



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

January 5, 2012

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

SUBJECT: SUMMARY REPORT - 589th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, DECEMBER 1-3, 2011

Dear Chairman Jaczko:

During its 589th meeting, December 1-3, 2011, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letter, and memoranda:

REPORTS

Reports to Gregory B. Jaczko, Chairman, NRC, from Said Abdel-Khalik, Chairman, ACRS:

- Report on the Safety Aspects of the Progress Energy Florida, Inc. Combined License Application for Levy Nuclear Plant, Units 1 and 2, dated December 7, 2011
- Revised Branch Technical Position on Concentration Averaging and Encapsulation of Low-Level Radioactive Waste, dated December 13, 2011
- Proposed Requirements for ITAAC Maintenance and Draft Final Regulatory Guide 1.215, "Guidance for ITAAC Closure Under 10 CFR Part 52," dated December 8, 2011

LETTER

Letter to R. W. Borchardt, Executive Director for Operations, NRC, from Said Abdel-Khalik, Chairman, ACRS:

- Response to the October 28, 2011, EDO Letter Regarding the Advisory Committee on Reactor Safeguards Recommendations on Topical Report NEDC-33173P, Supplement 2, Parts 1, 2, and 3, "Analysis of Gamma Scan Data and Removal of Safety Limit Minimum Critical Power Ratio (SLMCPR) Margin," dated December 12, 2011

MEMORANDA

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

- ESBWR Design Certification Rulemaking and Supplemental Final Safety Evaluation Report, dated December 6, 2011
- Proposed Revisions to Regulatory Guides 1.140 and 1.185, dated December 6, 2011

HIGHLIGHTS OF KEY ISSUES

1. Levy County, Units 1 and 2, Combined License Application

The Committee met with representatives of the NRC staff and Progress Energy Florida, Inc. (PEF or the applicant) to discuss the Combined License Application (COLA) for the Levy Nuclear Plant (LNP), Units 1 and 2. The LNP COLA incorporates by reference the Westinghouse Electric Company AP1000 Design Certification Amendment and incorporates the standard information found in the Vogtle Electric Generation Plant, Units 3 and 4 reference COLA, with no deviations. The applicant presented LNP site characteristics and foundation design and analysis in the areas of geology, seismology, and geotechnical engineering. In particular, the applicant discussed a nuclear island roller compacted concrete bridging mat design, which is the only safety-related structure outside of the design control document (DCD) scope. It is a Seismic Class 1 structure which is designed to bridge the collapse of solution cavities. The applicant also presented the emergency plan design and on-site emergency facilities. The staff presented its evaluation of the application. In its site evaluation, the staff performed an independent analysis of site response to confirm the applicant's results. For the designs of structures, components, equipment, and systems, the staff presented review issues and their resolutions.

Committee Action

The Committee issued a report to the NRC Chairman on this matter dated December 7, 2011, concluding that there is reasonable assurance that LNP, Units 1 and 2, can be built and operated without undue risk to the public, subject to the following recommendations: (1) a license condition should be established to require inclusion of a probabilistic evaluation of the tsunami hazard in the site specific, full scope PRA required before fuel load, and (2) prior to approval of the COLA, the staff should verify that inclusion of the adjacent shipping canal and watercourse would not significantly affect the conclusions of its deterministic tsunami hazard evaluation described in the advanced safety evaluation. The Committee also noted that the recommendations described in their January 24, 2011, letter concerning the reference COLA in the following areas are also applicable to LNP: containment interior debris limitation, in-service inspection/in-service testing program requirements for squib valves, and power uncertainty measurement. Likewise, the discussion of site-specific probabilistic risk assessment in their January 24, 2011, letter is also applicable. The Committee recommended that the PEF COLA for LNP be approved following implementation of these recommendations.

2. Revised Branch Technical Position on Concentration Averaging and Encapsulation of Low-Level Radioactive Waste

The Committee met with representatives of the NRC staff and the Department of Energy (DOE) to discuss the draft revised Branch Technical Position (BTP) on Waste Concentration Averaging and Encapsulation. The staff emphasized that the revised BTP was proposed to implement the existing regulatory framework in 10 CFR Part 61. The staff described the incorporation of blending of large quantities of low level waste that included discussions of the removal of the “factor of 10” constraint and inclusion of homogeneity testing. The staff also described alternative approaches allowing for site- and waste-specific approaches to be approved. Radiation worker protection, intruder protection, and period of performance were also discussed.

The representative from DOE commented that DOE supports the proposed changes in the BTP because it provides clearer guidance and greater consistency in the regulation of low-level waste disposal. It also allows for greater flexibility with no increase in risk. The safety requirements, technological limits, ALARA considerations, and process limitations are relevant variables that often make homogeneity of radioactive waste impractical. The representative also commented on the relevancy of inadvertent intruder scenarios and suggested refinement of the alternative approaches.

Committee Action

The Committee issued a report to the NRC Chairman on this matter, dated December 13, 2011, recommending that that revised BTP be issued for public comment after consideration of the following comments: (1) the guidance for blending low level radioactive waste is a good approach but the staff should develop guidance to ensure that constituents in blended wastes are compatible, (2) the use of stylized scenarios used for inadvertent intrusion analysis should be replaced with a more site-specific approach, and (3) if 10 CFR Part 61 constrains the use of a more risk-informed, performance based treatment of intruder scenarios, staff should use the same scenarios used to develop Part 61 without creating additional unrealistic scenarios.

3. Proposed Requirements for Maintenance of Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) and the Associated Regulatory Guide

The Committee met with representatives of the NRC staff to discuss the proposed rule on ITAAC maintenance and draft final Revision 1 to Regulatory Guide (RG), 1.215, “Guidance for ITAAC Closure Under 10 CFR Part 52.” The proposed rule amends 10 CFR 52.99, “Inspections during construction,” to require that licensees (1) report new information that materially alters the basis under which ITAACs were performed and acceptance criteria were met and (2) notify the NRC of completion of all ITAAC activities. RG 1.215, Revision 1, endorses Nuclear Energy Institute (NEI) 08-01, “Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52,” Revision 4, and provides guidance for licensees in standardizing the content and format of their submittals to satisfy the ITAAC notification requirements. Revisions to RG 1.215 are necessary to provide licensees with information they will need to develop (1) quality ITAAC notifications on a timely basis, (2) associated details at levels that meet the staff’s expectations, (3) submittals of required and supporting documentation, and (4) associated licensee ITAAC closure schedules.

Committee Action

The Committee issued a letter to the NRC Chairman on this matter, dated December 8, 2011, recommending that the proposed ITAAC rule, "Requirements for Maintenance of Inspections, Tests, Analyses, and Acceptance Criteria," be approved. The Committee also recommended that RG 1.215, Revision 1, be issued after the approach in the RG for closing and maintaining ITAAC is revised to include an assessment that ensures a change does not introduce unintended consequences. This assessment should also include an evaluation that confirms the original inspections, tests, and analyses and their acceptance criteria are still valid and assures the functionality originally intended.

4. Draft Report on the Biennial ACRS Review of the NRC Safety Research Program

The Committee discussed the draft 2012 ACRS biennial report to the Commission on its review and evaluation of the NRC safety research program.

Committee Action

The Committee will continue its discussion of the draft final report during its January 19-20, 2012, meeting.

5. ESBWR Design Certification Rulemaking and Supplemental Final Safety Evaluation Report

The Committee considered the Economic Simplified Boiling Water Reactor (ESBWR) design certification rulemaking and supplemental Final Safety Evaluation Report (FSER) and decided not to review it. The Committee has no objection to the staff's proposal to issue the final rule and supplemental FSER.

6. Proposed Revisions to Regulatory Guides 1.140 and 1.185

The Committee considered proposed Revision 3 to RG 1.140 (DG-1280), "Design, Inspection, and Testing Criteria for Air Filtration and Adsorption Units of Normal Atmosphere Cleanup Systems in Light-Water-Cooled Nuclear Power Plants," and proposed Revision 1 to RG 1.185 (DG-1272), "Standard Format and Content for Post-Shutdown Decommissioning Activities Report," and decided not to review them. The Committee has no objection to the staff's proposal to issue these Guides for public comment. The Committee would like to have an opportunity to review the draft final version of these Guides after reconciliation of public comments.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS/EDO COMMITMENTS

- The Committee considered the EDO's response of October 28, 2011, to comments and recommendations included in the August 16, 2011, ACRS letter on the General Electric Hitachi Topical Report NEDC-33173P, Supplement 2, Parts 1, 2, and 3, "Analysis of Gamma

Scan Data and Removal of Safety Limit Minimum Critical Power Ratio (SLMCPR) Margin.” The Committee issued a response to the EDO on this matter, dated December 12, 2011, clarifying the ACRS position on the added safety margins. The ACRS agrees with staff for cores operating in Maximum Extended Load Line Limit Analysis Plus (MELLLA+) conditions and at power-to-flow ratios at or below 42 MWth/Mlbm/hr; however, for higher power-to-flow ratios, the additional SLMCPR margin should only be reduced to 0.02 until additional data are available.

- The Committee considered the EDO’s response of October 25, 2011, to comments and recommendations included in the September 22, 2011, ACRS letter on Chapters 2, 5, 8, 10, 11, 12, 13, and 16 of the Safety Evaluation Report with Open Items for Certification of the US-APWR Design. The Committee decided that it was satisfied with the EDO’s response.
- The Committee considered the EDO’s response of November 8, 2011, to comments and recommendations included in the October 17, 2011, ACRS report on Enhancing the Fuel Cycle Oversight Process. The Committee decided that it was satisfied with the EDO’s response.
- The Committee considered the EDO’s response of October 25, 2011, to comments and recommendations included in the September 19, 2011, ACRS letter on draft final Regulatory Guide 1.115, Revision 2, “Protection Against Turbine Missiles.” The Committee decided that it was satisfied with the EDO’s response.
- The Committee considered the EDO’s response of November 3, 2011, to comments and recommendations included in the September 22, 2011, ACRS report on the proposed rulemaking to introduce a site-specific performance assessment and human intrusion analysis requirement to 10 CFR Part 61. The Committee will evaluate this response again after receiving an EDO response to the ACRS report on the revised Branch Technical Position on concentration averaging and encapsulation of low-level radioactive waste.

SCHEDULED TOPICS FOR THE 590th ACRS MEETING

The following topics are scheduled for the 590th ACRS meeting, to be held on January 19-20, 2012:

- Turkey Point, Units 3 and 4, Extended Power Uprate Application
- Proposed Revision to 10 CFR 50.46, “Acceptance Criteria for Emergency Core Cooling Systems for Light-Water Nuclear Power Reactors”

- Draft Final Report on the Biennial ACRS Review of the NRC Safety Research Program
- Augmented Inspection Team Report on North Anna

Sincerely,

/RA/

Said Abdel-Khalik
Chairman

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Sincerely,

/RA/

Said Abdel-Khalik
Chairman

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Letter to The Honorable Gregory B. Jaczko, NRC Chairman, to Said Abdel-Khalik, ACRS
Chairman dated January 5, 2012

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