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

May 28, 2009

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

SUBJECT: SUMMARY REPORT – 562nd MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, MAY 7-8, 2009, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

Dear Chairman Jaczko:

During its 562nd meeting, May 7-8, 2009, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report, letter, and memoranda:

REPORT

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

- Proposed Resolution of Generic Safety Issue - 163, "Multiple Steam Generator Tube Leakage," dated May 20, 2009

LETTER

Letter to R. W. Borchardt, Executive Director for Operations, NRC, from Mario V. Bonaca, Chairman, ACRS:

- Draft Final Regulatory Guide 1.214 (DG-1212), "Response Procedures for Potential or Actual Aircraft Attacks," dated May 18, 2009

MEMORANDA

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

- Proposed Revisions to Regulatory Guides 1.34, 1.43, 1.44, 1.50, 1.84, 1.147, and 1.193, dated May 20, 2009

- Draft Final Regulatory Guides 1.47, 1.69, and 3.52, dated May 20, 2009

- ACRS Review of Steam Generator Action Plan Items, dated May 18, 2009

HIGHLIGHTS OF KEY ISSUES

1. Proposed Rule on Risk-Informed Changes to Loss-of-Coolant Accident Technical Requirements

The Committee met with representatives of the NRC staff to discuss the revised proposed rule to amend Parts 50 and 52 to redefine large break loss-of-coolant accidents. The revised rule would establish a conservative transition break size (TBS) for pressurized water and boiling water reactors. Breaks larger than TBS would be considered beyond design basis; however, mitigation requirements would be retained for defense-in-depth and system reliability. In November 2005, the original proposed rule was published in the Federal Register. The Committee commented on the draft final rule in November 2006. During the May 2009 briefings staff provided an overview of the revised proposed rule and described the changes made in response to ACRS comments. The staff plans to reissue the entire rule for public comment in June 2009 and then provide the final rule to the commission in June 2010.

Committee Action

The Committee decided that no report is warranted at this time. The Committee plans to review the draft final version of rule after the public comment period.

2. Proposed Resolution of Generic Safety Issue (GSI–163), “Multiple Steam Generator Tube Leakage”

The Committee met with representatives of the NRC staff to discuss the proposed resolution of GSI-163. The NRC initiated GSI-163 to address a concern of an NRC staff member in a Differing Professional Opinion (DPO) in 1991. The principal assertion addressed by GSI-163 was the potential for multiple steam generator (SG) tube leaks during a non-isolatable main steam line break (MSLB) outside containment to lead to core damage as a result of loss of all primary system coolant and safety injection fluid in the refueling water storage tank. Consequently, the integrity of the SG tubes must be ensured with high confidence.

The NRC staff evaluated the adequacy and effectiveness of industry practice and regulatory requirements related to the management of SG tube integrity to ensure that all tubes will exhibit acceptable structural margins against burst or rupture under normal operating conditions and Design Basis Accidents (DBAs). The staff indicated that new performance-based technical specification requirements are in place at all US PWRs. Furthermore, licensees are required to make projections of acceptable tube behavior over the interval between SG tube inspections. Operating experience also shows that effective management of SG tube integrity can be achieved through a performance-based strategy focused on satisfying tube integrity performance criteria.

The staff concluded that the technical specification requirements related to SG tube integrity provide reasonable assurance that all tubes will exhibit acceptable structural margins against burst or rupture under normal operating conditions and DBAs, including MSLB, and that leakage from one or multiple tubes under DBAs will be limited to very small amounts, consistent with the applicable regulations for offsite and control room dose. The staff concluded that the GSI-163 principal assertion and related concerns in the DPO are not substantiated and that GSI-163

should be closed.

Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated May 20, 2009, recommending that GSI-163 be closed.

3. Draft Final Regulatory Guide 1.214 (DG-1212), "Response Procedures for Potential or Actual Aircraft Attacks"

The Committee met with representatives of the NRC staff to discuss draft final Regulatory Guide (RG) 1.214, "Response Procedures for Potential or Actual Aircraft Attacks." This Guide provides guidance for implementing requirements in 10 CFR 50.54(hh)(1) that was published on March 26, 2009. The Commission has determined that an aircraft attack is a beyond design basis threat; however mitigative measures are required for adequate protection of the public. This Guide provides one acceptable method for licensees and applicants to develop, implement, and maintain procedures for contingency actions in case of a potential or actual aircraft attack.

The staff discussed various actions required by 10 CFR 50.54(hh)(1) and the corresponding guidance in RG 1.214. The staff described the steps taken to develop the document, including coordination with stakeholders and other government agencies involved in this type of emergency response. The staff also described the current process for monitoring, communication, and notification to ensure threat authentication and follow-up action.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated May 18, 2009, recommending that Regulatory Guide 1.214 be issued after it is revised to emphasize the need for site specific mitigation strategies. The Committee also recommended that the staff review the use of the word "possible" throughout the document and revise the text where it sets unreasonable expectations.

4. Status and Update Concerning Revisions to the AP1000 Design Control Document

The Committee met with representatives of the NRC staff, Westinghouse Electric Company, and the NuStart Energy Consortium to discuss the latest amendments to the AP1000 Design Control Document (DCD). In January 2006, the NRC staff certified the AP1000 DCD that describes the standard plant design. During the 2007-2008 period, Westinghouse submitted new amendments to the AP1000 DCD to the NRC. The staff has subsequently been engaged in a review of those amendments, and complemented this review with meetings involving both Westinghouse and Nustart Energy consortium utilities comprising the AP1000 design center group.

The Westinghouse/NuStart representatives provided the Committee with an overview of the latest amendments to the currently certified design. The Westinghouse-proposed changes are expected to be extensive, and several involve Tier 1 information which will prompt the need for an NRC rulemaking at a later date. It is also expected that many of the proposed changes reflect Westinghouse's marketing of the AP1000 design both domestically as well as abroad. Westinghouse currently has contracts in-place with utilities for six AP1000-based reactors with more contracts expected in the future. The Bellefonte site is the currently designated reference Combined License Application (RCOLA) for the AP1000 design. NuStart representatives noted

that they are in the process of transitioning this designation to the Vogtle site.

The staff described its plans for reviewing the latest amendments to the AP1000 DCD. The staff's design certification process includes ACRS review of the draft Safety Evaluation Report (SER) with open-items. Three ACRS Subcommittee meetings on the AP1000 DCD draft SER are currently scheduled for the balance of calendar year 2009.

Committee Action

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

5. Quality Assessment of Selected Research Projects

The Committee discussed the status of the ACRS Panels' review of the quality assessment of the NRC research projects on the following topics: NUREG/CR-6964, "Crack Growth Rates and Metallographic Examinations of Alloy 600 and Alloy 82/182 from Field and Laboratory Materials Testing in PWR Environments," and Draft NUREG/CR-XXXX, "Diversity Strategies for Nuclear Power Plant Instrumentation and Control Systems."

Committee Action

The Committee plans to discuss the results of Panels' reviews of the above projects during its meeting on June 3-5, 2009.

6. Safety Research Program Subcommittee Report

The Chairman of the Subcommittee on the Safety Research Program provided a report to the Committee summarizing the results of the April 16–17, 2009, meeting with the NRC staff on the Seismic Safety Research Program Plan. The staff published this Plan in 2008 describing specific products and activities intended to provide improved information on seismic hazard characterization and the treatment of those hazards in siting and design decisions for new nuclear power plants. To help place this Program Plan in context, the Subcommittee was briefed on the user needs that form the technical basis for the work that has been identified. The Program Plan identifies about 40 products and activities. The Subcommittee learned that about 17 of these are currently under way to varying degrees. The Subcommittee was also briefed on the status of two of the research activities in progress as well as the U.S. Department of Energy (DOE) experience (including lessons-learned) related to the use of probabilistic methods in evaluating the seismic safety of defense-related nuclear facilities.

Committee Action

The Committee will provide comments and recommendations regarding the Seismic Safety Research Program Plan as part of its review of the NRC Research Program Plan in March 2010.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of April 1, 2009, to comments and recommendations included in the March 13, 2009, ACRS letter on Draft Final Rule 10 CFR 50.61a, "Alternate Fracture Toughness Requirements for Protection Against Pressurized Thermal Shock Events." The Committee decided that it was satisfied with

the EDO's response.

- The Committee considered the EDO's response of April 14, 2009, to comments and recommendations included in the February 23, 2009, letter on Draft Final NUREG-1855, "Guidance on the Treatment of Uncertainties Associated with Probabilistic Risk Assessments in Risk-Informed Decisionmaking," and draft Appendix A, "Example Implementation of the Process for the Treatment of PRA Uncertainty in a Risk-Informed Regulatory Application." The Committee decided that it was satisfied with the EDO's response.

PROPOSED SCHEDULE FOR THE 563rd ACRS MEETING

The following topics are scheduled for the 563rd ACRS meeting to be held on June 3-5, 2009:

- License Renewal Application and the Revised Final Safety Evaluation Report for the National Institute of Standards and Technology (NIST) Reactor
- Draft Final Regulatory Guide 1.21 (DG-1186), "Measuring, Evaluating, and Reporting Radioactive Materials in Liquid and Gaseous Effluents and Solid Wastes"
- Draft Final Regulatory Guide 4.1 (DG-4013), "Radiological Environmental Monitoring for Nuclear Power Plants"
- Pellet-Clad Interaction Failures under Extended Power Uprate Conditions
- Diversity and Defense-in-Depth Topical Report Associated with the US-APWR Design
- Quality Assessment of Selected Research Projects
- Meeting with the Commission

Sincerely,

/RA/

Mario V. Bonaca
Chairman

the EDO's response.

- The Committee considered the EDO's response of April 14, 2009, to comments and recommendations included in the February 23, 2009, letter on Draft Final NUREG-1855, "Guidance on the Treatment of Uncertainties Associated with Probabilistic Risk Assessments in Risk-Informed Decisionmaking," and draft Appendix A, "Example Implementation of the Process for the Treatment of PRA Uncertainty in a Risk-Informed Regulatory Application." The Committee decided that it was satisfied with the EDO's response.

PROPOSED SCHEDULE FOR THE 563rd ACRS MEETING

The following topics are scheduled for the 563rd ACRS meeting to be held on June 3-5, 2009:

- License Renewal Application and the Revised Final Safety Evaluation Report for the National Institute of Standards and Technology (NIST) Reactor
- Draft Final Regulatory Guide 1.21 (DG-1186), "Measuring, Evaluating, and Reporting Radioactive Materials in Liquid and Gaseous Effluents and Solid Wastes"
- Draft Final Regulatory Guide 4.1 (DG-4013), "Radiological Environmental Monitoring for Nuclear Power Plants"
- Pellet-Clad Interaction Failures under Extended Power Uprate Conditions
- Diversity and Defense-in-Depth Topical Report Associated with the US-APWR Design
- Quality Assessment of Selected Research Projects
- Meeting with the Commission

Sincerely,
/RA/
Mario V. Bonaca
Chairman

Distribution:
See next page

Accession No: ML091460145 **Publicly Available (Y/N):** Y **Sensitive (Y/N):** N
If Sensitive, which category?
Viewing Rights: ☒ NRC Users or ☐ ACRS only or ☐ See restricted distribution

OFFICE	ACRS	SUNSI Review	ACRS	ACRS	ACRS
NAME	G. Shukla	G. Shukla	C. Santos/A. Dias	E. Hackett	E. Hackett for M. Bonaca
DATE	5/26/09	5/26/09	5/28/09	5/28/09	5/28/09

OFFICIAL RECORD COPY

Letter to the Honorable Gregory B. Jaczko, Chairman, NRC, from Mario V. Bonaca, Chairman, ACRS, dated May 28, 2009

SUBJECT: SUMMARY REPORT – 562nd MEETING OF THE ADVISORY COMMITTEE ON RACTOR SAFEGUARDS, MAY 7-8, 2009, AND OTHER RELATED ACTIVITIES OF THE COMMITTEE

Distribution:
ACRS Branch A
ACRS Branch B
E. Hackett
H. Nourbakhsh
J. Flack
C. Jaegers
T. Bloomer
B. Champ
A. Bates
S. McKelvin
L. Mike
J. Ridgely
RidsSECYMailCenter
RidsEDOMailCenter
RidsNMSSOD
RidsNSIROD
RidsFSMEOD
RidsRESOD
RidsOIGMailCenter
RidsOGCMailCenter
RidsOCAAMailCenter
RidsOCAMailCenter
RidsNRROD
RidsNROOD
RidsOPAMail
RidsRGN1MailCenter
RidsRGN2MailCenter
RidsRGN3MailCenter
RidsRGN4MailCenter