



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

December 29, 2022

The Honorable Christopher T. Hanson
Chair
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

SUBJECT: SUMMARY REPORT – 700th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, NOVEMBER 1 - 4, 2022

Dear Chair Hanson:

During its 700th meeting, November 1 - 4, 2022, which was conducted in person and virtually, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters. The ACRS completed the following correspondence:

LETTER REPORTS

Letter Reports to Christopher T. Hanson, Chair, U.S. Nuclear Regulatory Commission (NRC) from Joy L. Rempe, Chairman, ACRS:

- Final Letter on Draft 10 CFR Part 53 Rulemaking Language, dated November 22, 2022, Agencywide Documents Access and Management System (ADAMS) Accession No. ML22319A104; and
- SECY-22-0076, "Expansion of Current Policy on Potential Common-Cause Failures in Digital Instrumentation and Control Systems," dated November 21, 2022, ADAMS Accession No. ML22313A101.

LETTER

Letter to Daniel H. Dorman, Executive Director for Operations, NRC, from Joy L. Rempe, Chairman, ACRS:

- Regulatory Guide 1.82, "Water Sources for Long-term Recirculation Cooling Following a Loss-of-Coolant Accident (LOCA)," Revision 5, dated November 22, 2022, ADAMS Accession No. ML22320A102.

MEMORANDA

Memoranda to Daniel H. Dorman, Executive Director for Operations, NRC, from Scott W. Moore, Executive Director, ACRS:

- Documentation of Receipt of Applicable Official NRC Notices to the Advisory Committee on Reactor Safeguards for November, dated November 16, 2022, ADAMS Accession No. ML22312A539; and
- Regulatory Guides, dated November 16, 2022, ADAMS Accession No. ML22312A542.

HIGHLIGHTS OF KEY ISSUES

1. Final Letter on Draft Title 10 of the Code of Federal Regulations (10 CFR) Part 53 Rulemaking Language (the Rule)

The Committee heard from the NRC staff and issued its letter dated November 22, 2022, with the following conclusions and recommendations:

- a. The Rule package and associated guidance are adequate to solicit public comments:
 - Framework A is a viable logical framework that provides a flexible technology-inclusive performance-based regulatory pathway for light water reactors (LWRs) and non-LWRs.
 - Framework B is newer and still evolving; significant changes may still occur.
- b. As staff finalizes this package, they should consider the comments in this letter, such as the following:
 - The Alternative Evaluation for Risk Insights (AERI) approach should be expanded beyond the Rule and made available for applicants to pursue under 10 CFR Parts 50 and 52.
 - The concept of a “self-reliant mitigation facility” needs a more succinct and consistent definition given its significance to operator licensing and its interrelationship with AERI.
 - The Rule should explicitly mention that there will always be a human being maintaining oversight of an operating reactor, providing a last line of defense independent of design features.
 - The discussion of defense-in-depth should be amplified to address more explicitly the possible role of inherent and passive characteristics in accident mitigation.
- c. The Committee looks forward to meeting with the staff on the evolving rule language and guidance.

2. SECY-22-0076, "Expansion of Current Policy on Potential Common-Cause Failures in Digital Instrumentation and Control Systems"

The Committee heard from the NRC staff and issued its letter dated November 21, 2022, with the following conclusion and recommendation:

- a. SECY-22-0076 provides a reasonable approach to a risk-informed evaluation of the need for diversity in DI&C systems to address common-cause failures (CCFs).
- b. Prior to implementation, the Commission should reinforce that positions in SECY-93-087 and the SRM-SECY-93-087, that are not explicitly addressed or modified by SECY-22-0076, are still applicable.

3. Regulatory Guide (RG) 1.82, "Water Sources for Long-term Recirculation Cooling Following a Loss-of-Coolant Accident (LOCA)," Revision 5

The Committee heard from the NRC staff and issued its letter dated November 22, 2022, with the following conclusions and recommendation:

- a. Revision 5 of RG 1.82 provides adequate guidance to evaluate water sources for long-term recirculation cooling following design-basis accidents (DBAs), including methodologies to provide conservative estimates of the Containment Accident Pressure (CAP) credit, if necessary.
- b. The Committee continues to stand by their recommendations in prior CAP letters, especially the recommendation that licensees should provide plant-specific analyses of the increase in risk resulting from proposed modifications that require the use of CAP credit.
- c. Eliminating the need for CAP credit, either through plant modifications or by design in new reactors, should be encouraged.

4. Discussions at the Planning and Procedures (P&P) Session

- a. The Committee discussed the Full Committee and Subcommittee schedules through March 2023 as well as the planned agenda items for Full Committee meetings.
- b. The ACRS Executive Director led a discussion of significant notices issued by the Agency since the last Full Committee meeting in September 2022 (this activity is documented in the memorandum dated November 16, 2022).
- c. The ACRS Executive Director also led a discussion of draft regulatory guide and regulatory guide reviews and recommendations as documented in the memorandum dated November 16, 2022.
- d. Member Ballinger led a discussion of the status of the SHINE operating license application review and reiterated that the final letter on this topic is scheduled to take place at the December Full Committee meeting.

- e. Member-at-large Petti led a discussion of upcoming activities on the Kairos (HERMES) construction permit application review and highlighted that the Committee anticipates receiving the staff's safety evaluation reports in December and that Subcommittee meetings will be scheduled in calendar year 2023. He also reiterated that Lead Member chapter assignments were already sent to the members.
- f. ACRS Executive Director Moore led a discussion about the upcoming ACRS leadership elections scheduled for the planning and procedures session of the December Full Committee meeting (December 2, 2022). He reviewed the by-laws with the Committee regarding the process and stated that any member not interested in the position of Chairman or Vice Chairman should notify him via email by November 18, 2022.
- g. Member Halnon led a discussion about cyber security at nuclear power plants. He stated that a planning meeting was held on October 26, 2022, between ACRS members Halnon, Rempe, Sunseri, and March-Leuba and ACRS staff member, Kent Howard, to discuss nuclear power plant cyber-security status and bulk electrical system vulnerabilities. Participants agreed that an ACRS Plant Operations, Radiation Protection, and Fire Protection Subcommittee should explore NRC, plant owner/operator, and transmission operator readiness to deal with future cyber threats. Planning has begun for the extent and timing of future ACRS Subcommittee and associated Full Committee meetings.
- h. Member Halnon led a discussion regarding his recommendation on the decommissioning rulemaking. He noted that the proposed rule entitled "Regulatory Improvements for Production and Utilization Facilities Transitioning to Decommissioning" (commonly known as the "Decommissioning Rule") has reached a point where the public comment period has closed, and the staff is resolving the last set of public comments. This proposed rule is expected to be sent to the Commissioners as final language in October 2023. The language focuses on the smooth transitioning from operations to decommissioning and the process has had very high public and industry engagement. Many of the regulatory areas of interest have been technically dealt with through exemptions. This proposed rule changes the regulatory language to allow routine transitioning to decommissioning without the need for the many exemptions involving topics such as emergency planning, security, and record retention. In 2018, the ACRS determined that no committee review was necessary. Little has changed technically since this time, and the proposed rule process continues to have extensive public and industry involvement. Therefore, Member Halnon recommended that no ACRS review is warranted at this time.

The Committee agreed with Member Halnon's recommendation.

- i. Chairman Rempe led a discussion about the University of Illinois at Urbana-Champaign Topical Report, "Quality Assurance Program Description." She noted that the University of Illinois at Urbana-Champaign (UIUC), in collaboration with Ultra Safe Nuclear Corporation, is planning to apply for a construction permit for a high-temperature gas-cooled test reactor to be sited at the UIUC campus. These organizations have submitted a topical report for staff review and approval describing the quality assurance program they will use to support this effort. The staff is performing an acceptance review and developing a schedule. The staff has asked if the ACRS intends to review and comment on this topical report so that ACRS review can be incorporated into the schedule. UIUC

references ANSI/ANS-15.8-1995, "Quality Assurance Program Requirements for Research Reactors," consistent with NRC guidance for research and test reactors.

The Committee agreed that the staff should incorporate the ACRS review of this topical report into the review schedule.

- j. Chairman Rempe led a discussion on the status of an ACRS outreach effort to international advisory committees regarding the planned multinational event to be held in March 2023. A planning session will be held via teleconference on December 5, 2022, with representatives from ACRS and advisory committees to nuclear regulatory agencies in Finland, France, Japan, and the United Kingdom.
- k. Vice Chairman Kirchner led a discussion about a NuScale topical report that has been updated to accommodate the updated NuScale design. The staff is evaluating NuScale Topical Report TR - 107522, "Applicability Range Extension of NSP4 Critical Heat Flux Correlation Supplement 1 to TR-0116-21012-P-A," Revision 1. This is a supplement to a topical report the Committee reviewed and commented upon in a letter dated June 15, 2018 (ADAMS Number ML18166A303). The staff asked if the Committee wanted to review the supplemental topical report (ADAMS Number ML22014A248) based on their previous review. Lead Member Kirchner, in consultation with Member March-Leuba, recommends not to review this topical report.

The Committee agreed with the recommendation.

- l. Alesha Bellinger reminded ACRS members and staff that there will be a holiday party on during the December 1, 2022, lunch break of the next Full Committee meeting.
- m. Executive Director Moore led a discussion of reconciliations for the Fourth Interim Letter on 10 CFR Part 53 Rulemaking Language [Member Petti], and Draft Regulatory Guide 1.250, Revision 0, Dedication of Commercial-Grade Digital Instrumentation and Control Items for Use in Nuclear Power Plants [Member Brown]. The Committee decided to take no further action on the staff responses to the Committee letters recognizing that the Committee drafted its final letter on the 10 CFR Part 53 letter during this Full Committee meeting and that the Committee anticipates further engagement on this rulemaking process through the draft and final rulemaking stages.
- n. There was a closed portion of the planning and procedures session to discuss personnel matters.

5. Scheduled Topics for the 701st ACRS Meeting

The following topics are on the agenda for the 701st ACRS meeting scheduled for November 29 – December 2, 2022:

- SHINE Medical Technologies, LLC Operating License Application – Final Safety Evaluation Report;
- Draft Guide (DG)-1374, "Criteria for Use of Computers in Safety Systems at Nuclear Power Plants"; and
- Kairos Fuel Qualification Methodology Topical Report.

Sincerely,



Signed by Rempe, Joy
on 12/29/22

Joy L. Rempe
Chairman

December 29, 2022

SUBJECT: SUMMARY REPORT – 700th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, November 1 - 4, 2022

Accession No: ML22327A162 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
NAME	LBurkhart	LBurkhart	SMoore <i>(by LBurkhart for)</i>	JRempe
DATE	11/30/22	11/30/22	12/28/22	12/29/22

OFFICIAL RECORD COPY