



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

May 19, 2026

The Honorable Ho K. Nieh  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

**SUBJECT: SUMMARY REPORT AND CERTIFIED MINUTES – 734<sup>th</sup> MEETING OF THE  
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, APRIL 8 THROUGH  
9, 2026**

Dear Chairman Nieh:

During its 734<sup>th</sup> meeting held April 8 through 9, 2026, which was conducted in person and virtually, the Advisory Committee on Reactor Safeguards (ACRS) discussed several matters. The Committee's efforts continued to be focused on statutorily required functions as directed in Executive Order (EO) 14300, "Ordering the Reform of the Nuclear Regulatory Commission."

This document serves as the certified minutes as required by the Federal Advisory Committee Act (FACA) and Title 10 of the *Code of Federal Regulations* (10 CFR) Part 7.

During this meeting the ACRS completed the following correspondence:

LETTER REPORT

- Letter Report to Ho K. Nieh, Chairman, U.S. Nuclear Regulatory Commission (NRC), from Gregory H. Halnon, "Report on the Electric Power Research Institute Topical Report 'Loss-of-Coolant-Accident-Induced Fuel Fragmentation, Relocations and Dispersal with Leak-Before-Break Credit: Alternative Licensing Strategy,' dated April 28, 2026, Agencywide Documents Access and Management System (ADAMS) Accession No. [ML26113A352](#).

MEMORANDUM

Memorandum to Michael F. King, Executive Director for Operations, U.S. NRC, from Marissa G. Bailey, Executive Director, ACRS:

- April 2026 ACRS Full Committee Meeting – Topical Reports, and Official Notices, dated April 23, 2026, ADAMS Accession No. [ML26112A071](#).

## HIGHLIGHTS OF KEY ISSUES

The Agenda for this meeting was published in the [Federal Register](#) on March 11, 2026. The transcripts of the meeting are available on the ACRS public website. The attendance list may be found in Enclosure 2 of this document.

A. Electric Power Research Institute Topical Report, “Loss-of-Coolant-Accident-Induced Fuel Fragmentation, Relocation and Dispersal [FFRD] with Leak-Before-Break [LBB] Credit: Alternative Licensing Strategy”

The Committee heard from the applicant and NRC staff about this topical report (TR) and the staff’s associated safety evaluation (SE). The Committee issued its letter dated April 28, 2026, with the following conclusions and recommendations:

1. The ACRS finds that the Electric Power Research Institute Topical Report Alternative Licensing Strategy (ALS) is grounded in established regulatory precedent and provides a sound technical basis to the dispositioning of safety issues posed by a postulated loss-of-coolant accident (LOCA) with fuel fragmentation, relocation, and dispersal (FFRD) in high burnup pressurized water reactor (PWR) fuel. The TR and associated NRC staff SE, with the limitations and conditions (L&Cs) stated therein, provide an appropriate basis for plant-specific license amendment (LA) requests referencing this methodology.
2. The LBB-based exclusion of fuel dispersal from 10 CFR Section 50.46 design basis for large-break LOCAs is the ALS’s most consequential element. The eXtremely Low Probability of Rupture probabilistic fracture mechanics analysis (MRP-480) establishes that PWR reactor coolant system (RCS) main loop pipe rupture frequency remains well below  $10^{-6}$ /reactor year over an 80-year plant life. The analysis further shows that detectable leakage would precede any large break condition with ample time for reactor operators to identify and respond to the leakage. We agree with the staff that this provides an adequate basis to exclude consideration of fuel dispersal in large break LOCA analyses. For small and intermediate pipe break LOCAs, fuel dispersal is excluded through demonstration of no cladding burst. Applications of Westinghouse’s Full Spectrum LOCA methodology show that peak cladding temperature remains below the cladding burst threshold with margin for the analyzed plant configurations. Because cladding burst is the necessary precondition for fuel dispersal, the absence of burst eliminates the dispersal pathway. We agree with the NRC staff that this provides an adequate basis to exclude consideration of fuel dispersal in small and intermediate pipe break LOCA analyses.
3. Non-piping RCS components fall outside the scope of 10 CFR Section 50.46(c), which limits the Emergency Core Cooling System analysis to piping breaks. Nevertheless, the ALS documents that the integrity of these components is addressed through conservative design rules, operating restrictions, and licensee required in-service inspections. We agree with the staff that these existing regulatory commitments constitute an adequate defense-in-depth basis for addressing non-piping RCS components within the context of the ALS.
4. The staff’s SE should be issued.

## B. Discussions during the Planning and Procedures Session

1. The Committee discussed the Full Committee (FC) and Subcommittee (SC) schedules through September 2026 as well as the planned agenda items for FC meetings.
2. There were no regulatory guides (RGs) to discuss at this meeting.
3. The Committee heard from the responsible SC Chairmen regarding the following meetings and engagements that have occurred since the last FC meeting in March 2026:
  - a. A SC meeting was conducted on March 17, 2026, to discuss Electric Power Research Institute Topical Report 'Loss-of-Coolant-Accident-Induced Fuel Fragmentation, Relocations and Dispersal with Leak-Before-Break Credit: Alternative Licensing Strategy (the subject of this April FC meeting and letter discussed in Section A of this report),
  - b. A closed SC engagement was conducted on March 26, 2026, to discuss the draft rules associated with EO 14300 changes, and
  - c. A SC meeting was conducted on April 7, 2026, to discuss the Clinch River construction permit application (more details in 4.b below).
4. The Committee discussed the following ongoing and near-term new reactor application reviews:
  - a. Long Mott Generating Station (LMGS) construction permit application (CPA). Member Martin led this discussion.

An informal meeting was held on March 22, 2026, with member Martin, ACRS staff and Office of Nuclear Reactor Regulation (NRR) to discuss the status on the LMGS CPA review. Staff discussed the status of the review, the regulatory audit, and topical report to be submitted.

An informal planning meeting was held on April 1, 2026, with Member Martin, ACRS staff, NRR staff, and representatives from X-energy. The focus of the meeting was to confirm an upcoming May 5, 2026, SC meeting and to collaboratively determine the sequence of agenda topics addressing the Unique, Novel, and Noteworthy (UNN) Elements associated with the ACRS Review of the LMGS Construction Permit Application. Discussions occurred on aligning the applicant's interpretation of the UNN items and clarifying how the associated technical areas would be presented, specifically whether they would be discussed in open or closed sessions, and in what order to cover the focus areas. X-Energy committed to presenting the design overview, safety strategy, and background information to establish context for the UNN discussion in an open session. Given the proprietary nature of the design, the actual UNN topics will be addressed in a closed session.

The NRC staff will keep ACRS informed regarding the near-term future submittal of the CPA revisions and updates to the Regulatory Engagement Plan, following the most recent submittal on March 3, 2026. The FC meeting is planned for October 2026.

- b. Clinch River CPA application. Member-at-Large Harrington continued his discussion of this review.

A SC meeting was held on April 7, 2026, at which the applicant (TVA) presented on UNN aspects of the application including the safety strategy and stability topics.

The advanced SE with no open items is scheduled to be sent to the ACRS by May 8, 2026. The staff will present on the SE at the FC meeting in June. A final letter will be the subject of the June and/or July FC meetings.

- c. The Committee discussed briefly the following other ongoing and near-term new reactor applications: the Fermi America (Project Matador) combined license application for four Westinghouse Advanced Passive (AP) 1000 reactors in Amarillo, Texas, the AP1000 design certification amendment application, and the recently accepted Belews Creek early site permit application in Stokes County, North Carolina.
5. The Committee discussed the status of high priority rulemaking activities including:
    - a. 10 CFR Part 57, "Licensing Requirements for Microreactors and Other Reactors with Comparable Risk Profiles." Vice Chairman Petti reiterated that the Committee plans to have a FC meeting on this topic and write a letter after the rule is published in the *Federal Register* for public comment. This is currently on the May 2026 FC meeting agenda.
    - b. EO 14300 Rulemakings. Vice Chairman Petti and Technical Assistant Rob Krsek led a discussion on this topic. Subcommittee Engagements are being scheduled for Section 5 of EO 14300 and the Committee will decide which areas to review in Sections 5(b), 5(d), 5(e), 5(f), 5(g), and 5(h). If necessary, FC meetings and letter reports will be scheduled when the draft proposed rules are published in the *Federal Register* for public comment.
  6. The ACRS Executive Director led a discussion on the following TR review recommendations and documented the Committee's decision in a memorandum dated April 23, 2026 (ADAMS Accession No. [ML26112A071](#)). These TRs support new reactor facility applications and proposed reactor safety standards for operating reactors:
    - a. OKLO TR, "Staffing Plan Methodology" (ADAMS Accession No. [ML26034C411](#)).

Member Kirchner led a discussion of this topical report. The basic methodology of this TR is based on application of human factors engineering principles applied to staffing analysis, as well as citing relevant regulatory framework (i.e., SECY-11-0098, NUREG-1791, NUREG-0700, NUREG-0711, and DRO-ISG-2023-02). The applicant is seeking multiple exemptions to 10 CFR 50.54 (j), (k), and (m).
    - b. OKLO TR, "Product-Based Operator Licensing Framework" (ADAMS Accession No. [ML25071A135](#)).

Member Kirchner led a discussion of this topical report. This TR addresses a multi-unit, multi-site concept for fleet operations of the OLKO product line, and is referenced in its "Staffing Plan Methodology" TR. The applicant indicated they may

revise its general approach outlined in the TR to make use of the generally licensed operator concept in recent 10 CFR 53 rulemaking, hence it is premature for ACRS to review this TR now.

- c. OKLO TR, "Principal Design Criteria for the Aurora Powerhouse," (ADAMS Accession No. [ML26070A422](#)).

Member Kirchner led a discussion of a revised recommendation for review of this TR. The TR provides information on the development of principal design criteria (PDC) for the OKLO Aurora Powerhouse, based on RG 1.232, "Guidance for Developing Principal Design Criteria for Non-Light Water Reactors." The TR references the Aurora Powerhouse, but only uses that terminology to describe the nuclear power plant generically (pool type sodium fast reactor (SFR) technology) and does not refer to specific structures, systems, or components. Reference is made to the overall safety of the Aurora reactor design being based on inherent features and passive safety functions typical of SFRs, as demonstrated at the experimental breeder reactor EBR-II and fast flux test facility. Two specific design features cited include metal fuel and a passive, always-on reactor vessel auxiliary cooling system. Power level is not cited in the TR, but available information suggests a 250 MWth/75 MWe reactor module is contemplated.

In developing their PDCs, OKLO followed guidance in RG 1.232 by first assessing the applicability of SFR design criteria (DC), whether modification was required to specific design features of the Aurora Powerhouse, and prior to modification of those DC, whether the advanced reactor DC or modular high-temperature gas-cooled reactor (MHTGR) DC could be directly adopted. Notably, OKLO has taken the approach of adopting functional containment performance criteria ([SECY-18-0096](#)) and replaced SFR-DC 16, 38-43, and 50-57 with MHTGR-DC 16, 71, and 72. The TR states that the Aurora Powerhouse does not rely on electrical power to support any important to safety functions during anticipated operational occurrences or postulated accidents, thereby deleting SFR-DC 17 and 18. SFR-DC 19 is modified to reflect that "during power operation, the plant is maintained in safe and stable conditions by automatic controls, and operator action is not required." The justification states: "The Aurora Powerhouse does not have a traditional control room and instead utilizes an onsite monitoring room." In addition, OKLO would delete SFR-DC 70 and 75-77 (intermediate cooling system integrity) since the "failure of the intermediate coolant system has no significant impact on the safety of the plant." These highlighted areas should be the focus of a Committee review, subject to availability of a baseline design and further technical justification.

For all three of these topical reports, Member Kirchner identified the need for additional design information to facilitate an adequate ACRS review. Consequently, he recommended that the staff issue the SEs with L&Cs and that the ACRS review the implementation of these TRs during the application review phase when more design information is available. The Committee agreed.

7. There were no TR reviews that needed documentation during this Planning and Procedures (P&P) session.
8. There were no reconciliations of ACRS letter reports discussed during this meeting.

9. The Executive Director of ACRS led a discussion of the following important NRC announcements ACRS members were required to review, which is documented in a memorandum to the Executive Director for Operations dated April 23, 2026 (ADAMS Accession No. [ML26112A071](#)):
  - a. [Senior Management Changes](#)
  - b. [European Union Border Control Changes](#)
  - c. [Delivering the Mission – Part 53](#)
  - d. [Thank You for the Work on EO 14300](#)
10. There was a closed session as part of this P&P session to discuss personnel topics.
11. The following topics are on the agenda for the 735<sup>th</sup> ACRS FC meeting, which will be held May 6 through 8, 2026:
  - a. Draft rules on 10 CFR Part 57 and other EO 14300 changes

I hereby certify, to the best of my knowledge and belief, that the above minutes of the subject meeting are an accurate record of the proceedings for that meeting. In accordance with FACA and 10 CFR Part 7, "ADVISORY COMMITTEES," Section 7.13, "Minutes of advisory committee meetings."

Sincerely,



Signed by Halnon, Gregory  
on 05/19/26

Gregory H. Halnon  
Chairman

Enclosures:

- 1.) List of Acronyms
- 2.) List of Attendees

## LIST OF ACRONYMS

10 CFR	Title 10 of the <i>Code of Federal Regulations</i>
ACRS	Advisory Committee on Reactor Safeguards
ADAMS	Agencywide Documents Access and Management System
ALS	Alternative Licensing Strategy
AP	Advanced Passive
CPA	Construction Permit Application
DC	Design Criteria
EO	Executive Order
EPRI	Electric Power Research Institute
FACA	Federal Advisory Committee Act
FC	Full Committee
FFRD	Fuel Fragmentation, relocation, and dispersal
L&C	Limitations and Conditions
LA	License Amendment
LBB	Leak-Before-Break
LMGS	Long Mott Generating Station
LOCA	Loss of Coolant Accident
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
MWe	Megawatt Electric
MWth	Megawatt Thermal
PDC	Principal Design Criteria
P&P	Planning and Procedures
PWR	Pressurized Water Reactor
RCS	Reactor Coolant System
RG	Regulatory Guide
SC	Subcommittee
SE	Safety Evaluation
TR	Topical Report
UNN	Unique, Novel, or Noteworthy

## ATTENDEES

<u>Attendees</u>	<u>Attendee Affiliation (If known)</u>
Annie Kammerer	ACRS Member
Craig Harrington	ACRS Member-At-Large
Dave Petti	ACRS Vice Chairman
Gregory Halnon	ACRS Chairman
Matt Sunseri (virtually)	ACRS Member
Scott Palmtag	ACRS Member
Thomas Roberts	ACRS Member
Walt Kirchner	ACRS Member
Robert Martin	ACRS Member
Ron Ballinger	ACRS Consultant
Alesha Bellinger	ACRS Staff
Andrea Torres	ACRS Staff
Christina Antonescu	ACRS Staff
Christopher Brown	ACRS Staff
Janet Riner	ACRS Staff
Kent Howard	ACRS Staff
Larry Burkhart	ACRS Staff
Marissa Bailey	ACRS Staff
Quynh Nguyen	ACRS Staff
Rob Krsek	ACRS Staff
Sandra Walker	ACRS Staff
Shandeth Walton	ACRS Staff
Tammy Skov	ACRS Staff
Weidong Wang	ACRS Staff
Hossein Nourbakhsh	ACRS Staff
Angie Buford	NRC Staff
Antony Calvo	NRC Staff
Brandon Wise	NRC Staff
Chris Van Wert	NRC Staff
David Dijamco	NRC Staff
Donna Williams	NRC Staff
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Ekaterina Lenning	NRC Staff
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Greg Hutchins (Unverified)	
Kris Cummings (NuScale) (Unverified)	
Malek Sabbidine (Unverified)	
PJ Seel (BTI) (Unverified)	
Sandra Munoz (Unverified)	