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

December 1, 2009

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: SUMMARY REPORT - 567th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, NOVEMBER 5-7, 2009, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

Dear Chairman Jaczko:

During its 567th meeting, November 5-7, 2009, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports and memorandum:

REPORTS

Reports to Gregory B. Jaczko, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Final Regulatory Guide 5.71, "Cyber Security Programs for Nuclear Facilities," dated November 12, 2009

- Westinghouse AP1000 Design Certification Amendment: Status of ACRS Review, dated November 13, 2009

MEMORANDUM

Memorandum to R. W. Borchardt, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- Proposed Revisions to Regulatory Guides 1.82 and 4.11, dated November 6, 2009

HIGHLIGHTS OF KEY ISSUES

1. Amendments to the AP1000 Design Control Document

The Committee met with representatives of the NRC staff to discuss the NRC staff's review of the amendments to the AP1000 Design Control Document (DCD). The staff described the status of its review of the AP1000 DCD and the Reference Combined License Application (RCOLA). Since the certification of the AP1000 in 2006, Westinghouse has submitted two revisions to the DCD. These revisions include design and hardware changes such as a change in pressurizer shape, addition of a reactor vessel flow skirt and neutron panels, change in the reactor vessel diameter, increase in Class 1E voltage from 125v to 250v, change in design of turbine generator, expansion of existing liquid radioactive waste storage capacity, and an increase in the number of gray control rods. The staff is currently reviewing these changes and has issued several chapters of its draft Safety Evaluation Report (SER) with Open Items.

Approximately 30 of the 130 open items have been closed, and about 50 requests for additional information (RAIs) are outstanding. Over 100 Technical Reports (TRs) have been submitted in support of the DCD amendment. In addition to the ongoing chapter-by-chapter review of draft SER chapters, the Committee expects to review selected TRs as well.

The staff stated that the transition from Bellefonte to Vogtle as the AP1000 RCOLA is nearly complete. The staff plans to discuss the advanced final SER for Vogtle with the Committee in the fall of 2010.

Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated November 13, 2009, concluding that its review of the AP1000 DCD amendment is keeping pace with the availability of draft SER chapters. Also, the Committee has not identified any items of potential concern in addition to those which have been previously identified by the NRC staff and remain under staff review.

2. Draft Final Regulatory Guide 5.71, "Cyber Security Programs for Nuclear Facilities"

The Committee met with representatives of the NRC staff to discuss draft final Regulatory Guide (RG) 5.71, “Cyber Security Programs for Nuclear Facilities." The staff presented an overview of RG 5.71 and described the major changes to this Guide since March 2009. These changes addressed ACRS comments in a March 19, 2009, letter and included expanded guidance on how to establish, implement, and maintain a cyber security program. The NRC staff described the new detailed guidance for the selection of critical systems and critical digital assets (CDA). RG 5.71 employs 3 defense-in-depth protective strategies: (1) incorporate protective security boundaries for timely detection and response to a cyber attack (2) apply security controls to detect, deter, respond, and recover from a cyber attack, and (3) maintain a cyber security program. The selection of security controls incorporates an acceptable method for addressing cyber vulnerabilities. The security controls were adapted from the National Institute of Standards and Technology (NIST) cyber security standards as well as guidance from the U.S. Department of Homeland Security (DHS). The guide also addresses the management of potential vulnerabilities, weaknesses, and cyber risks introduced by changes in the system, network, environment, or emerging threats.

In addition, the regulatory guide includes a generic cyber security plan template that describes how CDAs are identified, how security controls are applied, and how the cyber security program will be maintained.

Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated November 12, 2009, recommending that RG 5.71 be issued. The Committee noted that RG 5.71 adapts the NIST Standards for the development of plans but does not provide guidance to evaluate their adequacy. The Committee recommended that after the initial implementation of the cyber security plans, RG 5.71 be revised to include the resulting insights and provide guidance regarding the adequacy of cyber security plans and policies. In addition, longer-term research projects should be initiated by the NRC staff in the following areas: exploration of the use of

Probabilistic Risk Assessment insights in cyber security; development of better guidance on the interaction between cyber security and safety; and investigation of supply chain attacks.

3. Overview of the Advanced Boiling Water Reactor (ABWR) Design as Applied to the South Texas Project (STP) Combined License Application (COL) and NRC Staff's Plan for the STP COLA Review

The Committee met with representatives of the NRC staff and the STP Nuclear Operating Company (STPNOC) to discuss the previously certified ABWR design as applied to the STP Units 3 & 4. STPNOC submitted a COL in 2007. STPNOC representatives discussed the significant changes from the certified ABWR design. STPNOC representatives also discussed implementation of the new aircraft impact rule. STPNOC has submitted a DCD amendment to address the rule requirements.

The NRC staff also provided an overview of the alternate vendor qualification process. STPNOC selected Toshiba as the primary vendor supplying the ABWR design. However, the ABWR design was sponsored by General Electric Company who obtained the design certification. Hence, as required by the NRC regulations, the staff performed an alternate vendor review to demonstrate that Toshiba was capable of providing the previously certified ABWR for STP Units 3 & 4.

Committee Action

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

4. Draft ACRS Report 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 its draft 2010 report to the Commission on the NRC Safety Research Program.

Committee Action

The Committee plans to continue its discussion of its draft report on the NRC Safety Research Program during its December 2009 meeting.

5. Significant Operating Experience

The Chairman of the Plant Operations and Fire Protection Subcommittee provided a report to the Committee summarizing the results of the Significant Operating Experience Report to Congress by the NRC Commissioners. Several events reported as abnormal occurrences were described. No abnormal events were identified at nuclear power plants, material licensees, or transportation licensees. Nuclear power plants initiating events and safety systems availability trends are low and continue to trend downward. The Industry Trend Program, the Accident Sequence Program, and the Reactor Oversight Program appear to be effective. The introduction of new technologies (like digital I&C) will likely cause new failure modes and new initiating events. However, the incidence of digital I&C events is currently low.

Committee Action

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

6. Economic Simplified Boiling Water Reactor (ESBWR) Subcommittee Report:

The Chairman of the ESBWR Subcommittee provided a report to the Committee summarizing the results of the October 20-22, 2009, meeting with representatives of the NRC staff and GE-Hitachi Nuclear Energy (GEH) to review the resolution of open items associated with the ESBWR Design Certification application. The discussion topics included dynamic loads on heat exchangers using passive-cooling; high-energy line break analyses; steam dryer loads; noncondensible gas in the Gravity Driven Cooling System (GDCS) pipelines; design of GDCS check valves; core design; and the applicability of the Critical Power Ratio (CPR) correlation to ESBWR fuel.

Committee Action

The Committee plans to continue its review of the ESBWR Design Certification application during its future meetings.

7. Radiation Protection and Nuclear Materials Subcommittee Report

The Chairman of the Radiation Protection and Nuclear Materials Subcommittee provided a report to the Committee summarizing the results of the November 4, 2009, meeting with representatives of the NRC staff to review draft Revision 1 to NUREG-1520, “Standard Review Plan [SRP] for the Review of a License Application for a Fuel Cycle Facility.” The Subcommittee reviewed significant changes to the SRP with emphasis on Integrated Safety Analysis (ISA), and regulatory treatment of chemical safety, radiation safety, criticality safety, fire safety, and environmental protection. Changes to the SRP were made primarily to increase clarity and to add guidance based on previous reviews and lessons learned. The enhanced guidance subsumed a number of Interim Staff Guidance documents (ISGs) that had been used as supplemental information during staff reviews of license applications. The staff explained the motivation for integrating ISGs and other changes into the revised SRP.

Committee Action

The Committee plans to continue its discussion of the revised NUREG-1520 document during its February 2010 meeting.

8. Evolutionary Power Reactor (EPR) Subcommittee Report

The Chairman of the EPR Subcommittee provided a report to the Committee summarizing the results of the November 3, 2009, meeting with representatives of the NRC staff and AREVA, NP, to review Chapters 2 and 8 of the EPR Design Certification application. AREVA, NP, presented information from Chapter 2, “Site Characteristics,” and Chapter 8, “Electric Power,” of the Final Safety Analysis Report (FSAR) for the US EPR DCD. The NRC staff presented information resulting from the review of these two FSAR Chapters and documented in the SER with Open

Items. Chapter 2 has several open items concerning meteorology and hydrology that were discussed. The staff review of Chapter 8 did not result in any open items.

Committee Action

The Committee plans to continue its review of the EPR Design Certification application during its future meetings.

9. Process for ACRS Review of Amendments to the DCD of Previously Certified Reactor Designs

The Committee discussed strategies for optimizing its review of amendments to previously certified reactor designs.

Committee Action

The Committee will continue its discussion of this matter during its December 3-5, 2009, meeting.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of October 21, 2009, to comments and recommendations included in the September 23, 2009, ACRS report on the Safety Aspects of the License Renewal Application for the Indian Point Nuclear Generating Units 2 and 3. The Committee decided that it was satisfied with the EDO's response.

- The Committee considered the EDO's response of October 21, 2009, to comments and recommendations included in the September 28, 2009, ACRS report on the Safety Aspects of the License Renewal Application for the Three Mile Island Nuclear Station, Unit 1. The Committee decided that it was satisfied with the EDO's response.

SCHEDULE FOR THE 568th ACRS MEETING

The following topics are scheduled for the 568th ACRS meeting, to be held on December 3-5, 2009:

- License Renewal Application for the Prairie Island Nuclear Generating Plant, Units 1 & 2

- Draft Final Regulatory Guide 1.205, "Risk-Informed, Performance-Based Fire Protection for Existing Light-Water Nuclear Power Plants," and Draft Final Standard Review Plan (SRP) Section 9.5.1.2, "Risk-Informed, Performance-Based Fire Protection"

- Long-Term Core Cooling Approach for the Economic Simplified Boiling Water Reactor (ESBWR) Design

- Draft Final Revision 1 to Regulatory Guide 1.151 (DG-1178), “Instrument Sensing Lines”
- Meeting with the Commission
- Draft ACRS Report on the NRC Safety Research Program

Sincerely,

/RA/

Mario V. Bonaca
Chairman

- Draft Final Revision 1 to Regulatory Guide 1.151 (DG-1178), “Instrument Sensing Lines”
- Meeting with the Commission
- Draft ACRS Report on the NRC Safety Research Program

Sincerely,
/RA/
Mario V. Bonaca
Chairman

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