



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

March 14, 2022

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

SUBJECT: SUMMARY REPORT – 692nd MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, FEBRUARY 2 - 4, 2022

Dear Chairman Hanson:

During its 692nd meeting, February 2 – 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, Chairman, U.S. Nuclear Regulatory Commission (NRC) from Joy L. Rempe, Chairman, ACRS

- Report on the Safety Aspects of the Subsequent License Renewal Application Review of the North Anna Power Station, Units 1 and 2, dated February 28, 2022, ADAMS Accession No. ML22046A065, and
- Preliminary Rule Language for 10 CFR Part 53, Subpart F, “Requirements for Operations,” Interim Report, dated February 17, 2022, ADAMS Accession No. ML22040A361.

LETTERS

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

- Safety Evaluation for Holtec Licensing Topical Report, HI-2200750, Revision 0, “Holtec Spent Fuel Pool Heatup Calculation Methodology,” dated February 25, ADAMS Accession No. ML22046A226, and
- NuScale Topical Report, TR-0920-71621-P, “Building Design and Analysis Methodology for Safety-related Structures,” Revision 1, dated February 18, 2022, ADAMS Accession No. ML22041A542.

MEMORANDA

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

- Regulatory Guides and Interim Staff Guidance, dated February 14, 2022, ADAMS Accession No. ML22038A209, and
- Documentation of Receipt of Applicable Official NRC Notices to the Advisory Committee on Reactor Safeguards for February 2022, dated February 14, 2022, ADAMS Accession No. ML22038A214.

HIGHLIGHTS OF KEY ISSUES

1. Report on the Safety Aspects of the Subsequent License Renewal Application Review of the North Anna Power Station, Units 1 and 2 (North Anna)

The Committee heard from the applicant and NRC staff on this topic and issued its letter on February 28, 2022, with the following conclusion and recommendation:

- a. The established programs and the commitments made by Dominion Energy to manage age-related degradation provide reasonable assurance that North Anna can be operated in accordance with its current licensing basis for the subsequent period of extended operation without undue risk to the health and safety of the public.
- b. The Dominion Energy application for the subsequent license renewal of the operating license for North Anna should be approved.

2. Preliminary Rule Language for Title 10 of the Code of Federal Regulations (10 CFR) Part 53, Subpart F, "Requirements for Operations," Interim Report

The Committee heard from the NRC staff and other stakeholders on this topic and issued its letter dated February 17, 2022, with the following conclusions and recommendations:

- a. The staff is methodically working through the delicate balance of flexibility and predictability in regulations for operator staffing.
- b. The staff should consider the suggestions identified in this letter to ensure the 10 CFR Part 53 approach yields equivalent safety to current regulatory approaches.
- c. The staff should approach the concept of not having a Shift Technical Advisor (STA) by having the applicant justify why the STA is not needed rather than a blanket elimination of this position. This is particularly important for the expected wide application of first-of-a-kind technologies that may be licensed under this rule.
- d. The concept of non-licensed, certified operators should not be pursued. Staff should focus on adapting the existing approach to the NRC operator licensing process to produce training, qualification, and licensing requirements based on the degree of safety reliance attributed to operator actions for the specific plant design. This should take advantage of inherent and passive safety features of the nuclear power plant.

- e. Staff should develop guidance for judging the acceptability of limited scope simulators.
3. Safety Evaluation for Holtec Licensing Topical Report, HI-2200750, Revision 0, "Holtec Spent Fuel Pool Heatup Calculation Methodology"

The Committee heard from the NRC staff and applicant on this topic and issued its letter dated February 25, 2002, with the following conclusions and recommendations:

- a. The methodology documented in HI-2200750, Revision 0, when used with the four limitations and conditions in the staff draft safety evaluation (SE) report, is a technically-sound approach for calculating peak fuel clad temperature during postulated beyond-design-basis draining events in spent fuel pools.
 - b. The conservative assumptions in Holtec's methodology, supported by detailed staff analysis using independent methods, compensates for limited experimental data.
 - c. The credibility assessment framework documented in NUREG/KM-0013 used by the staff, increases rigor, enhancing confidence in the evaluation. Its use should be encouraged for other reviews.
 - d. The staff draft SE report should be issued.
4. NuScale Topical Report (TR)-0920-71621-P, "Building Design and Analysis Methodology for Safety-related Structures," Revision 1

The Committee heard from the NRC staff and the applicant on this topic and issued its letter dated February 18, 2022, with the following conclusion and recommendation:

- a. The NuScale TR describes an acceptable building design and analysis methodology to evaluate Seismic Category I and II structures.
 - b. The staff's SE approves the methodology with limitations and conditions. The SE report should be issued.
5. Discussions at the Planning and Procedures (P&P) Session
- a. The Committee discussed the Full Committee and Subcommittee schedules through June 2022 as well as the planned agenda items for Full Committee meetings.
 - b. The ACRS Executive Director also led a discussion of significant notices issued by the Agency since the last Full Committee meeting in December 2021 (this activity is documented in the memorandum dated February 14, 2022).
 - c. The Committee discussed recommendations on review of a draft and a final regulatory guide (DG and RG), as well as draft interim staff guidance (ISG), as documented in the memorandum mentioned above, dated February 14, 2022.
 - d. The Committee approved Member-at-large Petti's attendance at the NRC's Regulatory Information Conference and acknowledged that he will be providing his perspectives on 10 CFR Part 53 issues as part of a panel on the subject.

- e. Chairman Rempe led a discussion about the staff's efforts related to drafting a strategic plan regarding use of artificial intelligence. Member Bier will be the member in charge for this topic, and it was discussed that a joint subcommittee meeting has been scheduled for July 21, 2022. The subcommittees involved are those associated with research activities, digital instrumentation and control systems, and plant operations.
- f. The Committee discussed preparations for the next Commission meeting with the ACRS which is scheduled for June 3, 2022. The Committee members will decide at the next Full Committee meeting on the topics and presenters to propose in the draft scheduling note. The Committee's proposed scheduling note is due to SECY by March 4, 2022.
- g. Member Ballinger led a discussion about the status of the SHINE operating license application review and when ACRS interactions could take place (the ACRS' "rainbow chart" was already populated with proposed Subcommittee and Full Committee meeting dates for this topic). Member Ballinger provided proposed details regarding lead Members for Chapters and potentially important cross-cutting issues. Member Ballinger requested feedback from members on his proposals. It was also noted that the applicant and NRC staff are scheduled to present information to the NPUF - SHINE Subcommittee on February 16, 2022.
- h. Member Petti led a discussion about the status of the recently docketed Kairos (HERMES test reactor) construction permit application. The ACRS staff is currently working with the NRC staff to obtain information about the review and dates for possible ACRS interactions. It was stated that the current schedule has the NRC staff issuing a final safety evaluation report in September 2023. Member Petti also referred to proposals sent to the Members about lead members for chapters as well as possible cross-cutting issues. Feedback was requested from the Members.
- i. Chairman Rempe led a discussion of the work balance/subcommittee structure issue and stated that she sent a proposed matrix to all members. This activity was carried out in accordance with the new ACRS Chairman's duties as detailed in the bylaws. After the discussion, the matrix was revised to add another subcommittee for a new design center engaging in pre-application activities, and the ACRS staff was directed to publish the new Subcommittee structure.
- j. Executive Director Moore led a discussion about the possibility of the Committee visiting a Regional Office and an operating plant during 2022. Weidong Wang from the staff is coordinating with Region III to explore the possibility of a visit. It was also mentioned that a potential visit would have to be coordinated with the other work of the Committee. Member Ballinger added that selected Members are planning to visit the Framatome Fuel facility in September 2022 and that this is part of the planned interactions with several fuel vendors.
- k. Executive Director Moore led a discussion of reconciliations for the following topics: (1) Safety Evaluation from Framatome, Inc. Topical Report ANP-10349P, Revision 0, "Galileo Implementation in LOCA Methods" [March-Leuba]; (2) NUREG 2246, "Fuel Qualification for Advanced Reactors Draft Report for Comment" [Petti]; (3) Biennial Review and Evaluation of NRC Safety Research Program [Rempe]; (4) NUREG/CR-XXX, "Fuel Qualification for Molten Salt Reactors, Draft Report for Comment" [Petti]; and (5) Draft Final Rule, "Emergency Preparedness [EP] for Small Modular Reactors [SMRs] and Other New Technologies [ONTs]" [Halnon].

For the first 4 topics, the Committee decided to take no further action.

Regarding the EP for SMRs and ONTs issue and the NRC staff's response to the Committee's letter, the Committee decided to document the following:

In the Committee's November 16, 2021, letter report, the Committee recommended several changes to the draft guidance and draft rule language for EP for SMRs and ONTs. In their December 17, 2021, response, the staff determined no changes were necessary in response to our recommendations concerning the proposed rule and guidance. The Committee agreed to stand by its letter report. In particular, the Committee disagreed with the rationale used by the staff for rejecting Recommendation 1. This recommendation would continue to involve the Federal Emergency Management Agency (FEMA) review of proposed emergency plans when the emergency planning zone (EPZ) is within the site boundary. The decision to exclude FEMA from review of the proposed emergency plan for a commercial reactor license application could adversely affect safeguards gained from federal agency partnerships established to address lessons learned from the Three Mile Island accident in 1979. The FEMA review of a proposed emergency plan for commercial reactors should continue during the licensing process, regardless of the size of the EPZ. This ensures the NRC finding of adequate protection of the public supported by experts on offsite response plans at FEMA.

- I. The Committee held a closed portion of the P&P session to discuss administrative and personnel issues, as advertised in the agenda published in the *Federal Register*.

6. Scheduled Topics for the 693rd ACRS Meeting

The following topics were on the agenda for the 693rd ACRS meeting scheduled for March 2 – 4, 2022:

- Integration of Source Term Activities in Support of Advanced Reactor Initiatives
- Proposed Draft Rulemaking for Aligning 10 CFR Parts 50 and 52
- Information briefing on the National Institute of Standards and Technology (NIST) test reactor event.

Sincerely,



Signed by Rempe, Joy
on 03/14/22

Joy L. Rempe
Chairman

March 14, 2022

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