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

July 26, 2021

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

SUBJECT: RULEMAKING PLAN ON REVISION OF INSERVICE TESTING AND INSERVICE INSPECTION PROGRAM UPDATE FREQUENCIES REQUIRED IN 10 CFR 50.55A

Dear Chairman Hanson:

During the 687th meeting of the Advisory Committee on Reactor Safeguards (ACRS), July 7-9, 2021, we reviewed the staff's "Rulemaking Plan on Revision of Inservice Testing [IST] and Inservice Inspection [ISI] Program Update Frequencies Required in 10 CFR 50.55a," and "10 CFR 50.55a Project Final Report – Embark Venture Studio." During this meeting, we had the benefit of discussions with the Nuclear Regulatory Commission (NRC) staff and the referenced documents.

CONCLUSION AND RECOMMENDATION

1. We concur with the proposed recommendations in SECY-21-0029 to extend the required ISI/IST plan update interval from 120 months to 240 months, with a potential future extension to 288 months.

2. Staff should also move expeditiously to implement the two additional recommendations in the EMBARK Venture Studio's report regarding streamlining rules for Code Case approval and decreasing the frequency of Code Edition rulemakings.

BACKGROUND

The NRC currently incorporates by reference in 10 CFR 50.55a various consensus Codes and Standards, including the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, Section III, Division 1, "Rules for Construction of Nuclear Facility Components (Section III), and Section XI, Division 1"; "Rules for Inservice Inspection of Nuclear Power Plant Components" (Section XI); and the ASME "Operation and Maintenance of Nuclear Power Plants," Division 1, OM Code: Section IST (OM Code). Section XI specifies provisions for ISI of structures, systems, and components (SSCs) in nuclear power plants. The OM Code sets forth provisions for IST of pumps, valves, and dynamic restraints (snubbers) in nuclear power plants. ASME updates these Codes on a regular basis through a consensus standard development process, and the NRC's current practice is to incorporate by reference each new

edition in 10 CFR 50.55a, following its publication, which occurs roughly every 2 years. The consensus process also includes publication of Code Cases, which are acceptable alternatives to the published Codes that can be used on an optional basis.

Licensees are required to update their ISI and IST plans every 120 months in accordance with the latest OM and Section XI editions incorporated in 10 CFR 50.55a. The 120-month update requirement corresponds to the ten-year inspection intervals in these plans.

EMBARK Venture Studio (EMBARK), an organization within the U.S. NRC, Office of Nuclear Reactor Regulation, was created to identify barriers to innovation and launch initiatives that improve the way the NRC works to make safe use of nuclear technology possible and to help transform the agency into a modern, risk-informed regulator. EMBARK initiated a project to evaluate how the NRC might streamline the way it regulates consensus Codes and Standards under 10 CFR 50.55a. The EMBARK team developed a list of initial ideas, along with associated technical bases and cost estimates. Based on criteria that included legal feasibility, industry needs, greatest cost benefit, and no negative impact on safety, the team agreed to three recommendations for management consideration:

1. Relax the requirement to update ISI and IST programs every 10 years following the next update to 2019/2020 ASME Codes.

2. Institute streamlined rules for unconditional approval of Code Cases.

3. Decrease the frequency of Code Edition rulemakings.

The EMBARK team concluded that these recommendations would contribute to the efficiency and effectiveness of the NRC's 10 CFR 50.55a regulatory activities.

SECY-21-0029 was issued in March 2021, requesting Commission approval to pursue recommendation (1) above with a revised update interval of 240 months, as well as approval and delegation to the Executive Director for Operations (EDO), and a potential subsequent rulemaking to extend the update interval from 240 months to 288 months.

The ACRS is on record, via previous letters issued in 1999 and 2000, of opposing a related staff recommendation (SECY-99-017) to totally eliminate the 120-month update requirement for ISI and IST programs.

DISCUSSION

The requirement for 120-month updates to ISI/IST programs dates back to the early days of nuclear power plant development, when ASME Section XI was first issued (early 1970s). During this time, and in subsequent decades, the Section XI Code was in a state of continual expansion and development. Many of the changes reflected operating experience with new and varied degradation mechanisms. Discovery of new degradation mechanisms has slowed greatly in recent years, and the ASME Codes have matured to the point that major changes are no longer being published. As a result, relaxing the requirement to update ISI and IST programs from every 120 months to 240 months would have minimal impact on safety and provide flexibility to the industry, once licensees have implemented recent ASME Section XI and OM Code editions (2019/2020 or later).

Regarding the earlier ACRS letters on this topic, new information, data, and models were evolving quite rapidly at that time (1999-2000). That is no longer the case. Also, the earlier proposal to which ACRS objected (SECY-99-017), was to totally eliminate the regulatory requirement to periodically update ISI/IST programs. The current proposal is just to extend the time period between required periodic updates, not eliminate them.

Other major developments since our 1999 and 2000 letters on this topic are the Generic Aging Lessons Learned reports, licensee implementation of Aging Management Programs as part of License Renewal programs, and issuance of License Renewals (LRs) and Subsequent License Renewals (SLRs). Many of the safety-related SSCs included in these activities rely on the ASME Boiler and Pressure Vessel (BPV) Code as the reference standard. The interval length for LRs and SLRs (20 years) is compatible with the proposed change to 240 months.

If new degradation mechanisms or acceleration of known mechanisms occur, new Code Cases could be developed quickly when needed as a short-term response. The NRC will continue to review new or revised Code Cases for incorporation into the regulations on a biannual basis. The NRC can mandate the use of certain Code Cases to supplement the current Code of record if new safety concerns are identified.

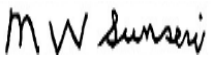
Lastly, ASME is currently evaluating a change to the ten-year inspection interval imposed by the current Code. SECY-21-0029 also requests approval and delegation to the EDO, potential subsequent rulemaking to extend the update interval from 240 months to 288 months for consistency with this change. We have no objection to this potential change, should it occur.

SUMMARY

We concur with the proposed recommendations in SECY-21-0029 to extend the required ISI/IST plan update interval from 120 months to 240 months, with a potential future extension to 288 months. Staff should also move expeditiously to implement the two additional recommendations in the EMBARK Venture Studio's report regarding streamlining rules for Code Case approval and decreasing the frequency of Code Edition rulemakings.

We are not requesting a formal response to this letter report.

Sincerely,


Signed by Sunseri, Matthew
on 07/26/21

Matthew W. Sunseri
Chairman

REFERENCES

1. U.S. Nuclear Regulatory Commission, "10 CFR 50.55a Project Final Report – Embark Venture Studio," June 2021 (ML20153A752).

2. U.S. Nuclear Regulatory Commission, "SECY-21-0029, Rulemaking Plan on Revision of Inservice Testing and Inservice Inspection Program Update Frequencies Required in 10 CFR 50.55a," March 2021 (ML20273A286).

3. U.S. Nuclear Regulatory Commission, “SECY-00-0011 Requirement for Licensees to Update Their Inservice Inspection and Inservice Testing Programs Every 120 Months,” January 2000 (ML003675659).

4. U.S. Nuclear Regulatory Commission, ACRS Letter-SECY-00-0011, “Evaluation of the Requirement for Licensees to Update Their Inservice Inspection and Inservice Testing Programs Every 120 Months,” February 2000 (ML003684514).

5. U.S. Nuclear Regulatory Commission, “SECY-99-017, Proposed Amendment to 10 CFR 50.55a,” January 1999 (ML12265A465).

6. U.S. Nuclear Regulatory Commission, ACRS Letter- SECY-99-017, “Proposed Amendment to 10 CFR 50.55a” April 1999 (ML090020134).

7. U.S. Nuclear Regulatory Commission, NRC NUREG-2191, Volume 1, “Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report,” July 2017 (ML17187A031).

8. U.S. Nuclear Regulatory Commission, NRC NUREG-2191, Volume 2, “Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report,” July 2017 (ML17187A204).

9. U.S. Nuclear Regulatory Commission, NRC NUREG-1801, Revision 2, “Generic Aging Lessons Learned (GALL) Report,” December 2010 (ML103490041).

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