 11, 2001, responding to his December 3, 2001 E-mail to Dr. Larkins regarding ACRS members' statements concerning ice condenser containments.

## HIGHLIGHTS OF KEY ISSUES CONSIDERED BY THE COMMITTEE

### 1. Dresden and Quad Cities Core Power Uprate

The Committee heard presentations by and held discussions with representatives of the NRC staff and the Exelon Generation Company (Exelon) regarding the license amendment request for an increase in core thermal power for the Dresden Nuclear Power Station, Units 2&3, and the Quad Cities Nuclear Power Station, Units 1&2, pursuant to the GE Nuclear Energy Extended Power Uprate Program. Exelon had requested power increases for the Dresden and Quad Cities plants of 17 and 17.8%, respectively.

This discussion was a continuation of the Committee's review of this matter, begun during its November meeting. During this meeting, the Committee discussed the issue of the need for boiling water reactor plants undergoing Extended Power Uprates to conduct large transient tests. The Committee also discussed the issue of conducting an integrated test of the recirculation runback system, installed on the Exelon plants to prevent a plant trip upon a loss-of-feedwater event, and addressed other follow-on issues from the November meeting discussions.

### Committee Action

The Committee issued a report to Chairman Meserve on this matter, dated December 12, 2001.

### 2. Meeting with the NRC Commissioners

The Committee met with the NRC Commissioners on December 5, 2001, to discuss the following topics:

- Reactor Oversight Process
- Regulatory Challenges for Future Plant Designs
- ACRS Activities Associated with Core Power Uprates
- ACRS Activities Associated with License Renewal

### 3. Risk-Informed 10 CFR Part 50 Pilot Program (Option 2)

The Committee heard presentations by and held discussions with representatives of the NRC staff concerning proposed risk-informed revisions to the special treatment requirements (Option 2) of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities." The Committee discussed the draft rule language for 10 CFR 50.69 and associated Option 2 pilot applications for Quad Cities and Wolf Creek. The

The Honorable Richard A. Meserve

Committee also discussed proposed industry guidance in NEI 00-04, "Option 2 Implementation Guideline."

#### Committee Action

The Committee plans to continue its review of this matter during future meetings. The Committee suggested that the Reliability and Probabilistic Risk Assessment Subcommittee meet in early 2002 to discuss matters related to NEI 00-04.

#### 4. NEI 97-06, "Steam Generator Program Guidelines"

The Committee heard presentations by and held discussions with representatives of the NRC staff and the Nuclear Energy Institute (NEI) regarding NEI 97-06, "Steam Generator Program Guidelines," and the industry Steam Generator Program Generic License Change Package. The Committee members and the staff discussed the industry's proposed prescriptive limits for inspection intervals, new strategies for ensuring tube integrity, and the difficulties associated with developing performance-based criteria.

#### Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter dated December 14, 2001.

#### 5. Proposed Rulemaking for Risk-Informed Revisions to 10 CFR 50.44

The Committee heard presentations by and held discussions with representatives of the NRC staff 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 discussed the staff proposal to eliminate the design-basis loss-of-coolant accident hydrogen release and requirements for systems to mitigate such a release. The Committee discussed staff plans to retain requirements for high-point vents and for ensuring a mixed-containment atmosphere, inerting BWR Mark I and Mark II containments, and providing hydrogen control systems for Mark III and ice condenser containments. The Committee also discussed (i) requirements for licensees to monitor hydrogen in the containment atmosphere for all containment designs with the provision that monitors are no longer classified as safety-related components; (ii) the staff proposal to codify the existing regulatory practice of monitoring oxygen concentrations in containments with inerted atmospheres; (iii) investigation of combustible gas source terms; and (iv) as well as options for performance-based and prescriptive alternatives.

The Honorable Richard A. Meserve

### Committee Action

The Committee issued a letter to the NRC Executive Director for Operations on this matter dated December 12, 2001.

#### 6. Election of ACRS Officers

The Committee re-elected Dr. George E. Apostolakis as Chairman and Dr. Mario V. Bonaca as Vice-Chairman to the ACRS, and Dr. Thomas S. Kress as Member-At-Large for the Planning and Procedures Subcommittee, for CY 2002.

### RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the response from the Executive Director of Operations (EDO), dated December 3, 2001, to comments and recommendations included in the ACRS report dated October 23, 2001, concerning the Electric Power Research Institute Report on Resolution of NRC Generic Letter 96-06 Water Hammer Issues.

The Committee was satisfied with the EDO's response.

### OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from November 8, 2001, through December 4, 2001, the following Subcommittee meetings were held:

- ACRS/ACNW Joint Subcommittee - November 14, 2001

The ACRS/ACNW Joint Subcommittee met to discuss the status of risk-informed activities in the Office of Nuclear Material Safety and Safeguards (NMSS) including proposed final Standard Review Plan Chapter 3 associated with Integrated Safety Analysis, activities of the NMSS Risk Task Group, and development of a probabilistic risk assessment for dry cask storage.

- Materials and Metallurgy, Thermal-Hydraulic Phenomena, and Reliability and Probabilistic Risk Assessment - November 15, 2001

The three Subcommittees jointly discussed the status of NRC staff and industry initiatives to risk-inform the technical requirements (Option 3) of 10 CFR 50.46 for emergency core cooling systems for light-water nuclear power reactors.

The Honorable Richard A. Meserve

- Thermal Hydraulic Phenomena - November 28, 2001

The Subcommittee continued its review of the NRC Office of Nuclear Regulatory Research thermal-hydraulic phenomena research program, and discussed the proposal of the Electric Power Research Institute to use the MAAP code for realistic analysis of containment design-basis accidents.

- Materials and Metallurgy - November 29, 2001

The Subcommittee discussed the status of NEI 97-06, "Steam Generator Tube Inspection Guidelines," and the industry's Steam Generator Generic Change Package.

- Reliability and Probabilistic Risk Assessment - December 4, 2001

The Subcommittee discussed proposed revisions to the special treatment requirements (Option 2) of 10 CFR Part 50 and associated industry guidance and pilot applications.

- Planning and Procedures - December 4, 2001

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 Thermal-Hydraulic Phenomena Subcommittee will conduct a follow-on review of the RES thermal-hydraulic code consolidation process and selected experimental programs beginning in the Spring of 2002.
- The Committee will review the application of the MAAP code to realistic analysis of containment design-basis accidents following the staff's review of the EPRI submittal.
- The Committee plans to continue its review of matters related to risk-informing the special treatment requirements (Option 2) of 10 CFR Part 50 during future meetings. The ACRS Subcommittee on Reliability and PRA plans to meet in early 2002 to discuss matters related to NEI 00-04, "Option 2 Implementation Guideline."

The Honorable Richard A. Meserve

- The Committee plans to review proposed final revisions to 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors," following the reconciliation of public comments.
- The Committee will continue its follow-up on the RES Safety research programs and the content and format of the 2002 ACRS report to the Commission.
- The Committee plans to review the safety evaluation of NEI 97-06, "Steam Generator Program Guidelines," after the resolution of public comments.

PROPOSED SCHEDULE FOR THE 489th ACRS MEETING

The Committee agreed to consider the following topics during the 489th ACRS meeting, February 7-9, 2002:

- Risk-Informed Regulation Implementation Plan
- Meeting with the EDO and the Office Directors of NRR, NMSS, and RES
- Proposed Final Revision to Regulatory Guide 1.174 and SRP Chapter 19
- PTS Technical Bases Reevaluation Project
- Thermal-Hydraulic Phenomena Subcommittee Report

Sincerely,

**/RA/**

George E. Apostolakis  
Chairman