

April 4, 2003

The Honorable Nils J. Diaz  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Dear Chairman Diaz:

SUBJECT: SUMMARY REPORT - 500<sup>th</sup> MEETING OF THE ADVISORY  
COMMITTEE ON REACTOR SAFEGUARDS, MARCH 6-8, 2003  
AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 500<sup>th</sup> meeting, March 6-8, 2003, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports and a letter. In addition, the Committee authorized Dr. John T. Larkins, Executive Director, ACRS, to transmit the memoranda noted below:

REPORTS:

The following reports were issued to Richard A. Meserve, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Review Standard, RS-002: "Processing Applications for Early Site Permits," dated March 12, 2003
- Reactor Oversight Process, dated March 13, 2003
- Report on the Safety Aspects of the License Renewal Application for the Peach Bottom Atomic Power Station Units 2 and 3, dated March 14, 2003

LETTER:

The following letter was issued to William D. Travers, Executive Director for Operations, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Final Regulatory Guide DG-1119, "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems," dated March 13, 2003

The Honorable Richard A. Meserve

#### MEMORANDA:

The following memorandum was issued to William D. Travers, Executive Director for Operations, NRC, from John T. Larkins, Executive Director, ACRS:

- Draft Regulatory Guide DG-1079, "Criteria for Power Systems for Nuclear Power Plants" (Proposed Revision 3 to Regulatory Guide 1.32), dated March 11, 2003

The following memorandum was issued to Mr. Robert H. Leyse, a member of the public, from John T. Larkins, Executive Director, ACRS:

- Petition for Rulemaking (to address the Impact of Fouling on the Performance of Heat Transfer Surfaces Throughout the Licensed Nuclear Power Plants) and Related Issues, dated March 14, 2003

#### HIGHLIGHTS OF KEY ISSUES

##### 1. Peach Bottom License Renewal Application

The Committee heard presentations by, and held discussions with, representatives of the NRC staff and Exelon Generation Company, LLC (Exelon) regarding the staff's final Safety Evaluation Report (SER) for the Peach Bottom Atomic Power Station Units 2 and 3 license renewal application. The staff presented the resolution of open items identified in the draft SER. The staff and the applicant presented information regarding the reactor scram event that occurred at Peach Bottom Unit 2 on December 21, 2002.

##### Committee Action

The Committee issued a report to the NRC Chairman on this matter dated March 14, 2003 in which it recommended that the application be approved. The Committee also noted that the scram at Peach Bottom Unit 2 that occurred on December 21, 2002, highlighted a number of weaknesses in the current corrective action and preventive maintenance programs. The Committee expects that ongoing corrective actions committed to by the licensee will resolve these weaknesses. The Committee also stated that during inspections, the NRC staff should assess the effectiveness as well as the adequacy of implementation of these programs.

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## 2. Reactor Oversight Process

The Committee heard presentations by and held discussions with representatives of the NRC staff on the Reactor Oversight Process (ROP) that focused on a summary of the Subcommittee meeting held on January 21, 2003 to address the issues raised in a Staff Requirements Memorandum (M011205B) dated December 20, 2001.

The staff discussed the differences between the risk-informed and performance-based elements of the ROP, consistency and transparency of the thresholds related to performance indicators (PIs) and the significance determination process (SDP), the yellow-red performance indicator thresholds, and cross-cutting issues.

The staff believes the risk-informed and performance-based aspects of the ROP are addressed. The Committee does not agree. The ROP basis document addresses the consistency and transparency of the PIs and the SDP. The current yellow-red thresholds will be maintained and adjustments made as ongoing changes are made to the PI program. Cross-cutting issues are being developed.

### Committee Action

The Committee issued a report to the NRC Chairman dated March 13, 2003, indicating that there are still significant disagreements between the staff and the Committee regarding the ROP.

## 3. Vessel Head Penetration Cracking and Degradation

The Committee heard presentations by and held discussions with representatives of the Electric Power Research Institute Materials Reliability Program (EPRI/MRP) regarding vessel head penetration cracking and degradation issues.

The MRP provided data on the results of plant inspections conducted to date and the inspection plans for the spring 2003 outages.

The total reactor vessel head (RVH) nozzle population includes 3871 control rod drive mechanism (CRDM) nozzles, 1090 control element drive mechanism (CEDM) nozzles, and 94 in-core instrument (ICI) nozzles, at 69 PWR units. Bare-metal visual and/or non-visual non-destructive examination inspections have been performed on about 81% of the RVH nozzles.

Following the spring outages, 97% of the total PWR nozzle population will have been inspected. After the fall 2003 outages, it is expected that all 69 units will have been inspected or the heads replaced.

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### Committee Action

This was an information briefing and no Committee action was taken. The Committee plans to continue its discussion of this matter during future meetings.

4. Draft Final Revision 1 to Regulatory Guide 1.180 (DG-1119) "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems"

The Committee heard presentations by and held discussions with representatives of the NRC's Office of Nuclear Regulatory Research (RES) concerning draft final Regulatory Guide (DG-1119), "Guidelines for Evaluating Electromagnetic and Radio-Frequency Interference in Safety-Related Instrumentation and Control Systems." Draft Final Revision 1 to Regulatory Guide 1.180 (DG-1119) will replace Regulatory Guide 1.180 which was issued in January 2000. DG-1119 provides guidance to address the recent changes in the electromagnetic and radio-frequency interference (EMI/RFI) envelopes. Some of these changes include endorsing Military Standard (MIL-STD- 461E) and the International Electrotechnical Commission (IEC-61000) series of EMI/RFI test methods.

Oak Ridge National Laboratory (ORNL) has been engaged by RES to assist in developing the technical basis for regulatory guidance on the EMI/RFI immunity and power surge withstand capability. ORNL also assisted in developing the technical basis for test criteria, test methods, and operating envelopes applicable for ensuring immunity to conducted disturbances along signal lines in safety-related I&C systems.

### Committee Action

The Committee issued a letter to the NRC Executive Director for Operations dated March 13, 2003, recommending that DG-1119 be issued.

5. Early Site Permit Process

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding the early site permit (ESP) process. The staff has developed a draft ESP review standard (RS-002, "Processing applications for early site permits" ) to provide guidance to the staff and information to stakeholders on the review of an ESP application. Use of existing guidance to the extent feasible was the basic premise in the development of the ESP review standard. The staff was tasked to review NUREG-0800," Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants," and applicable sections of NUREG-1555, " Standard Review Plans for Environmental Reviews for Nuclear Power Plants", Regulatory Guides, Information Notices, and Generic Letters in the development of the draft ESP review standard. Currently, the draft ESP RS-002 does not contain security, quality assurance, and accident analysis sections.

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Three utilities have notified the NRC of intent to submit ESP applications. These are Exelon (Clinton site )in June 2003, Entergy (Grand Gulf site ) in June 2003, and Dominion (North Anna site ), in September 2003. The Nuclear Energy Institute is proposing a plant parameter envelope (PPE) approach for ESP applications that would include a set of postulated design parameters that bound the characteristics of a reactor that might later be deployed at a site. The PPE, together with the description of the site characteristics, allows the NRC to evaluate the technical and environmental suitability of the site.

#### Committee Action

The Committee issued a report to the NRC Chairman on this matter dated March 12, 2003, concluding that the proposed ESP review standard is appropriate for review of ESP applications and will accommodate the industry's proposed use of the PPE concept.

#### 6. Overview of the Format and Content of the Fort Calhoun License Renewal Application

The Committee heard presentations by and held discussions with representatives of the NRC staff regarding the improved license renewal application (LRA) format and review approach. The staff described standardized methods for implementing the license renewal rule (10 CFR Part 54), as well as techniques used by the staff in evaluating applications for license renewals. Starting with Fort Calhoun, all LRAs will follow the new format.

#### Committee Action

This was an information briefing. No Committee action was taken.

#### RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

The Committee did not receive any response from the Executive Director for Operations for reconciliation at this meeting.

#### OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from February 6, 2003 through March 5, 2003, the following Subcommittee meetings were held:

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- Planning and Procedures - March 5, 2003

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 EDO

- The Committee plans to review the draft final Regulatory Guide DG-1079, "Criteria for Power Systems for Nuclear Power Plants," after reconciliation of public comments.
- The Committee plans to continue its discussion of vessel head penetration cracking and degradation during future meetings.
- The Committee plans to hold further discussions with the NRC staff regarding the ACRS concerns associated with the reactor oversight process.

#### PROPOSED SCHEDULE FOR THE 501<sup>st</sup> ACRS MEETING

The Committee agreed to consider the following topics during the 501<sup>st</sup> ACRS meeting, to be held on April 10-12, 2003:

- Draft Final Risk-Informed Revisions to 10 CFR 50.44, "Standards for Combustible Gas Control System in Light-Water-Cooled Power Reactors"
- Draft Final Regulatory Guide, DG-1122, "Determining the Technical Adequacy of PRA Results for Risk-Informed Activities"
- Control Room Habitability
- Meeting with the NRC Commissioners
- Significant Recent Operating Events
- Subcommittee Report on the Interim Review of the License Renewal Application for the St. Lucie Nuclear Power Plant
- Subcommittee Report on AP1000 Thermal-Hydraulic Matters
- Safety Culture
- Advancement of PRA Technology to Improve Risk-Informed Decisionmaking

Sincerely,

***/RA/***

Mario V. Bonaca  
Chairman