



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

May 8, 2024

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

SUBJECT: SUMMARY REPORT – 714th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, APRIL 3-4, 2024

Dear Chair Hanson:

During its 714th meeting, April 3-4, 2024, which was conducted in person and virtually, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters. The ACRS completed the following correspondence:

MEMORANDUM

Memorandum to Raymond V. Furstenau, Acting 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 April 2024, dated April 17, 2024, Agencywide Documents Access and management System (ADAMS) Accession No. ML24108A022.

HIGHLIGHTS OF KEY ISSUES

a. Research Topic on Non-Light Water Reactor Code Development

As part of the Committee efforts in producing the triennial report on the NRC Safety Research Program, the ACRS heard from the Office of Regulatory Research staff regarding its efforts on development of non-light water reactor codes that will be used to support the NRC's review of advanced reactor applications.

b. NuScale Standard Design Approval (SDA) Application Topic Memoranda

Chair Kirchner led the review of member authored memoranda regarding reviews of final safety analysis report and draft safety evaluation chapters of the NuScale SDA application. The following chapter memoranda were discussed and documents the lead Member review results:

- Chapter 2, “Site Characteristics and Site Parameters,” (Halnon lead)
- Chapter 10, “Steam and Power Conversion System,” (Sunseri lead)
- Chapter 11, “Radioactive Waste Management,” (Petti lead)
- Chapter 13, “Conduct of Operations,” (Halnon lead) and
- Chapter 17, “Quality Assurance and Reliability Assurance,” (Halnon lead)

These memoranda will be finalized and made publicly available in the future.

c. Discussions at the Planning and Procedures Session

1. The Committee discussed the Full Committee and Subcommittee schedules through September 2024 as well as the planned agenda items for Full Committee meetings.
2. The ACRS Executive Director led a discussion of significant notices issued by the Agency since the last Full Committee meeting in March 2024. The Executive Director documented this activity in a memorandum dated April 17, 2024, ADAMS Accession No. ML24108A022.
3. There were no regulatory guides (RG) discussed at this Full Committee meeting.
4. Vice Chair Halnon led a discussion of the planned trip to Region II sites for the week of July 22, 2024. This visit will include a visit to the Technical Training Center, a Tennessee Valley Authority operating plant (Sequoyah Nuclear Plant Units 1 and 2), and Region II offices including a Plant Operations Subcommittee meeting while at Region II. Additional logistical information will be provided to members in the future.
5. Member-at-large Petti led a discussion of the planned subcommittee and full committee meetings to support the ACRS review of the Kairos Hermes 2 construction permit application. Currently, multiple chapters are planned to be discussed in subcommittee meetings on May 16 and June 4. A third subcommittee meeting is scheduled for June 25, 2024, to support preparations in drafting the Committee’s letter on its review. The final Committee letter on this application is planned for deliberation during the July 2024 full committee meeting.
6. Member Ballinger led a discussion about the details concerning the site visit by several members to the GEH fuel fabrication facility scheduled for September 16-18, 2024.
7. Member-at-large Petti led a discussion about the status of future activities regarding the regulation of fusion facilities and he highlighted that the Commission directed the staff in SRM-SECY-23-001, “Options for Licensing and Regulating Fusion Energy Systems,” to consider such applications under Title 10 of the *Code of Federal Regulations* (10 CFR) Part 30, “Rules of general applicability to domestic licensing of byproduct material.” Normally, the ACRS is not involved in 10 CFR Part 30 applications. The committee agreed to future discussions on this issue and potential ACRS involvement as may be warranted by radiologic hazards.

8. Members Brown and Roberts led a discussion of the Committee's potential review of WCAP-18810, Rev 0, "Advanced Logic System v2 Platform Elimination of Technical Specification Surveillance Requirements." They provided the following input for discussion.

The purpose of this topical report is to provide a methodology to eliminate certain Technical Specification (TS) Surveillance Requirements (SRs) related to the Advanced Logic System (ALS) v2 platform. In this topical report a reference is made to a document describing each diagnostic in the ALS v2 platform, and references to the ALS v2 Failure Modes, Effects, and Diagnostic Analyses (FMEDAs) for each ALS v2 board. A licensee applying this topical report will develop a system level Failure Modes and Effects Analysis (FMEA) and will need to validate that the ALS v2 board FMEDAs cover all failure modes identified in the system level FMEA.

Section 8 of the topical report provides an overall summary of the analysis for:

1. Channel Checks,
2. Channel Operational Tests,
3. Actuation Tests, and
4. Response Time Tests.

It concludes that ALS v2 System analog and digital boards are so well designed and stable that they are performance validated by system self-diagnostics. The topical report also concludes that upwards of 100 surveillance requirements, including most time response testing, can be eliminated.

The topical report acknowledges that Regulatory Guide (RG) 1.152 requires "Self-diagnostic functions [be] verified during periodic functional tests," and proposes using checks such as "operator rounds and MCR board walkdowns, as well as system health checks performed by system engineering on a periodic basis."

Discussion – As shown by the complexity of this topical report, it can be difficult to justify why system self-diagnostics are considered sufficiently complete to eliminate the need for manual surveillances. Even after performing such a detailed assessment, the reasonableness of its assumptions and its completeness can be questioned. Additionally, it is not evident from the topical report how the internal system checkers are verified without manual SRs, since "operator rounds" and "main control room board walkdowns" do not verify the self-checkers are actually running and within calibration and response time plant requirements and settings.

Therefore, Members Brown and Roberts recommended a review of the topical report, including the conclusions reached by the staff, in light of whether the justification for eliminating SRs is sufficient.

The Committee agreed with this recommendation.

9. Executive Director Moore led a discussion on one reconciliation regarding the Committee's letter entitled "Review of Advanced Reactor Content of Application Project/Technology-Inclusive Content of Application Project (ARCAP/TICAP) Guidance." The staff's response and ACRS analysis was discussed, and it was agreed that no further action on the staff's response was warranted.

10. Technical Assistant Rob Krsek led a discussion of preparations for the Committee's presentations to the Commission at the June 7, 2024, Commission Meeting. Presenters discussed their slides and intended presentations and agreed to finalize their slides in time to conduct dry runs at the May 2024 full committee meeting. As a reminder the presenters and topics on the agenda include:

- Kirchner – Overview
- Greg Halnon - ACRS Improvements to Effectiveness and Efficiency
- Dave Petti - Practical Applications of Committee Improvements in Recent Reviews
- Matt Sunseri – Reports on the Safety Aspects of Recent License Renewal and Subsequent License Renewal Application Reviews of St. Lucie Plant, Units 1 and 2; Comanche Peak Nuclear Power Plant, Units 1 and 2; and Monticello Nuclear Generating Plant, Unit 1
- Ron Ballinger - Low Level Radioactive Waste Disposal Proposed Rule (Part 61)

Rob Krsek will collate all presentations and route for review and comment by the Committee members and presenters.

d. Scheduled Topics for the 715th ACRS Meeting

The following topics are on the agenda for the 714th ACRS meeting scheduled for April 30 – May 3, 2024:

- Comanche Peak Nuclear Power Plant Units 1 and 2 license renewal application,
- Monticello Nuclear Generating Plant Unit 1 subsequent license renewal application,
- Westinghouse topical report on incremental high burnup extension, and
- Research topic – non-light-water reactor code development letter writing.

Sincerely,



Signed by Kirchner, Walter
on 05/08/24

Walter L. Kirchner
Chair

May 8, 2024

SUBJECT: SUMMARY REPORT – 714th MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, APRIL 3-4, 2024

Accession No: ML24121A136 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	RKrsek	WKirchner
DATE	05/01/2024	05/01/2024	05/07/2024	05/08/2024

OFFICIAL RECORD COPY