



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

October 5, 2015

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

SUBJECT: SUMMARY REPORT – 627th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, SEPTEMBER 9-12, 2015

Dear Chairman Burns:

During its 627th meeting, September 9-12, 2015, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following reports, letter, and memorandum:

REPORTS

Reports to Stephen G. Burns, Chairman, NRC, from John W. Stetkar, Chairman, ACRS:

- “Report on the Safety Aspects of the License Renewal Application for Byron Station Units 1 and 2 and Braidwood Station Units 1 and 2,” dated September 21, 2015
- “Draft Regulatory Basis for Containment Protection and Release Reduction for Mark I and Mark II Boiling Water Reactors,” dated September 22, 2015

LETTER

Letter to Mark A. Satorius, Executive Director for Operations, NRC, from John W. Stetkar, Chairman, ACRS:

- “Interim Staff Guidance: DC/COL-ISG-028, ‘Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application’,” dated September 23, 2015

MEMORANDUM

Memorandum to Mark A. Satorius, Executive Director for Operations, NRC, from Edwin M. Hackett, Executive Director, ACRS:

- DG-8030, "Instructions for Recording and Reporting Occupational Radiation Dose Data," dated September 15, 2015

HIGHLIGHTS OF KEY ISSUES

1. Byron / Braidwood Combined License Renewal Application

The Committee met with representatives of the NRC staff and Exelon to discuss the Byron Station Units 1 and 2 and Braidwood Station Units 1 and 2 license renewal application and the associated final safety evaluation report. During the meeting, Exelon provided an overview of the plant, identified major component replacements, and described their aging management programs and license renewal commitments. The staff discussed closure of two open items identified in the draft safety evaluation report that addressed control rod drive mechanism nozzle wear and environmentally assisted fatigue in Class 1 components. The staff concluded that the applicant had adequately addressed their concerns and closed the open items. The staff also concluded that the requirements of 10 CFR 54.29(a)(1) and (a)(2) were met for the license renewal of Byron Units 1 and 2 and Braidwood Units 1 and 2, and the operating licenses for both plants should be renewed.

Committee Action

The Committee issued a letter report to the NRC Chairman on this matter, dated September 21, 2015, with the following conclusion and recommendation: 1) the established programs and commitments by Exelon to manage age-related degradation provide reasonable assurance that Byron Units 1 and 2 and Braidwood Units 1 and 2 can be operated in accordance with their current licensing bases for the period of extended operation without undue risk to the health and safety of the public, and 2) Exelon's application for renewal of the operating licenses for Byron Units 1 and 2 and Braidwood Units 1 and 2 should be approved.

2. Review of Containment Protection and Release Reduction

The Committee met with the NRC staff, representatives from the industry, and the public to review SECY-15-0085, "Evaluation of the Containment Protection and Release Reduction for Mark I and Mark II Boiling Water Reactors Rulemaking Activities (10 CFR PART 50) (RIN-3150-AJ26)", and the staff document, "Draft Regulatory Basis for Containment Protection and Release Reduction for Mark I and Mark II Boiling Water Reactors (10 CFR Part 50)."

During the discussion, the staff presented the draft regulatory basis for Containment Protection and Release Reduction (CPRR) for Mark I and Mark II boiling water reactors rulemaking. In SECY-15-0085, the staff proposed four alternatives, which include: 1) implement Order EA-13-109 without additional regulatory actions, 2) codify Order EA-13-109, 3) codify the order and require severe accident water addition, and 4) require severe accident water addition with either the implementation of strategies to maintain wetwell venting capability or the installation of an engineered filter in the containment vent paths. The staff technical analyses examined numerous combinations of proposed venting strategies and filtration options in a quantitative probabilistic framework. The analyses demonstrated that the reduction in offsite health risk was not a substantial safety improvement per backfit criteria. The staff concluded that adoption of severe accident water addition strategies provides the greatest overall safety benefit, both in terms of protecting the containment and reducing radioactive releases. Addition of an engineered filtration system provides relatively small incremental benefits for offsite health effects. The industry also presented independent technical evaluations of CPRR strategies, which supported the same conclusions. The NRC staff concluded in its CPRR rulemaking quantitative analysis that a requirement to install external containment filters on Mark I and Mark II boiling water reactors is not justified. Three members of the public made presentations and comments regarding the CPRR activities.

Committee Action

The Committee issued a letter report to the NRC Chairman on this matter, dated September 22, 2015, and made the following conclusions and recommendation: 1) severe accident water addition and severe accident water management systems can substantially mitigate radionuclide releases in the event of a severe accident. The effectiveness of this mitigation depends on proper implementation of design, operations, logistics, procedures, and training, 2) the staff should ensure that the Order EA-13-109 commitments related to severe accident water addition and severe accident water management are fulfilled and maintained by the licensees, and 3) we agree with the staff's conclusion that the use of an engineered filtration containment venting system for boiling water reactors with Mark I and Mark II containments does not meet the threshold for a substantial safety enhancement.

2. Advanced Light Water Reactor Probabilistic Risk Assessment Requirements Interim Staff Guidance – DC/COL-ISG-028

The Committee met with representatives of the NRC staff and the Nuclear Energy Institute to discuss the final draft of DC/COL-ISG-028, "Assessing the Technical Adequacy of the Advanced Light-Water Reactor Probabilistic Risk Assessment for the Design Certification Application and Combined License Application." The staff developed this interim staff guidance (ISG) to provide consistent consideration of ASME/ANS PRA Standard RA-Sa-2009 in assessing the technical adequacy of the probabilistic risk assessment (PRA) needed for 10 CFR Part 52 design certification and combined license applications.

Committee Action

The Committee issued a letter to the Executive Director for Operations on this matter, dated September 23, 2015, and made the following recommendations: 1) the staff should issue the ISG after considering our Recommendations 2 and 3, 2) the staff should develop revised guidance that endorses PRA conformance with ASME/ANS Capability Category II requirements to the greatest extent achievable at the design certification and combined license stages of the licensing reviews, and 3) the staff should expand the revised guidance to include seismic PRA in the endorsement of Capability Category II. For the combined license, any seismic analysis should be site-specific.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the Executive Director for Operations' response of July 17, 2015, to comments and recommendations included in the June 25, 2015 ACRS letter on "PSEG Early Site Permit." The Committee was satisfied with the Executive Director for Operations' response.
- The Committee considered the Executive Director for Operations' response of July 29, 2015, to comments and recommendations included in the June 24, 2015 ACRS letter on "Grand Gulf Nuclear Station Maximum Extended Load Line Limit Analysis Plus (MELLLA+) License Amendment Request." The Committee was satisfied with the Executive Director for Operations' response.

SCHEDULED TOPICS FOR THE 628th ACRS MEETING

The following topics are scheduled for the 628th ACRS meeting, to be held on October 7-10, 2015:

- SHINE Construction Permit Application for Mo99 Medical Radioisotope Production Facility Under 10 CFR Part 50
- Assessment of the Quality of Selected Research Projects
- Interim Staff Guidance: Acute Chemical Exposure and Quantitative Standards
- Reactor Oversight Process Enhancements

Sincerely,

/RA/

John W. Stetkar
Chairman

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John W. Stetkar
Chairman

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