UNITED STATES
NUCLEAR REGULATORY COMMISSION
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS
WASHINGTON, DC 20555 - 0001

SL-0536

December 12, 2005

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

Dear Chairman Diaz:

SUBJECT: SUMMARY REPORT - 527th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, NOVEMBER 3-5, 2005, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 527th meeting, November 3-5, 2005, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letters, and memoranda:

REPORTS:

Reports to Nils J. Diaz, Chairman, NRC, from Graham B. Wallis, Chairman, ACRS:

- Report on the Safety Aspects of the License Renewal Application for the Point Beach Nuclear Plant Units 1 and 2, dated November 18, 2005

- Staff Recommendation to Withdraw the Proposed Rule on Post-Fire Operator Manual Actions, dated November 18, 2005

LETTERS:

Letters to Luis A. Reyes, Executive Director for Operations (EDO), NRC, from Graham B. Wallis, Chairman, ACRS:

- Draft Final Generic Letter 2005-XX, “Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power,” dated November 18, 2005

- Draft NRC Digital System Research Plan for FY 2006-FY 2009, dated November 21, 2005

MEMORANDA:

Memoranda to Luis A. Reyes, EDO, NRC, from John T. Larkins, Executive Director, ACRS:

- Proposed Revision to Standard Review Plan Section 12.5, "Operational Radiation Protection Program," dated November 8, 2005

- Standard Review Plan Section 14.2.1, "Generic Guidelines for Extended Power Uprate Testing Programs," dated November 9, 2005

- Draft Final Generic Letter 2005-XX, "Steam Generator Tube Integrity and Associated Technical Specifications," dated November 9, 2005

- Final Rule - AP1000 Design Certification, dated November 15, 2005

HIGHLIGHTS OF KEY ISSUES

1. Final Review of the License Renewal Application for the Point Beach Nuclear Plant, Units 1 and 2

The Committee met with NRC staff and representatives of the Nuclear Management Company, (NMC) LLC, to review the license renewal application for the Point Beach Nuclear Plant (PBNP), Units 1 and 2 and the related final Safety Evaluation Report (SER). The Committee issued an interim report on the safety aspects of this license renewal application on June 9, 2005. The operating licenses for Units 1 and 2 expire on October 5, 2010, and March 8, 2013, respectively. The applicant has requested approval for continued operation of each unit for a period of 20 years beyond the current license expiration dates. Each unit is a two-loop Westinghouse pressurized water reactor licensed at a power level of 1540 MWt. The steam generators and the reactor vessel heads for both units have been replaced. The applicant has implemented approximately 20% of its license renewal programs and commitments. The draft SER issued in May 2005 contained five open items and fifteen confirmatory items. In the final SER, the staff documents the resolution of these items and concludes that the requirements of 10 CFR 54 have been met. The staff provided an overview of the final SER and described the EDO response to the Committee's interim report. The interim report had described the Committee's concerns with NMC's corrective action program and human performance that may affect the development and effective implementation of license renewal programs. The EDO response described the staff's inspection activities for license renewal and the Reactor Oversight Process. The Confirmatory Action Letter issued to PBNP is still open, and PBNP remains in the Multiple/Repetitive Degraded Cornerstone Column of the Reactor Oversight Program Action Matrix.

Committee Action

The Committee issued a report to the NRC Chairman dated November 18, 2005, recommending that the license renewal application of PBNP Units 1 and 2 be approved once the staff has committed to additional actions to ensure that the requirements of the license renewal rule have been met. These additional actions are expanding the scope of the staff's

post-approval site inspection to verify that all license renewal programs and commitments have been met and performing a review of the effectiveness of the PBNP Corrective Action Program before the plant enters the period of extended operation.

2. Draft Final Generic Letter 2005-XX, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power"

The Committee heard presentations by and held discussions with representatives of the staff regarding the draft final Generic Letter 2005-XX, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power." The staff provided the Committee a summary of the comments received during the public comment period. The staff provided its responses to the public comments and explained the changes to the draft Generic Letter based on the public comments. The staff presented information regarding the activities of the Office of Nuclear Regulatory Research (RES) on grid reliability issues. A representative of the Nuclear Energy Institute (NEI) stated that NEI did not understand the problem the staff is trying to solve. NEI does not see a compliance issue, and they believe that any grid-related issues will be addressed by the nuclear power plant grid reliability standard being developed by the North American Electric Reliability Council (NERC).

Committee Action

The Committee issued a letter to the EDO dated November 18, 2005, recommending that the staff issue the final Generic Letter 2005-XX, "Grid Reliability and the Impact on Plant Risk and the Operability of Offsite Power." The Committee recommended that the staff continue to interact with the Federal Energy Regulatory Commission (FERC) and NERC on grid reliability issues. The Committee would also like to hear a briefing from the staff after the staff has evaluated the information submitted by the licensees.

3. Economic Simplified Boiling Water Reactor (ESBWR) Design

The Committee heard presentations by and held discussions with representatives of the General Electric (GE) Nuclear Energy and the NRC staff regarding the general description of the ESBWR design and the review schedule for design approval and certification.

On August 24, 2005, GE submitted an application for final design approval and standard design certification of the ESBWR design pursuant to 10 CFR Part 52. The application contains Tiers 1 and 2 material.

The ESBWR has a rated thermal power of 4500 MW. The plant uses a direct-cycle, natural circulation boiling water reactor, and a low-leakage containment vessel that comprises the drywell and wetwell. The plant is expected to operate at an estimated gross electrical power output of approximately 1600 MW and net estimated electrical output of approximately 1535 MW. Currently, GE is considering only a single standard unit. If a multi-unit is desired, the changes and additional information needed to license a multi-unit plant would be supplied by the combined license applicant.

On September 23, 2005, the NRC staff notified GE that the contents of the ESBWR application in accordance with 10 CFR 52.47 are not sufficiently complete in certain areas. GE has responded to the staff's request. As of the meeting date, the staff was performing an acceptance review on the supplemental information.

Committee Action

This briefing was provided for information only. The ACRS plans to hold Subcommittee meetings regarding the ESBWR thermal-hydraulic and probabilistic risk assessment issues. The draft SER regarding the ESBWR Stability Methodology will be reviewed in early 2006.

4. Draft ACRS Report to the Commission on the NRC Safety Research Program

The ACRS provides the Commission a biennial report , presenting the Committee's observations and recommendations concerning the overall NRC Safety Research Program. During the November meeting, the Committee discussed the overall themes of its draft 2006 report to the Commission on the NRC Safety Research Program.

Committee Action

The Committee plans to continue discussing a draft report on NRC Safety Research Program during its December 7-10, 2005 meeting.

5. Digital Systems Research Plan

The Committee met with representatives of the NRC staff to discuss the draft final NRC Digital Systems Research Plan for FY 2005 - FY 2009. During the May 2005 ACRS meeting, the Committee had heard an information briefing on the draft plan from RES and initial comments from the Office of Nuclear Reactor Regulation (NRR) staff. During the November 2005 ACRS meeting, the RES staff reviewed the updates to the plan and briefly described each research area within the plan. The staff discussed six research areas: systems aspects of digital technology, software quality assurance, risk assessment of digital systems, security aspects of digital systems, emerging digital technology and applications, and advanced nuclear power plant digital systems. The details of each research area were discussed at Subcommittee meetings in June and October 2005. The current version of the plan incorporated both formal and informal comments from NRR, the Office of Nuclear Materials Safety and Safeguards (NMSS), and the Office of Nuclear Security and Incident Response (NSIR).

Committee Action:

The Committee issued a report to the EDO dated November 21, 2005, concluding that the research programs are well directed toward meeting agency needs. The Committee also recommended that the staff refine the plan to include an inventory and classification of the types of digital systems to be used in nuclear power plants, more specifically to identify current and future regulatory needs, to increase the "system-centric" aspects of software safety, and to increase the priority of the research on advanced nuclear power plant digital systems.

6. Status of Rulemaking on Post-Fire Operator Manual Actions

The Committee heard presentations by and held discussions with representatives of the staff regarding the staff's recommendation to withdraw the proposed rule, "Post-Fire Operator Manual Actions." The staff provided the Committee a summary of the comments received during the public comment period and its responses to the public comments. The staff explained the justification for recommending withdrawal of the proposed rule. It stated that implementation of the proposed rule could require exemption or deviation requests for a large number of licensees. A large number of exemption requests would be inconsistent with the Commission expectation as discussed in Staff Requirements Memorandum, "Staff Requirements - SECY-04-0233 - Proposed Rulemaking - Post-Fire Operator Manual Actions (RIN-3150-AH-54)," dated January 18, 2005. A representative from NEI stated that it supports a rule on this issue but not the proposed rule.

Committee Action

The Committee issued a report to the NRC Chairman dated November 18, 2005, concurring with the staff's decision to withdraw the proposed rule, "Post-Fire Operator Manual Actions."

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of October 26, 2005, to the recommendations included in the ACRS letter dated September 22, 2005, concerning Exelon Generation Company, LLC, application for early site permit (ESP) and the NRC staff's associated draft safety evaluation report. The Committee decided that it was satisfied with the EDO's response.

  The NRC staff committed to meet with the ACRS in March 2006 to present the conclusions of the staff's review of the Clinton ESP.

- The Committee considered the EDO's response of November 1, 2005, to the comments included in the ACRS report of September 21, 2005, concerning two policy issues related to new plant licensing.

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

- The Committee considered the EDO's response of October 31, 2005, to the recommendations included in the ACRS report dated September 22, 2005 regarding the draft final revisions to generic license renewal guidance documents. The Committee decided that it was satisfied with the EDO's response.

  The staff committed to continue to evaluate the need for revisions to the license renewal guidance documents and update them as needed.

- The Committee considered the EDO's response of October 26, 2005, to the recommendations included in the ACRS letter dated September 20, 2005 regarding

draft proposed Revision 4 to Regulatory Guide 1.82, "Water Sources for Long-Term Recirculation Cooling Following a Loss-of-Coolant Accident." The Committee decided that it was satisfied with the EDO's response.

The staff committed to revise proposed Revision 4 to Regulatory Guide 1.82 to address ACRS concerns and to meet with the Committee to present the proposed revision.

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from October 6, 2005 through November 2, 2005, the following Subcommittee meetings were held:

- Digital Instrumentation and Control Systems - October 20-21, 2005

The Subcommittee reviewed selected digital instrumentation and control research projects.

- Planning and Procedures - November 2, 2005

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 meet with the staff after they have evaluated the information submitted by licensees in response to the Generic Letter on grid reliability.

- The Committee plans to review the staff's evaluation of licensee responses to Generic Letter 2005-XX, "Steam Generator Tube Integrity and Associated Technical Specifications."

- The Committee plans to review the thermal-hydraulic issues, probabilistic risk assessment, and the NRC staff's associated SER for the ESBWR.

- The Committee plans to continue its interaction with the NRC staff regarding the Exelon Generation Company, LLC, application for an early site permit (ESP), utilizing "performance-based" seismic hazard analysis methodology.

- The Committee plans to continue its interaction with the NRC staff regarding policy issues and the technology-neutral framework related to new plant licensing.

- The Committee plans to review the proposed revision to NUREG-0800, Standard Review Plan, Section 14.2.1, "Generic Guidelines for Extended Power Uprate Testing Programs."

PROPOSED SCHEDULE FOR THE 528th ACRS MEETING

The Committee agreed to consider the following topics during the 528th ACRS meeting, to be held on December 8-10, 2005:

- Final Review of the Vermont Yankee Extended Power Uprate Application and the Associated Safety Evaluation
- Draft ACRS Report on the NRC Safety Research Program
- Final Review of the ESP Application for the Grand Gulf Nuclear Station and the Associated Final SER
- Draft Final Generic Letter, "Impact of Potentially Degraded Hemyc/MT Fire Barrier Materials on Compliance with Fire Protection Regulations"
- Proposed Program Plan and Advance Notice of Proposed Rulemaking for Risk-Informing 10 CFR Part 50
- Staff Activities Associated with Responding to the Commission's Staff Requirements Memorandum (SRM) related to Safety Conscious Work Environment and Safety Culture

Sincerely,

/RA/

Graham B. Wallis
Chairman