



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

September 25, 2013

The Honorable Allison M. Macfarlane
Chairman
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: SUMMARY REPORT - 607th MEETING OF THE ADVISORY COMMITTEE ON
REACTOR SAFEGUARDS, SEPTEMBER 5-7, 2013

Dear Chairman Macfarlane:

During its 607th meeting, September 5-7, 2013, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters and completed the following report, letter, and memoranda:

REPORT

Report to Allison M. Macfarlane, Chairman, NRC, from J. Sam Armijo, Chairman, ACRS:

- Monticello Nuclear Generating Plant Extended Power Uprate License Amendment Request, dated September 16, 2013

LETTER

Letter to Mark A. Satorius, Executive Director for Operations, NRC, from J. Sam Armijo, Chairman, ACRS:

- Draft Commission Paper, "Recommendations for Risk-Informing the Reactor Oversight Process for New Reactors," dated September 19, 2013

MEMORANDA

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

- Withdrawal of Regulatory Guide 2.4, dated September 11, 2013
- Draft Revisions to Standard Review Plan, dated September 12, 2013
- Draft Final Regulatory Guide 1.129, dated September 12, 2013

- Proposed Amendment to 10 CFR 50.55a, dated September 12, 2013

HIGHLIGHTS OF KEY ISSUES

1. Monticello Nuclear Generating Plant Extended Power Uprate Application

The Committee met with representatives of the NRC staff and the licensee, Northern States Power Company Minnesota (NSPM), to discuss the Monticello Nuclear Generating Plant (MNGP) extended power uprate (EPU) application and the associated NRC staff draft final safety evaluation. NSPM has applied for an EPU of approximately 13 % above the current licensed thermal power (CLTP) of 1,775 megawatts thermal (MWt) to 2,004 MWt. This uprate also represents approximately a 20 % increase from the original licensed thermal power of 1,670 MWt. The discussion topics included the MNGP plant modifications, margin improvement, containment accident pressure (CAP), and the steam dryer review.

The two key topics discussed were CAP and steam dryer integrity. MNGP is the first EPU request using SECY-11-0014 CAP guidance, as well as the BWR Owners Group guidance. The licensee's analyses indicated that under EPU conditions, the emergency core cooling system and containment heat removal systems will continue to meet General Design Criterion-38, with respect to rapidly reducing the containment pressure and temperature following the design basis and non-design basis events and maintaining these parameters at acceptably low levels. The staff agreed with this assessment. In 2011, the licensee replaced the original steam dryer with a Westinghouse-designed "Nordic" steam dryer. Although Nordic steam dryers have operated successfully for more than 25 years in Sweden and Finland, MNGP is the first United States BWR plant to use this design as a replacement steam dryer. The licensee performed steam dryer stress analyses for flow-induced vibration and for various ASME load combinations (normal, upset, emergency, and faulted). The staff reviewed these evaluations and found them acceptable. The steam dryer's performance will be closely monitored during power ascension, with defined hold points.

Committee Action

The Committee issued a report to the NRC Chairman on this matter dated September 16, 2013, recommending that the MNGP EPU application be approved subject to the conditions and commitments identified in the staff's draft final safety evaluation. The Committee also concluded that (1) the license condition for monitoring during power ascension testing provides reasonable assurance that unanticipated vibration modes induced in the steam dryer will be detected and addressed; (2) application of the guidance in SECY-11-0014 for CAP credit and the required analyses in this license amendment request provide reasonable assurance related to pump survivability and the availability of required net positive suction head; (3) including the evaluation of the potential for circuit issues associated with an Appendix R fire helps to identify actions that may be necessary to reduce the likelihood of inadvertent containment venting that could result in a loss of CAP; and (4) the requirement for CAP may limit the capability to implement future venting actions that may be proposed in response to the Near Term Task Force recommendations.

2. NRC Staff's Proposed Response to the Staff Requirements Memorandum on SECY-12-0081, "Risk-Informed Regulatory Framework for New Reactors"

The Committee met with representatives of the NRC staff to discuss the staff's proposed response to the staff requirements memorandum (SRM) on SECY-12-0081, "Risk-informed Regulatory Framework for New Reactors." The staff discussed the draft Commission paper and the four enclosures in response to the SRM. In particular, the staff described in detail the approaches in enclosure 2, "Technical Basis and Examples of Integrated Risk-Informed Approach Using Qualitative Measures," and enclosure 3, "Technical Evaluation of Relative Risk Measures, Including Reexamination of Pros and Cons." The staff discussed the appropriateness of existing performance indicators and thresholds. The staff also presented the proposed summary of changes to the draft paper which was sent to the Committee on June 24, 2013.

Committee Action

The Committee issued a letter to the EDO on this matter dated September 19, 2013, concluding that it is essential that the reactor oversight process for new reactors remains objective, risk-informed, understandable, and predictable; and that an increased reliance on qualitative assessments deserves close scrutiny. The Committee recommended that the staff (1) develop guidance for the structured evaluation of qualitative measures, regardless of whether absolute or relative measures are used for the quantitative assessment of risk significance and (2) develop an integrated significance determination process that places primary reliance on the use of quantitative measures of the change in risk, supplemented as necessary by qualitative assessments of conditions that are not evaluated fully in the supporting plant risk models. The Committee encouraged the staff to continue exploration of relative risk measures. Finally, the Committee concurred with the staff's recommendation to further analyze the current licensee performance indicators and to develop additional indicators, thresholds, and guidance as appropriate for monitoring the cornerstone performance objectives for new reactors.

3. Draft Final Regulatory Guide 1.79, "Preoperational Testing of Emergency Core Cooling Systems for Pressurized Water Reactors," and Regulatory Guide 1.79.1, "Initial Test Program of Emergency Core Cooling Systems for New Boiling Water Reactors"

The Committee met with representatives of the NRC staff to discuss draft final Regulatory Guides (RGs) 1.79 and 1.79.1. Revision 2 of RG 1.79 updates the 1975 guidelines for pressurized water reactors (PWRs) and adds preoperational testing guidelines for new PWR designs licensed under 10 CFR Part 52 (i.e., US-APWR, AP1000, and EPR) and new PWR designs licensed under Part 50. Regulatory Guide 1.79.1 provides preoperational testing guidance for new BWR designs licensed under 10 CFR Part 52 (i.e., ABWR and ESBWR) and new BWR designs licensed under Part 50. These two regulatory guides incorporate operating experience lessons learned from the current fleet, such as the effects of debris strainer/sump blockage and gas accumulation on the emergency core cooling system. The staff described changes incorporated into these Regulatory Guides as a result of comments made by ACRS members during a December 3, 2012, subcommittee meeting on this topic.

Committee Action

The Committee will continue its discussion of these Regulatory Guides, during its October 2-5, 2013 meeting.

4. Cyber Security Activities

The Committee met with representatives of the NRC staff to discuss activities associated with cyber security. The staff presented an overview of the reorganization of the Office of Nuclear Security and Incident Response (NSIR), the NRC's cyber security policy (i.e. regulations and regulatory guidance) and implementation (i.e. oversight and inspection), and the NRC's cyber security framework. They discussed international coordination activities, progress to date on the new White House cyber executive order, and interactions with other organizations including the Federal Energy Regulatory Commission and North American Electric Reliability Corporation. The staff also provided an update on the control of access issue associated with the staff review of requirements in Section 5.9 of IEEE 603-1991, "IEEE Standard Criteria for Safety Systems for Nuclear Power Generating Stations," and as part of the mPower Design Specific Review Standard (DSRS) initiative. In a closed session the staff described the Cyber Security Oversight Program, inter-office coordination activities, and cyber security roadmap activities associated with fuel cycle facilities, research and test reactors, and independent spent fuel storage installation.

Committee Action

This was an information briefing. No Committee action was necessary. The Committee plans to continue its review of cyber security activities during future meetings.

5. Assessment of the Quality of Selected NRC Research Projects

The Committee discussed the status of the ACRS Panels' review of the quality assessment of NRC research projects on NUREG/CR-7026, "Application of Model Abstraction Techniques to Simulate Transport in Soils," and NUREG-2121, "Fuel Fragmentation, Relocation, and Dispersal During the Loss-of-Coolant Accident."

Committee Action

The Committee will continue its discussion of the quality assessment of the research projects noted above during future meetings.

6. Withdrawal of Regulatory Guide 2.4

The Committee considered the staff's bases for withdrawing Regulatory Guide 2.4, "Review of Experiments for Research Reactors," and has no objection to the staff's proposal to withdraw this Regulatory Guide.

7. Draft Revisions to Standard Review Plan Section

The Committee considered the draft revisions to Standard Review Plan Section 3.12, "ASME Code Class 1, 2, and 3 Piping Systems, Piping Components and their Associated Supports," and decided not to review it.

8. Draft Final Regulatory Guide 1.129

The Committee considered the draft Final Regulatory Guide 1.129, "Maintenance, Testing, and Replacement of Vented Lead-Acid Storage Batteries for Nuclear Power Plants," and decided not to review it. The Committee has no objection to the staff's proposal to issue this Guide.

9. Proposed Amendment to 10 CFR 50.55a

The Committee considered the proposed amendment to 10 CFR 50.55a to incorporate by reference the latest revisions of the three Regulatory Guides that approve Code Cases published by the American Society of mechanical Engineers. The Committee has no objection to the staff's proposal to issue this Rule for public comment but would like an opportunity to review the draft final versions following the public comment period.

RECONCILIATION OF ACRS COMMENTS AND RECOMMENDATIONS

- The Committee considered the EDO's response of August 14, 2013, to comments and recommendations included in the July 18, 2013 ACRS letter on the Spent Fuel Pool Study. The Committee decided that it was satisfied with the EDO's response.

SCHEDULED TOPICS FOR THE 608th ACRS MEETING

The following topics are scheduled for the 608th ACRS meeting, to be held on October 2-5, 2013:

- Spent Fuel Pool Study and Expedited Transfer of Spent Fuel to Dry Cask Storage
- Development of Guidance in Support of Order EA-13-109 on Reliable Hardened Containment Vents
- Assessment of the Quality of Selected NRC Research Programs - FY 2013
- Draft Report on the Biennial ACRS Review of the NRC Safety Research Program

Sincerely,

/RA/

J. Sam Armijo
Chairman

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Sincerely,

/RA/

J. Sam Armijo
Chairman

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