



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

June 14, 2022

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

**SUBJECT: SUMMARY REPORT – 695<sup>th</sup> MEETING OF THE ADVISORY COMMITTEE ON REACTOR SAFEGUARDS, MAY 4 - 5, 2022**

Dear Chairman Hanson:

During its 695<sup>th</sup> meeting, May 4 - 5, 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 REPORT**

Letter Report 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 Point Beach Nuclear Plant, Units 1 and 2, dated May 18, 2022, ADAMS Accession No. ML22130A521.

**MEMORANDA**

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

- Regulatory Guide, dated May 24, 2022, ADAMS Accession No. ML22138A391, and
- Documentation of Receipt of Applicable Official NRC Notices to the Advisory Committee on Reactor Safeguards for May 2022, dated May 24, 2022, ADAMS Accession No. ML22138A385.

## HIGHLIGHTS OF KEY ISSUES

### 1. Point Beach Nuclear Plant, Units 1 and 2 (Point Beach) Subsequent License Renewal Application

The Committee heard from the NRC staff and licensee representatives and issued its letter dated May 18, 2022, with the following conclusion and recommendation:

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

### 2. Information Briefing on University Leadership Program

The Committee heard from the NRC staff on this topic.

### 3. Information Briefing on the Digital Twins Topic

The Committee heard from the NRC staff, representatives of the Advanced Research Projects Agency-Energy (ARPA-E) and representatives of the Electric Power Research Institute (EPRI) on this subject.

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

- a. The Committee discussed the Full Committee and Subcommittee schedules through September 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 April 2022 (this activity is documented in the memorandum dated May 24, 2022).
- c. The Committee discussed recommendations on review of a regulatory guide (RG), as documented in the memorandum mentioned above, dated May 24, 2022.
- d. Member Halnon led a discussion of the planned visit to the Region 3 office the week of August 15, 2022. This visit will include site visits to the Region 3 office, the SHINE construction site, and the Byron operating plant.
- e. 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).

- f. Member Petti led a discussion about the various Committee activities involving the 10 CFR Part 53 rulemaking language and noted that Subcommittee and Full Committee meeting agenda items have already been identified on the rainbow chart and anticipated work schedule.
- g. Members Ballinger and Halnon led a discussion about the joint Subcommittee meeting held virtually on April 27, 2022, about the Seabrook alkali-silica reaction (ASR) issue. Members Ballinger and Halnon recommended future interactions on this issue with the staff, as warranted, and as results of staff follow up with the licensee develop.
- h. Member March-Leuba led a discussion about the Accident Analysis – Thermal Hydraulic Subcommittee meeting held on April 21, 2022, regarding the Westinghouse topical report on ADOPT fuel. Member March-Leuba summarized the outcome of the meeting and stated that the Subcommittee does not recommend writing a Full Committee letter. The Committee agreed to the following documentation for this summary report.

“On April 21, 2022, the Accident Analysis/Thermal Hydraulic Subcommittee reviewed Westinghouse Topical Report (TR) WCAP-18482-P, Revision 0, “Westinghouse Advanced Doped Pellet Technology (ADOPT™) Fuel,” and the associated staff safety evaluation (SE). The TR provides a detailed description of the ADOPT fuel pellets that describes and characterizes the material properties through a review of past in-reactor operating experience and qualification data. The SE reviews generic qualifications of the ADOPT fuel material, its properties and performance, and the modeling approach in safety analysis methods. The ADOPT fuel is intended to be used in NRC-licensed PWRs with NRC-approved zirconium-based cladding and fuel enrichment up to 5%.

This TR is unique because of the extensive in-reactor operating experience in Europe since 1999 and the wide range of qualification data, including power-ramp testing, which increases the confidence that ADOPT fuel will perform safely under both accident and anticipated operating conditions. The staff has found that the licensed PAD5 fuel performance methodology is adequate for these analyses when used with modified correlations to account for ADOPT properties.

The staff review has been thorough and covered the following two general areas: the effects of additives on the following major material properties; and in-reactor fuel performance concerns such as oxidation, melting limits, densification, rod growth, fission gas release, and fuel fragmentation, relocation, and dispersal. The staff review also considered impacts on reactivity insertion accidents, on acceptance thresholds, and on accident source terms. They also evaluated the extensive set of in-reactor and qualification fuel data.

The staff SE concludes that the ADOPT fuel, within the range of applicability defined in the limitations and conditions, satisfies the requirements of General Design Criteria (GDC)-10, “Reactor design,” GDC-27, “Combined reactivity control systems capability,” and GDC-28, “Reactivity limits,” and GDC-35, “Emergency core cooling.” Member March-Leuba, in consultation with the members present at the Subcommittee Meeting, concurs with this conclusion and recommends that the staff issue the SE report.”

- i. Alesha Bellinger led a discussion of time and attendance reporting for the Committee Members and Consultants as Special Government Employees (SGEs) noting that there is a 130-day limit per fiscal year for SGEs.
- j. Member Ballinger led a discussion about the planned visit to the Framatome Fuel Facility scheduled for the week of September 19, 2022.
- k. Chairman Rempe led a discussion about the efforts being undertaken by a working group on outreach to international counterparts. Several proposed topics were discussed as well as a list of countries with which to interact on these issues. The Committee concurred with the WG recommendation that Chairman Rempe initially discuss this proposed activity and request a list of topics with representatives from the following countries: Canada, Finland, France, Japan, the Republic of Korea, and the United Kingdom.
- l. The Committee held a closed portion of the P&P session to discuss administrative, sensitive, and personnel issues, as advertised in the agenda published in the *Federal Register*.

Note that there were no reconciliations this month.

5. Scheduled Topics for the 696<sup>th</sup> ACRS Meeting

The following topics are on the agenda for the 696<sup>th</sup> ACRS meeting scheduled for June 1 - 3, 2022:

- SHINE memoranda review
- Title 10 of the *Code of Federal Regulations* (10 CFR) Part 53, Framework A
- Common Cause Failure SECY paper outline
- Although not part of the full committee meeting, the Commission meeting with the ACRS will take place on June 3, 2022, from 10:00 a.m. – noon.

Sincerely,



Signed by Rempe, Joy  
on 06/14/22

Joy L. Rempe  
Chairman

June 14, 2022

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