



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

December 1, 2008

The Honorable Dale E. Klein
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: SUMMARY REPORT – 557th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, NOVEMBER 6-7, 2008, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

Dear Chairman Klein:

During its 557th meeting, November 6-7, 2008, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following letter and memoranda:

LETTER

Letter to R. W. Borchardt, Executive Director for Operations, NRC, from William J. Shack, Chairman, ACRS:

- White Paper on "Historical Perspectives and Insights on Reactor Consequence Analyses," dated November 14, 2008

MEMORANDA

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

- Supplement 1 To NUREG-1875, "Safety Evaluation Report Related to License Renewal of Oyster Creek Generating Station," dated November 14, 2008
- Draft Final Revision to Regulatory Guides 1.125 and 3.25, dated November 14, 2008
- Draft Regulatory Guide DG-1204, dated November 14, 2008
- Proposed Interim Staff Guidance (ISG) DC/COL-ISG-08, dated November 14, 2008
- Withdrawal of Regulatory Guide 3.38, "General Fire Protection Guide for Fuel Reprocessing Plants," dated November 14, 2008

HIGHLIGHTS OF KEY ISSUES

1. Chapter 14 of the SER Associated with the Economic Simplified Boiling Water Reactor (ESBWR) Design Certification Application

The Committee met with representatives of the NRC staff to discuss Chapter 14, "Verification Programs" of the NRC staff's Safety Evaluation Report (SER) with Open Items associated with the ESBWR Design Certification Application.

The staff discussed its review of various elements of this Chapter including the Initial Plant Test Program for Final Safety Analysis Reports and Inspections, Tests, Analyses and Acceptance Criteria (ITAAC). The staff provided an overview and historical perspective on the use of Tier 1, Tier 2, ITAAC, Design Acceptance Criteria (DAC), and their applicability for design certifications, and the overlap between ITAAC and the Initial Test Program.

The staff further provided the status of the staff's review of Chapter 14 and the Tier 1 information. Although the staff issued 437 requests for additional information (RAIs) during the course of this review, 364 of these RAIs have already been resolved. The selection criteria and methodology for the various DACs were determined to be consistent with the guidance in Standard Review Plan 14.3.

The staff issued 98 RAIs in the course of its review of the initial test program described in Chapter 14, of which 93 have since been resolved. The open items concern digital instrumentation and control systems, human factors engineering, electrical systems, containment systems, reactor systems, and format and consistency issues across similar ITAACs.

Committee Action

The Committee plans to continue its discussion of Chapter 14 in combination with Chapter 7, "Instrumentation and Controls" of the SER associated with the ESBWR Design Certification Application during its December 2008 meeting.

2. Position Paper on Incorporating the International Commission on Radiological Protection (ICRP) Recommendations into 10 CFR Parts 20 and 50

The Committee met with representatives of the NRC staff to discuss the NRC response to the 2007 recommendations of the ICRP (Publication 103). These recommendations formally replace the ICRP's previous guidance, which was published in 1990, and update the radiation and tissue weighting factors as well as the radiation detriment, based on the latest scientific information regarding the biology and physics of radiation exposure.

The NRC staff is developing an options paper that is expected to be provided to the Commission in December 2008. The proposed options include (1) no action; (2) updating 10 CFR Part 50 and Appendix I (but not 10 CFR Part 20), and (3) move toward alignment with ICRP 103.

Committee Action

This was an information briefing. No Committee action was needed at this time. The Committee plans to review the options paper on the ICRP recommendations and provide its views.

3. Status of License Renewal Activities

The Committee met with representatives of the NRC staff to discuss the current status and recent changes in the license renewal program. The staff described the status of completed, ongoing, and future license renewal applications; the challenge it is facing; the Office of Inspector General (OIG) audit report and recommendations; and the license renewal infrastructure.

The staff stated that 68 out of 104 operating units have received renewed licenses or are currently under review. Regarding the OIG audit report, the staff stated that it has addressed all recommendations made by the OIG that would enhance the license renewal program, specifically in the area of documentation of the technical review.

The staff is in the process of updating the Standard Review Plan, Generic Aging Lessons-Learned (GALL) Report, and the bases document. The staff will incorporate lessons learned from the review of license renewal applications, operating experience, public comments, and approved Interim Staff Guidance. The estimated schedule for the GALL Report update is December 2010.

Committee Action

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

4. Current Issues Associated with Fire Protection and Related Issues

The Committee met with representatives of the NRC staff regarding the status of the staff's current fire protection activities, which include: recent Commission guidance, Government Accountability Office (GAO) recommendations and planned staff actions, fire protection closure plan, license amendment requests for pilot plants transitioning to National Fire Protection Association (NFPA) Standard 805, and associated Regulatory Guide and Standard Review Plan development. The staff described the progress made in the above areas. The staff is working with the industry stakeholders on the fire protection closure plan.

Regarding the NFPA 805-related activities, the staff stated that Progress Energy (Shearon Harris Plant) and Duke Energy (Oconee Nuclear Site) have been designated as NFPA 805 pilot plants. To date, operators of 48 nuclear power units have sent the NRC letters of intent to adopt the NFPA 805 Standard. In parallel with and learning from the pilot plant amendment reviews, the staff is finalizing its review infrastructures.

The staff proposed the following future actions on the above discussed topics:

- The staff plans to conduct a fire protection briefing on fire-induced circuit failures and resolution of electrical raceway fire barriers in early 2nd Quarter 2009.
- The staff plans to submit for ACRS review NFPA 805 guidance documents (RG 1.205, Revision 1, and SRP Section 9.5.1b) after resolution of public comments, in early 3rd Quarter 2009.

Committee Action

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

5. Proposed Changes to the Review Process for Subsequent Combined License Applications (SCOLAs)

The Committee met with representatives of the NRC staff to discuss a pilot program for the SCOLA review process. The NRC staff described the current Design-Centered Review Approach (DCRA), which was endorsed by the Commission and consistent with the NRC Policy on Standardization. The current DCRA minimizes rework by early identification of issues during the detailed design work and during the staff review of combined license applications (COLAs). The safety review model includes six phases (6-Phase model), starting from the generation of request for additional information (RAIs) to the development of the Final Safety Evaluation Report.

The staff believes that it will be worthwhile to reduce the current review model of 6-Phases to four phases (4-Phase model). The 4-Phase model eliminates the generation of an SER with open items and the associated ACRS review. The staff plans to use the 4-Phase model on the SCOLA review of the V. C. Summer Nuclear Station site as a pilot. The purposes of this pilot are to improve the existing process, to reduce the resources required without affecting the quality, to enhance the staff's ability to accomplish work with the current budget, and to enhance the staff's ability to manage workload peaks.

The staff recognized the following challenges on the 4-Phase review process: determining which SCOLA reviews will follow the 4-Phase review approach, early resolution of staff issues and the ability of the applicant to respond in a timely manner, ensuring early involvement with the ACRS, and developing measures for effectiveness and efficiency. The staff plans to have future interactions with the ACRS on the topics related to the SCOLA review process.

Committee Action

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

6. US-APWR Subcommittee Report

The Chairman of the US-APWR Subcommittee provided a report summarizing the results of the October 23-24, and November 4-5, 2008, meetings with representatives of the NRC staff and Mitsubishi Heavy Industries (MHI) to discuss various US-APWR topical reports. During October 23-24, 2008, the Subcommittee was briefed on the following:

- NRC staff's SER for LOCA Mass and Energy Release Analysis Code Applicability Report
- Thermal Design Methodology
- Fuel Design Criteria and Methodology
- US-APWR Advanced Accumulator
- FINDS: Mitsubishi Fuel Assemblies Seismic Analysis Code

During November 4-5, 2008, the Subcommittee was briefed on the following four additional topical reports:

- HSI (Human System Interface) System Description and HFE (Human Factors Engineering) Process
- Safety I&C (Instrumentation & Control) System Description Design Process
- Safety System Digital Platform MELTAC (Mitsubishi Electric Total Advanced Controller)
- Defense-in-Depth and Diversity

Committee Action

As additional SERs become available, the Subcommittee will schedule further briefings from the staff and will consider preparing letters at that time.

7. Plant License Renewal Subcommittee Report

The Chairman of the Plant License Renewal Subcommittee provided a report summarizing the results of the November 5, 2008, meeting with representatives of the NRC staff and Southern Nuclear Operating Company regarding the interim review of the license renewal application for the Vogtle Electric Generating Plant and the associated NRC staff's draft SER.

The NRC issued the construction permits for Unit 1 on June 28, 1974, and for Unit 2 on June 28, 1974. The NRC issued the operating licenses for Unit 1 on March 16, 1987, and for Unit 2 on March 31, 1989. Southern Nuclear Operating Company submitted the license renewal application on June 27, 2007, and the staff's draft SER was issued on September 8, 2008, which contained no open items, no confirmatory items, three proposed license conditions, and 35 commitments.

Committee Action

The Committee plans to discuss the final SER related to the license renewal application for the Vogtle Electric Generating Plant in a future meeting.

8. Meeting with the Commission

On November 7, 2008, the Committee met with the NRC Commissioners to discuss topics of mutual interest, including the following:

- PWR Sump Performance Issues
- Committee Views on Power Upgrades for BWRs
- Development of the TRACE Thermal-Hydraulic System Analysis Code

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of October 27, 2008, to comments and recommendations included in the September 17, 2008, ACRS report on the license renewal application for the Wolf Creek Generating Station, Unit 1. The Committee decided that it was satisfied with the EDO's response.

SCHEDULE FOR THE 558th ACRS MEETING

The following items are scheduled for discussion during the 558th ACRS meeting, to be held on December 4-6, 2008:

- Chapters 7 and 14 of the SER associated with the ESBWR Design Certification Application
- Early Site Permit Application and the Final SER for the Vogtle Nuclear Plant
- Status of Staff Activities Associated with Potential Revision to 10 CFR 50.46 (b)
- NRC Staff's Initial White Paper on Containment Overpressure Credit Issue
- Overview of the Human Reliability Analysis (HRA) Research Activities
- Draft Policy Statement on Defense-in-Depth for Future Nuclear Reactors

Sincerely,

/RA/

William J. Shack
Chairman

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William J. Shack
Chairman

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OFFICIAL RECORD COPY

Letter to the Honorable Dale E. Klein, Chairman, NRC, from William J. Shack, Chairman, ACRS, dated December 1, 2008.

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