



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

November 22, 2022

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

SUBJECT: SUMMARY REPORT – 698th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, SEPTEMBER 7-9, 2022

Dear Chair Hanson:

During its 698th meeting, September 7-9, 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

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

- Draft Regulatory Guide 1.250, Revision 0, Dedication of Commercial-Grade Digital Instrumentation and Control Items for Use in Nuclear Power Plants, dated September 27, 2022, ADAMS Accession No. ML22264A193.

MEMORANDA

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

- Documentation of Receipt of Applicable Official NRC Notices to the Advisory Committee on Reactor Safeguards for September 2022, dated September 22, 2022, ADAMS Accession No. ML22259A077, and
- Regulatory Guides, dated September 23, 2022, ADAMS Accession No. ML22259A083.

HIGHLIGHTS OF KEY ISSUES

1. Draft Regulatory Guide (RG) 1.250, Revision 0, Dedication of Commercial-Grade Digital Instrumentation and Control (DI&C) Items for Use in Nuclear Power Plants

The Committee heard from NRC and Nuclear Energy Institute (NEI) staff members and issued its letter dated September 27, 2022, with the following conclusion and recommendations:

- a. RG 1.250 supplements RG 1.164 and endorses with clarifications NEI 17-06 and the International Electrotechnical Commission (IEC) 61508 standard. Together, they provide sufficient guidance to use Safety Integrity Level (SIL) certification for the dependability assessment portion of the dedication of commercial-grade DI&C items.
- b. The staff should ensure applicants have confirmed that SIL-certified programmable electronic devices proposed for use in nuclear power plant safety applications can incorporate architecture and defense-in-depth functionality guidance contained in NRC review documents pertinent to the proposed applications.
- c. RG 1.250 should be issued.

2. NuScale Topical Report on Emergency Planning Zone Plume

Representatives from NuScale presented to the Committee on the subject topical report and Office of Nuclear Reactor Regulation (NRR) staff presented their safety evaluation to the Committee. The Committee discussed various issues with the NuScale representatives and NRR staff. The Committee plans to write a letter on this topic during the October Full Committee meeting.

3. SHINE Operating License Application Review Including Technical Specifications and Cyber Security Topics and Memoranda Review

Representatives from SHINE provided presentations on the topics of technical specifications and cyber security. The NRR staff also provided their views on these topics as well as the status of the safety evaluation reports.

The Committee also discussed various aspects of the SHINE operating license application review, including memoranda documenting lead Member findings of SHINE Final Safety Analysis Report chapters and associated NRC staff Safety Evaluation Reports. These memoranda will support future Committee deliberations and a letter from the Committee on the operating license application.

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

- a. The Committee discussed the Full Committee and Subcommittee schedules through January 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 July 2022 (this activity is documented in the memorandum dated September 22, 2022).

- c. The ACRS Executive Director also led a discussion of reviews of draft guides (DGs) and RGs (the Committees positions were documented in the memorandum dated September 23, 2022).
- d. The Committee approved Member Halnon's attendance to the Nuclear Energy Institute's Licensing Forum on September 21, 2022. Member Halnon will speak on leadership and impacts on new regulations, guidance, and plant operations.
- e. Member Bier led a discussion on the NRC Staff's Interim Staff Guidance for the Safety Review of Light-Water Power Reactor Construction Permit Applications. She provided a recommendation that the subject document does not warrant further review by the Committee. The Committee agreed with her recommendation.
- f. Member Ballinger led a discussion about the status of the SHINE operating license application review. Currently, a final letter on the Committee's recommendation to the Commission is planned to be discussed and documented at the December 2022 Full Committee meeting.
- g. Member Halnon led a discussion of the status of the Abilene Christina University molten salt research reactor construction permit application review. At the time of the ACRS September Full Committee meeting, the staff was performing an acceptance review of the application. Member Halnon noted that no ACRS report is required due to the type of reactor and the power level. However, the staff is willing to brief the Committee on any safety topics of interest.
- h. Chairman Rempe led a discussion of the status of outreach efforts to international counterparts regarding the planned multinational event to be held in March 2023. Several international advisory committee members have requested that an introductory and planning virtual meeting be held prior to the March 2023 event. This virtual meeting with regulator advisory committee members is scheduled for December 5, 2022. In addition, several participants have requested information about whom will be participating in this effort. To address this request, a document with brief biographies and photos of participants is being prepared.
- i. Chairman Rempe led a discussion of a proposed rule on radioactive source security and accountability. The Committee agreed to provide the following as documentation of its position :

The Government Accountability Office (GAO) has conducted several audits and investigations involving the NRC and Agreement States' radioactive materials licensing and security programs. In response to results from the GAO investigations and an associated SRM [See COMJMB-16-0001 "Proposed Staff Re-Evaluation of Category 3 Source Accountability" dated October 18, 2016 (ML16292A812)], NRC staff recommended options in SECY-17-0083 [See "Proposed Staff Re-Evaluation of Category 3 Source Accountability," dated October 18, 2016 (ML16292A812)] to address four overarching concerns related to the security and accountability of Category 3 quantities of radioactive material. Staff developed these options based on input obtained from public comments and public meetings (including one meeting with the Advisory Committee on Medical Isotopes). One of the recommended options includes pursuing rulemaking to revise 10 CFR Part 30, 40, and 70, to

require safety and security equipment to be in place for all unknown applicants prior to issuing a license. Proposed changes may impact some licensees with sealed sources. NMSS staff has asked if ACRS would like to review the draft rulemaking text.

Member Rempe recommended that the Committee not review this rulemaking text. The recommended changes to address the four overarching concerns are administrative in nature and designed to increase oversight over Category 3 quantities of radioactive material. Considering our on-going efforts to focus on risk-important issues and the fact that the Advisory Committee on Medical Isotopes has engaged on this topic, she observed that Committee efforts would be better spent on other topics.

However, some of the rulemaking will involve changes to 10 CFR Parts 30, 40, and 70. Other on-going staff efforts may also lead to changes in 10 CFR Part 30, which is currently used to accommodate fusion energy systems. Member Rempe also suggested the Committee request that NMSS staff inform the Committee if any of the proposed changes to 10 CFR Part 30 may affect such fusion-based systems.

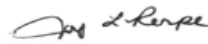
The Executive Director noted that there were no reconciliations this month.

5. Scheduled Topics for the 699th ACRS Meeting

The following topics are on the agenda for the 699th ACRS meeting scheduled for October 5-7, 2022:

- SECY Paper on Fusion Energy Systems Regulatory Framework,
- NuScale Topical Report, "Methodology for Establishing the Technical Basis for Plume Exposure Emergency Planning Zones," Revision 2
- Office of Nuclear Regulatory Research Briefing on Materials Harvesting

Sincerely,



Signed by Rempe, Joy
on 11/22/22

Joy L. Rempe
Chairman

November 22, 2022

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