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

SL-0541

June 15, 2006

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

Dear Chairman Diaz:

SUBJECT: SUMMARY REPORT - 532nd MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, MAY 4-5, 2006, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

During its 532nd meeting, May 4-5, 2006, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letter, 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 Brunswick Steam Electric Plant, Units 1 and 2, dated May 17, 2006
- Beaver Valley Extended Power Uprate Application, dated May 22, 2006
- Proposed Revisions to 10 CFR Part 52: Licenses, Certifications, and Approvals for Nuclear Power Plants, and Conforming Amendments to Applicable NRC Regulations, dated May 22, 2006
- R. E. Ginna Extended Power Uprate Application, dated May 22, 2006

LETTER:

Letter to Luis A. Reyes, Executive Director for Operations, NRC, from Graham B. Wallis, Chairman, ACRS:

- Modified Draft Final Revision 4 to Regulatory Guide 1.97, “Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants,” dated May 17, 2006

MEMORANDA:

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

- Draft Regulatory Guide DG-1144, “Guidelines for Evaluating Fatigue Analyses Incorporating the Life Reduction of Metal Components Due to the Effects of the Light-Water Reactor Environment for New Reactors,” dated May 5, 2006
- Clinton Early Site Permit Application - Final Safety Evaluation Report Changed Pages Prior to Publishing as a NUREG, dated May 8, 2006

HIGHLIGHTS OF KEY ISSUES

1. Final Review of the License Renewal Application for the Brunswick Steam Electric Plant

The Committee met with representatives of the NRC staff and the Carolina Power and Light (CP&L) Company to discuss the license renewal application for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2 and the associated final Safety Evaluation Report (SER). CP&L requested approval for continued operation of each unit for 20 years beyond the current license expiration dates. The operating licenses for Units 1 and 2 expire on September 8, 2016, and December 27, 2014, respectively. Each unit is a General Electric BWR 4 with a unique Mark I containment. The containment is constructed of reinforced concrete with a steel liner. CP&L described operating experience with the drywell liners; operating experience with vibration from extended power uprates; major equipment replacements and repairs; major exceptions to the Generic Aging Lessons Learned Report; and the commitment tracking system. The draft SER was issued on December 20, 2005, with no open or confirmatory items. As a result of the staff's review, several components were brought into scope of license renewal. The staff described a new two-tiered process for reviewing the scoping of balance of plant systems. This application was the first to be reviewed using this new process. The final SER issued on March 31, 2006, concluded that the requirements of 10 CFR 54.29(a) have been met.

Committee Action

The Committee issued a report to the NRC Chairman, dated May 17, 2006, concluding that the programs committed to and established by the applicant to manage age-related degradation provide reasonable assurance that BSEP Units 1 and 2 can be operated in accordance with their current licensing basis for the period of extended operation with no undue risk to the health and safety of the public. The Committee recommended that the application for renewal of the operating licenses for BSEP, Units 1 and 2 be approved. The Committee also concluded that the staff's new two-tiered process for reviewing the scoping of balance of plant systems was effective and recommended that this process be used in the review of future license renewal applications.

2. Final Review of the Extended Power Uprate Application for R. E. Ginna Nuclear Plant

The Committee reviewed the application by Constellation Energy for an increase of approximately 17 percent power level for the R.E. Ginna Nuclear Power Plant (Ginna). The committee considered the revised safety evaluation results, system impacts, component vibration, flow-accelerated corrosion, power ascension and testing, and the risk aspects of this application. The Committee noted that the licensee had undertaken an evaluation of plant changes that could be made at the time of the power uprate that would result in an overall decrease in core damage frequency (CDF). The licensee has committed to undertaking a set of modifications that will have a net impact on CDF and large early release frequency (LERF) such that after the EPU, the CDF and LERF will be slightly less than the pre-EPU values.

Committee Action

The Committee issued a report to the NRC Chairman, dated May 22, 2006, recommending that the application for a power uprate at Ginna be approved.

3. Final Review of the Extended Power Uprate Application for the Beaver Valley Nuclear Plant

The Committee reviewed the application by FirstEnergy Nuclear Operating Company for an increase of approximately 8 percent power level for the Beaver Valley Power Station, Units 1 and 2. The committee considered the revised safety evaluation results, the containment analyses, reactor vessel integrity,

component vibration, flow-accelerated corrosion, power ascension and testing, and the risk aspects of this application. It heard presentations by the staff concerning boron concentration following a loss-of-coolant accident, and noted that the staff performed a number of independent calculations to verify the analytical results reported by the licensee for this event, as well as several other operational transients and accidents.

Committee Action

The Committee issued a report to the NRC Chairman, dated May 22, 2006, recommending that the application for a power uprate at Beaver Valley be approved.

4. Proposed Revisions to 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants"

The Committee met with representatives of the NRC staff and the Nuclear Energy Institute (NEI) to discuss proposed revisions to 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants." The NRC staff characterized the proposed changes to Part 52 and highlighted several proposals that could affect safety requirements [e.g., emergency preparedness requirements at the early site permit (ESP) and combined license (COL) stages, quality assurance requirements for ESP applicants, reporting requirements for ESPs and design certifications, and probabilistic risk assessment (PRA) requirements for COLs]. NEI highlighted several industry concerns with the proposed rule (e.g., extensive rule changes being made on the verge of COL applications, the potential for level 3 PRA requirements/guidance for COL applicants, reporting requirements for ESPs) and identified several areas where industry thought the rule could be improved (e.g., to include a change process for severe accident mitigation features of certified reactor designs, to include provisions for limited work authorizations).

Committee Action

The Committee issued a report to the NRC Chairman, dated May 22, 2006, recommending that a level 3 PRA consequence analysis not be required at the ESP stage, that COL holders be required to keep their PRAs up to date but not require that they be submitted to the NRC, that it should be sufficient for the ESP applicant to identify only the "major features" of the site emergency plan, that the definition of major features be specified in regulatory guidance documents, and that operation up to 5% power be permitted with FEMA-identified deficiencies in a COL holder's emergency plan (as is currently allowed for power plants licensed under Part 50).

5. NRC Staff's Response to ACRS Comments on the Draft Final Revision 4 to Regulatory Guide 1.97, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants"

The Committee met with representatives of the NRC staff to discuss their proposed resolution of ACRS comments on Revision 4 to Regulatory Guide 1.97, which the Committee had reviewed during the 530th meeting. The staff discussed the specific regulatory position of concern, the Committee's comments on the regulatory position, and the proposed modifications to the regulatory position. The proposal removes the previous guidance regarding partial conversions of accident monitoring instrumentation and modifies Regulatory Position 1 to provide additional guidance to current operating reactor licensees with regard to performing modifications to accident monitoring instrumentation. The Committee also heard statements from two members of the public supporting the modifications to the Regulatory Guide.

Committee Action:

The Committee issued a letter to the EDO, dated May 17, 2006, recommending that the staff issue the Regulatory Guide 1.97, Revision 4, as final.

6. Subcommittee Report on Reliability and Probabilistic Risk Assessment

The Subcommittee discussed the probabilistic risk assessment (PRA) for the Economic Simplified Boiling Water Reactor (ESBWR), an advanced design from General Electric (GE) that is in the process of being certified by the NRC. The subcommittee identified several issues for further examination.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of April 20, 2006, to comments and recommendations included in the March 28, 2006 ACRS letter on the Draft Final Revision 4 to Regulatory Guide 1.97, "Criteria for Accident Monitoring Instrumentation for Nuclear Power Plants."

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

OTHER RELATED ACTIVITIES OF THE COMMITTEE

During the period from April 6, 2006, through May 3, 2006, the following Subcommittee meetings were held:

- Reliability and Probabilistic Risk Assessment - April 20-21, 2006

The Subcommittee reviewed the PRA for General Electric's next generation simplified boiling water reactor, the ESBWR.

- Power Uprates - April 25-27, 2006

The Subcommittee reviewed the application by FirstEnergy for an 8% power uprate for Beaver Valley Power Station, Units 1 and 2. The Subcommittee also reviewed the small-break LOCA portion of the staff's evaluation related to the Ginna Extended Power Uprate.

- Reliability and Probabilistic Risk Assessment - April 28, 2006

The Subcommittee on Reliability and Probabilistic Risk Assessment was briefed by the NRC staff, Nuclear Energy Institute (NEI), Electric Power Research Institute (EPRI), and several pilot plant licensees on Risk Management Technical Specifications Initiative 4b, "Risk-Informed Completion Times."

- Planning and Procedures - May 3, 2006

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 two-tiered process used by the staff in reviewing the scoping of balance-of-plant systems at the Brunswick Nuclear Plant should be used in reviewing future license renewal applications.

- The Committee would like an opportunity to review the draft final version of Regulatory Guide DG-1144, "Guidelines for Evaluating Fatigue analyses Incorporating the Life Reduction of Metal Components Due to the Effects of the Light-Water Reactor Environment for New Reactors," after reconciliation of public comments.

- The Committee looks forward to reviewing the progress made by the staff and/or the industry with regard to a more detailed treatment of the thermal-hydraulic conditions within the core region to better define the conditions leading to recirculation and mixing within the vessel and lower plenum.

PROPOSED SCHEDULE FOR THE 533rd ACRS MEETING

The Committee agreed to consider the following topics during the 533rd ACRS meeting, to be held on May 31, 2006, through June 1, 2006:

- Draft Final Generic Letter, "Post-Fire Safe-Shutdown Circuit Analysis Spurious Actuations"
- Draft Final Generic Letter 2006-xx, "Inaccessible or Underground Cable Failures that Disable Accident Mitigation Systems"
- Interim Staff Guidance on Aging Management Program for Inaccessible Areas of Boiling Water Reactor (BWR) Mark I Containment Drywell Shell
- Overview of New Reactor Licensing Activities
- Status Report on the Quality Assessment of Selected NRC Research Projects

Sincerely,

/RA/

Graham B. Wallis
Chairman