



POLICY ISSUE

(Information)

August 10, 2022

SECY-22-0075

FOR: The Commissioners

FROM: Daniel H. Dorman
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SUBJECT: STAFF REQUIREMENTS-SECY-21-0029 INSERVICE TESTING
AND INSERVICE INSPECTION PROGRAM RULEMAKINGS
UPDATE [NRC-2018-0291/3150-AK23]

PURPOSE:

This paper informs the Commission of the staff's plan to address new information and changed circumstances that affect the implementation of Staff Requirement Memoranda (SRM)-SECY-21-0029, "Staff Requirements—SECY-21-0029—Rulemaking Plan on Revision of Inservice Testing and Inservice Inspection Program Update Frequencies Required in 10 CFR 50.55a," dated November 8, 2021 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML21312A490). This paper does not address any new commitments or resource implications.

BACKGROUND:

In SRM-SECY-21-0029, the Commission delegated two rulemakings to the staff:

Rulemaking 1: Extend the interval for the inservice examination and testing (IST)¹ and inservice inspection (ISI) code of record updates required in Title 10 of the *Code of Federal Regulations* (10 CFR) 50.55a, "Codes and standards," from 10 years to 20 years (120 months to 240 months) for licensees that have updated their IST and ISI programs to the most recent edition and addenda for the ASME OM of Nuclear Power Plants, Division 1, OM Code: Section IST

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¹ The IST interval is called "in-service test interval" in earlier editions of the American Society of Mechanical Engineers (ASME) Operation and Maintenance (OM) of Nuclear Power Plants, Division 1, OM Code: Section IST (OM Code) and "inservice examination and test interval" in more recent editions of the OM Code.

(OM Code) and ASME Boiler and Pressure Vessel Code (BPV Code) incorporated by reference in 10 CFR 50.55a by the effective date of the final rule.

Rulemaking 2: Extend the code of record update interval from 20 years to 24 years (240 months to 288 months), if ASME increases the ISI interval to 12 years.

As indicated in the rulemaking plan, SECY-21-0029 (ADAMS Accession No. ML20273A286), the staff has combined Rulemaking 1 with the next routine ASME code rulemaking, which happens to be a rulemaking to approve ASME code cases. This ASME code rulemaking was initiated in January 2022 to incorporate by reference Revision 21 of Regulatory Guide (RG) 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1"; Revision 40 of RG 1.84, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III"; and Revision 5 of RG 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code." These code case rulemakings are referred to by the revision number for RG 1.84, in this case, the "ASME Code Case Revision 40" rulemaking (ASME CC Rev. 40).

DISCUSSION:

Due to new information and changed circumstances described below, the staff has determined that several changes in the anticipated implementation of SRM-SECY-21-0029 are needed. Specifically, the changes include: (1) combining Rulemaking 2 with Rulemaking 1 to address unanticipated ASME actions; (2) making conforming revisions to references to "10-year plant inservice inspections ... required by § 50.55a" in Appendix J, "Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," which were identified after the SRM was issued; and (3) adding conforming and clarifying changes to address issues encountered during the development of the proposed rule. This information paper describes the planned changes.

Combining Rulemaking 1 and Rulemaking 2

In SRM-SECY-21-0029, the Commission delegated to the staff a second rulemaking, Rulemaking 2, to extend the ISI and IST code of record update interval from 20 to 24 years if ASME increases the ISI interval to 12 years. When drafting SECY-21-0029, the staff anticipated that ASME would make that change in a future code edition, which would only be applicable after licensees adopt that future code edition. However, since SRM-SECY-21-0029 was issued, ASME has published BPV Code Case N-921, "Alternative 12-yr Inspection Interval Duration Section XI Division 1," and OM Code Case OMN-31, "Alternative to Allow Extension of ISTA-3120 Inservice Examination and Test Intervals From 10 Years to 12 Years." These code cases allow 12-year ISI and IST intervals, respectively, as an alternative to the 10-year intervals currently required by the ASME codes. The U.S. Nuclear Regulatory Commission (NRC) staff is considering approving these code cases in the ASME CC Rev. 40 rulemaking.

The NRC staff has no technical or safety concerns with these two code cases because they will not result in significant delays or reductions in ISI or IST scheduling. In addition, ASME has specifically requested that BPV Code Case N-921 be included in the current ASME CC Rev. 40 rulemaking. The staff also understands that industry stakeholders could benefit from using these code cases, particularly N-921, which may afford licensees meaningful additional flexibility to schedule ISI activities in-line with refueling outages with minimal or no effect on safety and performance. The NRC staff normally considers approving code cases under the delegation in SRM-SECY-76-389, "Staff Requirements-Policy Session 76-37," dated August 24, 1976 (ADAMS Accession No. ML091470326). However, Code Cases N-921 and OMN-31, if

approved separately from Rulemaking 2, could create a misalignment between the ASME intervals and the code of record updating requirements and could cause inconsistencies with the plan approved in SRM-SECY-21-0029 for the following two reasons.

First, approving these code cases ahead of Rulemaking 2 could introduce a misalignment between the ASME ISI and IST intervals and the code of record update intervals in 10 CFR 50.55a(f)(4) and (g)(4). For example, the current requirement is that the licensee must update its code of record every 10 years. If a licensee elects to use Code Case N-921, the ISI interval would be 12 years, but the licensee would be required to update its code of record after 10 years, which is impractical because the planned inspections over 12 years are defined by the code of record at the start of the interval. Combining Rulemakings 1 and 2 into ASME CC Rev. 40, by approving both these code cases and extension of the code of record interval to 24 years, would avoid this potential misalignment while maintaining consistency with the plan approved in SRM-SECY-21-0029.

Second, the rulemaking plan approved in SRM-SECY-21-0029 assumed that the extension from 10 years to 12 years would be made in future code editions, which would be inherently limited in application to licensees that have adopted the latest code editions. These code cases, unless conditioned otherwise, would be available for use by licensees on any edition of the ASME codes, not just the latest editions as anticipated in SECY-21-0029. Therefore, to maintain consistency with SECY-21-0029, the staff plans to condition Code Cases N-921 and OMN-31 in the proposed ASME CC Rev. 40 to allow their use only by licensees that have updated to the ASME BPV Code and ASME OM Code, 2019–2020 editions (the latest editions incorporated into 10 CFR 50.55a) or later. Once ASME BPV Code Case N-921 and OMN-31 are conditioned in the final rule, licensees that choose to submit an alternative under 10 CFR 50.55a(z) to use either code case without updating to the ASME 2019–2020 Edition or later would have to include a site-specific basis as to why the condition is not applicable to their site. Thus, these conditions and the inherent limit on generic alternatives will ensure that extension of the ASME interval from 10 years to 12 years is only allowed for licensees using the latest code editions, consistent with the plan approved in SRM-SECY-21-0029.

To ensure alignment, consistency, and clarity with respect to the ISI interval, the IST interval, and the code of record interval, the staff is considering adding a definition for code of record interval with an explicit reference to the ISI and IST intervals in the proposed rule:

- For licensees with codes of record before the ASME BPV Code, Section XI, 2019 Edition, and the OM Code, 2020 Edition, as incorporated by reference, the code of record interval is the same as the ISI or IST interval as defined by the ASME BPV Code, Section XI, and the OM Code, respectively.
- For licensees with codes of record of the ASME BPV Code, Section XI, 2019 Edition, and the OM Code, 2020 Edition, or later, as incorporated by reference, the code of record interval is two consecutive ISI intervals or IST intervals as defined by the ASME BPV Code, Section XI, and the OM Code, respectively.

By linking the code of record update interval to the length of the ASME ISI and IST intervals in these definitions, rather than revising 10 CFR 50.55a(f)(4) and (g)(4), the proposed rule would enhance clarity by ensuring that rules for computing the intervals clearly reside in the codes or code cases (and any applicable conditions). Further, these definitions will allow licensees

flexibility in the selection of the ISI interval or IST interval (by voluntarily adopting Code Case N-921 or OMN-31).

Consolidating Rulemakings 1 and 2 from SRM-SECY-21-0029 into one rulemaking effort will ensure a consistent regulatory approach where ISI/IST intervals are aligned with the code of record intervals and would also minimize the need for licensees to seek alternatives or exemptions to maintain this alignment.

Revisions Identified after SRM-SECY-21-0029: 10 CFR Part 50, Appendix J

Appendix J, “Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors,” to 10 CFR Part 50, “Domestic Licensing of Production and Utilization Facilities,” contains the requirements for containment leak testing. The Type A leak tests required in Option A of Appendix J are necessary to demonstrate continued leak tightness of the containment. In Appendix J, the 10-year ISI interval is explicitly linked to the scheduling of the Type A tests for Option A (prescriptive requirements), which states, “The third test of each set shall be conducted when the plant is shutdown for the 10-year plant inservice inspections.²” Footnote 2 states, “[s]uch inservice inspections are required by § 50.55a.” This reference to a 10-year plant inservice inspection was not addressed in the rulemaking plan, and if left unchanged, would create a potentially erroneous reference in conflict with other changes approved in SRM-SECY-21-0029. The staff was not aware of this reference when it drafted SECY-21-0029 and recently identified it during the development of the draft proposed rule.

While this requirement provides for regular leak test intervals, there is no indication in the rulemaking record or operating experience that a 10-year interval for the three leak tests is technically significant, and another regular leak-test interval could not be used. The staff notes that the leak test timing aligns with the ASME BPV Code, Section XI, inspection periods in the 10-year ISI interval (i.e., one leak test per inspection period with periods ending at years 3, 7, and 10 of a 10-year ISI interval). A change from a 10-year to a 12-year ASME ISI interval would achieve the same leak tightness goal, with only a small change in timeframe between leak tests (i.e., one per inspection period with periods ending at years 4, 8, and 12 of a 12-year ISI interval). In addition, NUREG-1493, “Performance-Based Containment Leak-Test Program,” issued September 1995 (ADAMS Accession No. ML20098D498) has shown that light-water reactor accident risk is relatively insensitive to the containment leakage rate because the risk is dominated by accident sequences that result in failure or bypass of containment. Therefore, the change from a 10-year to a 12-year ASME ISI interval would have minimal impact on the safety of the containment.

The staff is considering revisions to Appendix J to directly reference the interval defined in a revised 10 CFR 50.55a, to accommodate a 12-year ISI interval, without changing the intent or basis for the requirement in Appendix J. Because the intent and basis for the requirement would be unchanged, the revision would be minor and would not raise a significant policy issue within the meaning of Management Directive (MD) 6.3, “The Rulemaking Process,” dated July 3, 2019 (ADAMS Accession No. ML19211D136).

Other Conforming and Clarifying Changes

Currently, 10 CFR 50.55a references “120-month interval” using different terminology (i.e., 120-month inspection interval, 120-month ISI program interval, 120-month interval, and 120-month interval of operation). To enhance regulatory clarity, the staff is considering adding a definition paragraph to 10 CFR 50.55a to differentiate between the ASME ISI (inspection) interval, the

ASME IST interval, and the code of record update interval. The staff will modify references to these intervals within 10 CFR 50.55a to reflect these new definitions. These conforming and clarifying revisions are consistent with the delegation in the SRM-SECY-21-0029.

CONCLUSION:

Due to new information (i.e. faster ASME action on Code Cases N-921 and OMN-31), the NRC staff has revised its plans for implementing SRM-SECY-21-0029 as described in this paper. The staff's view is that these revised plans remain within the approved delegations of authority in SRM-SECY-21-0029, SRM-SECY-76-389, and MD 6.3.

COORDINATION:

The Office of the General Counsel reviewed this package and has no legal objection.

Daniel H. Dorman
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SUBJECT: STAFF REQUIREMENTS-SECY-21-0029 INSERVICE TESTING AND
 INSERVICE INSPECTION PROGRAM RULEMAKINGS UPDATE
 [NRC-2018-0291/3150-AK23] DATED: August 10, 2022

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