



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

January 12, 2017

The Honorable Stephen G. Burns
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: SUMMARY REPORT – 638th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, NOVEMBER 3-5, 2016

Dear Chairman Burns:

During its 638th meeting, November 3-5, 2016, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letter, and memoranda:

REPORTS

Reports to Stephen G. Burns, Chairman, NRC, from Dennis C. Bley, Chairman, ACRS:

- “Report on the Safety Aspects of Dominion Virginia Power Combined License Application for North Anna Unit 3,” dated November 15, 2016
- “Monticello Nuclear Generating Plant Licensing Amendment Request for Operation in the Extended Flow Window Domain, using AREVA Fuel, Methods and Codes” dated November 15, 2016
- “Review of SECY-16-0106, Proposed Final Rule 10 CFR Part 61, ‘Low-Level Radioactive Waste Disposal’,” dated November 14, 2016

LETTER

Letter to Michael Weber, Director, Office of Nuclear Regulatory Research, NRC, from Dennis C. Bley, Chairman, ACRS:

- “ACRS Assessment of the Quality of Selected NRC Research Projects - FY 2016,” dated January 11, 2017

MEMORANDA

Memoranda to Victor M. McCree, Executive Director for Operations, NRC, from Andrea D. Veil, Executive Director, ACRS:

- “Regulatory Guides,” dated November 7, 2016
 - DG-1291, “Evaluating Deviations and Reporting Defects and Noncompliance Under 10 CFR Part 21”
 - RG 1.3, Revision 2, “Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Boiling Water Reactors” (Withdrawal)
 - RG 1.4, Revision 2, “Assumptions Used for Evaluating the Potential Radiological Consequences of a Loss of Coolant Accident for Pressurized Water Reactors” (Withdrawal)
 - RG 1.5, “Assumptions Used for Evaluating the Potential Radiological Consequences of a Steam Line Break Accident for Boiling Water Reactors” (Withdrawal)
 - RG 1.25, “Assumptions used for Evaluating the Potential Radiological Consequences of a Fuel Handling Accident in the Fuel Handling and Storage Building for Boiling and Pressurized Water Reactors” (Withdrawal)
- “Documentation of Receipt of Applicable Official NRC Notices to the Advisory Committee on Reactor Safeguards for November 2016,” dated November 7, 2016

HIGHLIGHTS OF KEY ISSUES

1. Report on the Safety Aspects of Dominion Virginia Power Combined License Application for North Anna Unit 3

The Committee met with representatives of the NRC staff and Dominion Virginia Power to discuss the combined license application (COLA) for North Anna Unit 3. The North Anna Unit 3 COLA incorporated, by reference, the certified ESBWR design control document (DCD) with some departures and exemptions, the approved early site permit for the North Anna site, and the approved reference COLA for Fermi 3. The staff verified that the site-specific differences between Fermi 3 and North Anna Unit 3 sites are adequately addressed. The staff concluded that the ESBWR standard design is adequate to meet the site-specific seismic demand, the North Anna Unit 3 site characteristics are bounded by the requirements of the ESBWR DCD, and the proposed departures and exemptions from the certified ESBWR DCD are acceptable.

Committee Action

The Committee issued a letter report to the NRC Chairman on this matter, dated November 15, 2016, with the following conclusions and recommendation: 1) There is reasonable assurance that North Anna Unit 3 can be built and operated without undue risk to the health and safety of the public. The COLA for North Anna Unit 3 should be approved, 2) Site-specific departures and exemptions from the ESBWR DCD, including those in the areas of seismic design and analysis, electrical power distribution system, liquid effluent discharge, and design for hurricane wind generated missiles, are acceptable and should be approved, and 3) There is reasonable assurance that the ESBWR design and the North Anna Unit 3 site satisfy the requirements resulting from the Fukushima Near-Term Task Force recommendations.

2. Monticello Nuclear Generating Plant Licensing Amendment Request for Operation in the Extended Flow Window Domain

The Committee met with representatives of the NRC staff, Xcel Energy and their consultants, and AREVA to discuss the operation of Monticello at the higher power/flow extended flow window (EFW) domain with AREVA fuel and licensing analyses methodology. Monticello is currently licensed to operate at the MELLLA+ domain, using GEH fuel and licensing methodology. The EFW operation is parametrically similar to the MELLLA+ domain. The AREVA analysis methods are not explicitly approved for EFW (or MELLLA+) conditions. Therefore, the staff reviewed and verified the validity of application of these previously approved AREVA licensing methods for performing safety analyses at the higher power/flow EFW domain, specifically for Monticello.

Committee Action

The Committee issued a letter report to the NRC Chairman on this matter, dated November 15, 2016, with the following conclusion and recommendation: The use of AREVA ATRIUM 10XM fuel and AREVA methods for Monticello in the EFW operating domain is acceptable with the limitations and conditions imposed by the staff to ensure an acceptable safety margin under EFW operation. We recommend that the Xcel Energy license amendment request for Monticello be approved.

3. Proposed Final 10 CFR Part 61, "Low-Level Radioactive Waste Disposal"

The Committee met with representatives of the NRC staff to discuss SECY-16-0106, the proposed final rule 10 CFR Part 61, "Low-Level Radioactive Waste Disposal." The staff presented the major revisions to Part 61 since the last revisions were presented to the Committee in 2014. The staff presented a summary of the main comments received on the draft proposed final rule and provided additional technical justifications for the proposed final rulemaking language.

Committee Action

The Committee issued a letter report to the NRC Chairman on this matter, dated November 15, 2016, with the following conclusions and recommendations: 1) The approach in proposed final rule 10 CFR Part 61, "Low-Level Radioactive Waste Disposal" can ensure that facilities meet Commission public health and safety objectives, 2) We remain concerned about the requirement that existing operating disposal facilities need to satisfy the new performance objectives even if they do not plan to add substantial long-lived waste for disposal, especially for already-buried waste. The final rule should retain the provision that allows compliance for existing facilities on a case-by-case basis, and 3) We prefer a regulatory approach consistent with that suggested in our previous reports making the site performance assessment with quantitative uncertainty analysis the basis for establishing the compliance and performance periods. The performance assessment results should inform qualitative requirements for periods exceeding the compliance period.

4. Assessment of the Quality of Selected NRC Research Programs – FY 2016

The Committee completed its report on the quality assessment of NRC research projects on NUREG/CR-7184, "Crack Growth Rate and Fracture Toughness Tests on Irradiated Cast Stainless Steel," NUREG/CR-7185, "Effects of Thermal Aging and Neutron Irradiation on Crack Growth Rate and Fracture Toughness of Cast Stainless Steels and Austenitic Stainless Steel Welds," and NUREG/CR-7200, "Influence of Coupling Erosion and Hydrology on the Long-Term Performance of Engineered Surface Barriers."

Committee Action

The Committee issued a letter dated January 11, 2017, transmitting this report to the Director, Office of Nuclear Regulatory Research. The Committee concluded that:

- NUREG/CR-7184 is of professional quality, but does not adequately address uncertainties and sensitivities that might affect one of the report's key findings.
- NUREG/CR-7185 is better than professional quality work that satisfies the research objectives and with some elements of innovation and insight.
- NUREG/CR-7200 is less than satisfactory. With some limitations, the results meet the research objectives

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the Executive Director for Operations' responses of October 21, 2016, to the September 19, 2016 ACRS letter, "Response to the July 5, 2016 Staff Letter Regarding Interim Staff Guidance JLD-ISG-2016-01 for Focused Evaluations and Integrated Assessments of Reevaluated Flooding Hazards." The Committee was satisfied with the Executive Director for Operations' response.

- The Committee considered the Executive Director for Operations' responses of September 8, 2016, to the April 28, 2016 ACRS letter and report, "Review and Evaluation of the NRC Safety Research Program." The Committee was satisfied with the Executive Director for Operations' responses.

SCHEDULED TOPICS FOR THE 639th ACRS MEETING

The following topics are scheduled for the 639th ACRS meeting, to be held on November 30 - December 2, 2016:

- Draft Final Rulemaking Package for Mitigation of Beyond-Design-Basis Events
- Fukushima Tier 2 Recommendations Related to Task 3 Evaluations of Natural Hazards other than Seismic and Flooding

Sincerely,

/RA/

Dennis C. Bley
Chairman

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Dennis C. Bley
Chairman

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