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NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

[NRC–2018–0289]

RIN 3150–AK21

American Society of Mechanical Engineers 2021–2022 Code Editions

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to incorporate by reference the 2021 Edition of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code and the 2022 Edition of the American Society of Mechanical Engineers Operation and Maintenance of Nuclear Power Plants, Division 1, OM Code: Section IST, for nuclear power plants. This action is in accordance with the NRC’s policy to periodically update the regulations to incorporate by reference new editions of the American Society of Mechanical Engineers Codes and is intended to maintain the safety of nuclear power plants and to make NRC activities more effective and efficient. This amendment also incorporates editorial changes that do not change the technical information.

DATES: This final rule is effective on September 30, 2024. The incorporation by reference of certain publications listed in the regulation is approved by the Director of the Federal Register as of September 30, 2024.

ADDRESSES: Please refer to Docket ID NRC–2018–0289 when contacting the NRC about the availability of information for this action. You may obtain publicly available information related to this action by any of the following methods:

- *Federal Rulemaking Website:* Go to <https://www.regulations.gov> and search for Docket ID NRC–2018–0289. Address questions about NRC dockets to Helen

Chang; telephone: 301–415–3228; email: Helen.Chang@nrc.gov. For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- *NRC’s Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select “Begin Web-based ADAMS Search.” For problems with ADAMS, please contact the NRC’s Public Document Room (PDR) reference staff at 1–800–397–4209, at 301–415–4737, or by email to PDR.Resource@nrc.gov. For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the “Availability of Documents” section.

- *NRC’s PDR:* The PDR, where you may examine and order copies of publicly available documents, is open by appointment. To make an appointment to visit the PDR, please send an email to PDR.Resource@nrc.gov or call 1–800–397–4209 or 301–415–4737 between 8 a.m. and 4 p.m. eastern time, Monday through Friday, except Federal holidays.

- *Technical Library:* The Technical Library, which is located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852, is open by appointment. Interested parties may make appointments to examine documents by contacting the NRC Technical Library by email at Library.Resource@nrc.gov between 8 a.m. and 4 p.m. eastern time, Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

Executive Summary

A. Need for the Regulatory Action

The NRC is amending its regulations to incorporate by reference the 2021 Edition of the American Society of

Mechanical Engineers (ASME) *Boiler and Pressure Vessel Code* (BPV Code) and the 2022 Edition of the ASME *Operation and Maintenance of Nuclear Power Plants*, Division 1, OM Code: Section IST (OM Code), for nuclear power plants.

The ASME periodically revises and updates its Codes for nuclear power plants by issuing new editions; this final rule is in accordance with the NRC’s practice to incorporate those new editions into the NRC’s regulations. This rule maintains the safety of nuclear power plants, makes NRC activities more effective and efficient, and allows nuclear power plant licensees and applicants to take advantage of the latest ASME BPV and OM Codes (ASME Codes). The ASME is a voluntary consensus standards organization, and the ASME Codes are voluntary consensus standards. The NRC’s use of the ASME Codes is consistent with applicable requirements of the National Technology Transfer and Advancement Act (NTTAA). See also Section XIV of this document, “Voluntary Consensus Standards.”

B. Major Provisions

Major provisions of this final rule include the incorporation by reference with conditions of the following ASME Codes into NRC regulations and delineation of NRC requirements for the use of these Codes:

- The 2021 Edition of the BPV Code
- The 2022 Edition of the OM Code

C. Costs and Benefits

The NRC prepared a regulatory analysis to determine the expected costs and benefits of this final rule. The regulatory analysis identifies costs and benefits in both a quantitative fashion as well as in a qualitative fashion.

Based on the analysis, the NRC concludes that this final rule results in a net quantitative averted cost to the industry and a net cost to the NRC. This final rule, relative to the regulatory baseline, results in a net averted cost for industry of \$0.65 million based on a 7-percent net present value (NPV) and \$0.72 million based on a 3-percent NPV. This final rule, relative to the regulatory baseline, results in a net cost to the NRC of \$44 thousand based on a 7-percent NPV to \$10 thousand based on a 3-percent NPV. Qualitative factors that were considered include regulatory

stability and predictability, regulatory efficiency, and consistency with the NTTAA. The regulatory analysis shows that the rulemaking is justified because the total quantified benefits of the regulatory action exceed the costs of the action. When the qualitative benefits (including the safety benefit and improvement in knowledge) are considered together with the quantified benefits, the benefits outweigh the identified quantitative and qualitative costs.

The NRC has had a decades-long practice of approving and/or mandating the use of certain parts of editions and addenda of these ASME Codes in § 50.55a. Continuing this practice in this final rule ensures regulatory stability and predictability. This practice also provides consistency across the industry and provides assurance to the industry and the public that the NRC will continue to support the use of the most updated and technically sound techniques developed by the ASME to provide adequate protection to the public. In this regard, the ASME Codes are voluntary consensus standards developed by technical committees composed of mechanical engineers and others who represent the broad and varied interests of their industries, from manufacturers and installers to insurers, inspectors, distributors, regulatory agencies, and end users. The standards undergo extensive external review before the NRC considers whether to incorporate them by reference. Finally, the NRC's use of the ASME Codes is consistent with the NTTAA, which directs Federal agencies to adopt voluntary consensus standards instead of developing "government-unique" (*i.e.*, Federal agency-developed) standards, unless inconsistent with applicable law or otherwise impractical.

For more information, please see the final regulatory analysis (ML24053A051) in the NRC's ADAMS.

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I. Background

The ASME develops and publishes the ASME BPV Code, which contains requirements for the design, construction, and inservice inspection (ISI) of nuclear power plant components, and the ASME OM Code,¹ which contains requirements for inservice testing (IST) of nuclear power plant components. Until 2012, the ASME issued new editions of the ASME BPV Code every 3 years and addenda to the editions annually, except in years when a new edition was issued. Similarly, the ASME periodically published new editions and addenda of the ASME OM Code. Starting in 2012, the ASME decided to issue editions of its BPV and OM Codes (no addenda) every 2 years with the BPV Code to be issued on the odd years (*e.g.*, 2013, 2015, etc.) and the OM Code to be issued on the even years² (*e.g.*, 2012, 2014, etc.). The new editions typically revise provisions of the ASME Codes to broaden their applicability, add specific elements to current provisions, delete specific provisions, and/or clarify them to narrow the applicability of the provision. The revisions to the editions of the ASME Codes do not significantly change code philosophy or approach.

The NRC's practice is to establish requirements for the design, construction, operation, ISI (examination), and IST of nuclear power plants by approving the use of editions of the ASME BPV and OM Codes (ASME Codes) in § 50.55a of title 10 of the *Code of Federal Regulations* (10 CFR). The NRC approves or mandates the use of certain parts of editions of these ASME Codes in § 50.55a through the rulemaking process of "incorporation by reference." Upon incorporation by reference of the ASME Codes into § 50.55a, the provisions of the ASME Codes are legally binding NRC requirements as delineated in § 50.55a, and subject to the conditions on certain specific ASME Codes' provisions that are set forth in § 50.55a. The editions of the ASME BPV and OM Codes were last incorporated by

¹ The editions and addenda of the ASME *Operation and Maintenance of Nuclear Power Plants* have had different titles from 2005 to 2019 and are referred to collectively in this rule as the "OM Code."

² The 2014 Edition of the ASME OM Code was delayed and was designated the 2015 Edition. Similarly, the 2016 Edition of the OM Code was delayed and was designated the 2017 Edition.

reference into the NRC's regulations in a final rule dated October 27, 2022 (87 FR 65128).

The ASME Codes are consensus standards developed by participants, including the NRC and licensees of nuclear power plants, who have broad and varied interests. The ASME's publication of new editions of the ASME Codes does not mean that there is unanimity on every provision in the ASME Codes. There may be disagreement among the technical experts, including the NRC's representatives on the ASME Code committees and subcommittees, regarding the acceptability or desirability of a particular code provision included in an ASME-approved Code edition. If the NRC believes that there is a significant technical or regulatory concern with a provision in an ASME-approved Code edition being considered for incorporation by reference, then the NRC conditions the use of that provision when it incorporates by reference that ASME Code edition into its regulations. In some instances, the condition increases the level of safety afforded by the ASME Code provision, or addresses a regulatory issue not considered by the ASME. In other instances, where research data or experience has shown that certain code provisions are unnecessarily conservative, the condition may provide that the code provision need not be complied with in some or all respects. The NRC's conditions are included in § 50.55a, typically in paragraph (b) of that section. In a Staff Requirements Memorandum dated September 10, 1999 (ML003755050), the Commission indicated that NRC rulemakings adopting (incorporating by reference) a voluntary consensus standard must identify and justify each part of the standard that is not adopted. For this final rule, the provisions of the 2021 Edition of Section III, Division 1; the 2021 Edition of Section XI, Division 1, of the ASME BPV Code; and the 2022 Edition of the ASME OM Code that the NRC are not adopting, or are only partially adopting, are identified in the "Discussion," "Regulatory Analysis," and "Backfitting and Issue Finality" sections of this document. The provisions of those specific editions and Code Cases that are the subject of this final rule that the NRC finds to be conditionally acceptable, together with the applicable conditions, are also identified in the "Discussion," "Regulatory Analysis," and "Backfitting and Issue Finality" sections of this document.

The ASME Codes are voluntary consensus standards, and the NRC's incorporation by reference of these Codes is consistent with applicable requirements of the NTTAA. Additional discussion on the NRC's compliance with the NTTAA is set forth in Section XIV of this document, "Voluntary Consensus Standards."

II. Discussion

The NRC regulations incorporate by reference ASME Codes for nuclear power plants. This final rule is the latest in a series of rulemakings to amend the NRC's regulations to incorporate by reference revised and updated ASME Codes for nuclear power plants. This final rule is intended to maintain the safety of nuclear power plants and make NRC activities more effective and efficient.

The NRC follows a three-step process to determine acceptability of new provisions in new editions of the Codes and the need for conditions on the uses of these Codes. This process was employed in the review of the Codes that are the subjects of this rule. First, the NRC actively participates with other ASME committee members with full involvement in discussions and technical debates in the development of new and revised Codes. This includes a technical justification of each new or revised Code. Second, the NRC's committee representatives discuss the Codes and technical justifications with other cognizant staff to ensure an adequate technical review. Third, the NRC position on each Code is reviewed and approved by NRC management as part of this rule amending § 50.55a to incorporate by reference new editions of the ASME Codes and conditions on their use. This regulatory process, when considered together with the ASME's own process for developing and approving the ASME Codes, assures that the NRC approves for use only those new and revised code editions, with conditions as necessary, that provide reasonable assurance of adequate protection to the public health and safety, and that do not have significant adverse impacts on the environment.

The NRC reviewed changes to the Codes in the editions identified in this final rule. The NRC concluded, in accordance with the process for review of changes to the Codes, that these editions of the Codes are technically adequate, consistent with current NRC regulations, and approved for use with the specified conditions.

The NRC is amending its regulations to incorporate by reference:

- The 2021 Editions of the ASME BPV Code, Section III, Division 1 and

Section XI, Division 1, with conditions on their use.

- The 2022 Edition of Division 1 of the ASME OM Code, with conditions on its use.

The current regulations in § 50.55a(a)(1)(i) incorporate by reference ASME BPV Code, Section III, 1963 Edition through the 1970 Winter Addenda; and the 1971 Edition (Division 1) through the 2019 Edition (Division 1), subject to the conditions identified in current § 50.55a(b)(1)(i) through (xiii). This final rule revises § 50.55a(a)(1)(i) to incorporate by reference the 2021 Edition (Division 1) of the ASME BPV Code, Section III.

The current regulations in § 50.55a(a)(1)(ii) incorporate by reference ASME BPV Code, Section XI, 1974 Edition through the 1975 Summer Addenda, the 1995 Edition (Division 1) through the 1997 Addenda (Division 1), and the 2001 Edition (Division 1) through the 2019 Edition (Division 1), subject to the conditions identified in current § 50.55a(b)(2)(i) through (xlili). This final rule revises § 50.55a(a)(1)(ii) to incorporate by reference the 2021 Edition (Division 1) of the ASME BPV Code, Section XI. It also clarifies the wording and adds, removes, or revises some of the conditions as explained in this rule.

The current regulations in § 50.55a(a)(1)(iv) incorporate by reference ASME OM Code, 1995 Edition through the 2020 Edition (with some omissions of specific editions and addenda), subject to the conditions currently identified in § 50.55a(b)(3)(i) through (xi). This final rule revises § 50.55a(a)(1)(iv) to incorporate by reference the 2022 Edition of Division 1 of the ASME OM Code.

In the introductory discussion of its Codes, ASME specifies that errata to those Codes may be posted on the ASME website under the Committee Pages to provide corrections to incorrectly published items, or to correct typographical or grammatical errors in those Codes. Users of the ASME BPV Code and ASME OM Code should be aware of errata when implementing the specific provisions of those Codes. Applicants and licensees should monitor errata to determine when they might need to submit a request for an alternative under § 50.55a(z) to implement provisions specified in errata to their ASME Code of Record.

The NRC reviewed changes to the Codes in the editions identified in this final rule and published a proposed rule in the **Federal Register** setting forth the NRC's proposal to incorporate by reference the ASME Codes, together

with proposed conditions on their use (88 FR 53384; August 8, 2023). The NRC also proposed to correct minor editorial and administrative errors, including spacing and typos. After consideration of the public comments received on the proposed rule (public comments are discussed in Section IV of this document, "Public Comment Analysis"), the NRC concludes, in accordance with the process for review of changes to the Codes, that these editions of the Codes are technically adequate, consistent with current NRC regulations, and approved for use with the specified conditions set forth in this final rule. Each of the NRC conditions and the reasons for each condition are discussed in the following sections of this document. The discussions are organized under the applicable ASME Code and Section.

A. ASME BPV Code, Section III

Section 50.55a(a)(1)(i)(E) Rules for Construction of Nuclear Facility Components-Division 1.

The NRC is revising § 50.55a(a)(1)(i)(E) to incorporate by reference the 2021 Edition of the ASME BPV Code, Section III, including Subsection NCA and Division 1 Subsections NB through NG and Appendices. As stated in § 50.55a(a)(1)(i), the Nonmandatory Appendices are excluded and not incorporated by reference. The Mandatory Appendices are incorporated by reference because they include information necessary for Division 1. However, the Mandatory Appendices also include material that pertains to other Divisions that have not been reviewed and approved by the NRC. Although this information is included in the sections and appendices being incorporated by reference, the NRC notes that the use of Divisions other than Division 1 has not been approved, nor are they required by NRC regulations and, therefore, such information is not relevant to NRC applicants and licensees. The NRC is not taking a position on the non-Division 1 information in the appendices and is including it in the incorporation by reference only for convenience. Therefore, this final rule revises the introductory text to § 50.55a(a)(1)(i)(E) to reference the 2021 Edition of the ASME BPV Code, Section III, including Subsection NCA and Division 1 Subsections NB through NG and Appendices.

Users of Section III of the ASME BPV Code are reminded that ASME has relocated certain overpressure protection requirements for safety and relief valves to Section XIII, "Rules for

Overpressure Protection,” of the ASME BPV Code, such as Part 9, “Capacity and Flow Resistance Certification.” ASME prepared Section XIII of the BPV Code to consolidate the overpressure protection requirements into one BPV Code Section to benefit all stakeholders by advancing the technology with participation from a broader group of subject matter experts. This relocation collects overpressure protection requirements into a single location rather than specifying them in various sections and divisions of the ASME BPV Code. ASME stated that it did not intend a technical change by this relocation of the overpressure protection requirements. Where appropriate, Section III of the ASME BPV Code specifies a direct citation to the relocated overpressure protection requirements in Section XIII of the ASME BPV Code.

Section 50.55a(b)(1)(iv) Section III Condition: Quality Assurance

The NRC is incorporating by reference Subsection NCA of 2021 Edition BPV Code, ASME Section III with the exception that Subpart 2.19 in NQA-1-2017, NQA-1-2019, and NQA-1-2022 is not approved for use.

With regards to the implementation of NCA-3126, NCA-3127, NCA-4255.3, and NCA-4254.3 for the procurement of calibration and testing services, the NRC reminds the users of the ASME Code that the procurement of commercial grade calibration and testing services remains subject to NRC requirements in 10 CFR part 21 and in appendix B to 10 CFR part 50.

For implementation of procurement of calibration and testing services, the NRC published a Regulatory Guide (RG), RG 1.28 Rev. 6, “Quality Assurance Program Criteria (Design and Construction),” (ML23177A002) that, among other things, endorsed Nuclear Energy Institute (NEI) 14-05A, “Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services,” Revision 1, issued November 2020 (88 FR 62292). As described in the RG, licensees and suppliers of basic components can take credit for the International Laboratory Accreditation Cooperation accreditation process as described in NEI 14-05A, Revision 1, in lieu of performing on-site commercial grade surveys as part of the commercial grade dedication of calibration and testing services. The NRC’s endorsement is for use of NEI 14-05A, Revision 1, in lieu of Subpart 2.19 in NQA-1-2017, NQA-1-2019, and NQA-1-2022, which RG 1.28 found to not incorporate the controls and

conditions necessary for use. Specifically, Subpart 2.19 allows the laboratory accreditation to be performed remotely, which the NRC has determined is not adequate to meet the requirements of appendix B to 10 CFR part 50. Therefore, the NRC is adding a condition to prohibit the use of Subpart 2.19 in NQA-1-2017, NQA-1-2019, and NQA-1-2022.

Section 50.55a(b)(1)(vi) Section III Condition: Subsection NH

The NRC is revising this condition to change the word “sleeves” to “sheaths” and to note that this condition is not applicable to the 2015 Edition and later editions as Subsection NH has been deleted from Section III Division 1.

Section 50.55a(b)(1)(xi) Section III Condition: Mandatory Appendix XXVI

The NRC is revising this condition. When applying the 2015 and 2017 Editions of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the first provision, as noted in § 50.55a(b)(1)(xi)(A). When applying the 2015 through 2021 Editions of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the second provision, as noted in § 50.55a(b)(1)(xi)(B). When applying the 2017 Edition of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the third provision, as noted in § 50.55a(b)(1)(xi)(C).

As a result of a public comment received, the NRC has modified the second provision, § 50.55a(b)(1)(xi)(B), to provide more clarity in the first sentence, and replaced the second sentence to clarify that, in the event of breakage in a specimen that is away from the fusion zone, a retest may be required only if the base material failed at less than the minimum required base material yield strength.

Section 50.55a(b)(1)(xiii) Section III Condition: Preservice Inspection of Steam Generator Tubes

The NRC is revising § 50.55a(b)(1)(xiii) including the first provision, § 50.55a(b)(1)(xiii)(A), and second provision, § 50.55a(b)(1)(xiii)(B), to extend the applicability of the conditions through the latest edition of the ASME BPV Code, Section III incorporated by reference in paragraph (a)(1)(i). The 2021 Edition of Section III

was not updated to include the provisions of this condition. Therefore, the NRC is revising this condition to apply to the latest edition incorporated by reference.

Section 50.55a(b)(1)(xiv) Section III Condition: Repairs to Stamped Components

The NRC is adding a condition that if Nonmandatory Appendix NN is used for the elimination of surface defects and repairs of stamped components prior to the completion of Form N-3 Data Report, all applicable requirements of Nonmandatory Appendix NN shall be met. The 2021 Edition included Nonmandatory Appendix NN and stated in the provisions of NCA-8151 and NCA-8500 in the 2021 Edition of Section III that guidance for the elimination of surface defects and repairs of stamped components prior to the completion of Form N-3 Data Report is contained within Nonmandatory Appendix NN.

The section titled “Organization of Section III” within Section III and the “Introduction” to Section III Appendices state that “Mandatory Appendices are referred to in the Section III rules and contain requirements that must be followed in construction. Nonmandatory Appendices provide additional information or guidance when using Section III.” In addition, Nonmandatory Appendix NN states, “This Appendix provides guidance for the removal of external surface defects from piping, pumps, and valves and performing repairs to stamped components after certification and prior to completion of the N-3 Data Report.”

Since this Nonmandatory Appendix is not required to be followed by the ASME Code, all or none of the requirements in this Appendix may be performed and the certificate holder or owner potentially could make repairs that do not meet the code requirements, introduce flaws or retain defects, or not disposition defects that can compromise the structural integrity of the component and not properly document the repair. It should be noted that Nonmandatory Appendix NN was developed by combining Code Cases N-801-3 and N-870-1 into the Nonmandatory Appendix NN. The NRC-approved Code Cases N-801-3 and N-870-1 in RG 1.84, Revision 39. Licensees that used Code Cases N-801-3 and N-870-1 were required to meet all the requirements in the applicable Code Cases. The NRC considers the information in Nonmandatory Appendix NN as requirements, consistent with the Code Cases, that are necessary to ensure

certificate holders make satisfactory repairs to stamped ASME Code, Section III components. Therefore, the NRC is adding § 50.55a(b)(1)(xiv) to condition the provision of NCA-8151, NCA-8500, and Nonmandatory Appendix NN to require that all the requirements in Nonmandatory Appendix NN shall be met when used.

B. ASME BPV Code, Section XI

Section 50.55a(a)(1)(ii) ASME BPV Code, Section XI

The NRC is amending the regulations in § 50.55a(a)(1)(ii)(C) to incorporate by reference the 2021 Edition (Division 1) of the ASME BPV Code, Section XI. The current regulations in § 50.55a(a)(1)(ii)(C) incorporate by reference ASME BPV Code, Section XI, the 1974 Edition through the 1975 Summer Addenda, the 1995 Edition (Division 1) through the 1997 Edition (Division 1), and the 2001 Edition (Division 1) through the 2019 Edition (Division 1), subject to the conditions identified in § 50.55a(b)(2).

Section 50.55a(b)(2) Conditions on ASME BPV Code Section XI

The NRC is revising the definition of Section XI in § 50.55a(b)(2) to refer to the editions of the ASME BPV Code, Section XI incorporated by reference in paragraph (a)(1)(ii).

Section 50.55a(b)(2)(viii) Section XI Condition: Concrete Containment Examinations

The NRC is limiting the existing conditions in § 50.55a(b)(2)(viii)(H) and § 50.55a(b)(2)(viii)(I), the eighth and ninth provisions for concrete containment examinations, to prior Editions of the ASME Code. Revisions to IWA-6230 require the information described in the existing § 50.55a(b)(2)(viii)(H) condition be included in the required Owner's Activity Report (OAR). Revisions to IWL-2512 require the technical evaluation discussed in IWL-2512(b) be completed every 5 years. Since these new Section XI provisions in the 2021 Edition address the requirement in the existing NRC condition, it is appropriate for the NRC to limit the applicability of the existing conditions to the prior editions.

Section 50.55a(b)(2)(ix) Section XI Condition: Metal Containment Examinations

The NRC is limiting the applicability of the existing condition in § 50.55a(b)(2)(ix)(A)(2), the first provision for metal containment examinations, to prior Editions of the ASME Code. Revisions to IWA-6230

require the information described in the existing § 50.55a(b)(2)(ix) condition be included in the required OAR. Since this new Section XI provision in the 2021 Edition addresses the requirement in the existing NRC condition, it is appropriate for the NRC to limit the applicability of the existing condition to the earlier editions.

Section 50.55a(b)(2)(xv) Section XI Condition: Appendix VIII Specimen Set and Qualification Requirements

The NRC is eliminating this condition as it is no longer applicable to any licensee. This condition only applied to the use of the 1995 through the 2001 Editions of ASME Code Section XI, Appendix VIII. Additionally, § 50.55a(b)(2)(xv) requires licensees using ASME Code Section XI Editions later than the 2001 Edition through the 2006 Addenda to use the 2001 Edition of Appendix VIII. This condition therefore only applied to licensees using the 1995 to the 2006 Addenda of ASME Code Section XI.

The 2007 edition of ASME Code Section XI was incorporated by reference in § 50.55a in the rulemaking dated June 21, 2011 (76 FR 36231). Given the requirement to update ISI programs every 120 months, no licensee is still using the 2001 Edition of Appendix VIII. This condition is therefore unnecessary.

Section 50.55a(b)(2)(xxxiv) Section XI Condition: Nonmandatory Appendix U

The NRC is amending § 50.55a(b)(2)(xxxiv) to prohibit the use of Nonmandatory Appendix U, Supplement U-S1 in the 2021 Edition of Section XI. Nonmandatory Appendix U, Supplement U-S1 provides licensees with a methodology for temporary acceptance of flaws in moderate energy Class 2 and 3 piping. However, Code Case N-513 provides the same rules. The NRC position is that licensees should use the more frequently updated Code Case N-513 when seeking to temporarily accept flaws in moderate energy Class 2 and 3 piping. As the ASME continues to update Code Case N-513, there can be different requirements between the version allowed by Nonmandatory Appendix U and the NRC-approved version of the Code Case. Furthermore, duplicative rules may create regulatory confusion both for licensees and NRC inspection staff, as well as impose a burden on the NRC to review and compare the two documents to ensure reasonable assurance of safety under all potential combinations of alternatives. Therefore, this condition clarifies that the appropriate reference for temporary

acceptance of flaws in moderate energy Class 2 and 3 piping is Code Case N-513, as dispositioned in the latest version of RG 1.147 incorporated by reference in § 50.55a(a)(3)(ii).

The NRC is modifying the existing condition in § 50.55a(b)(2)(xxxiv) to update the version of ASME BPV Code Case N-513 to the latest version approved in RG 1.147 at the time the case was incorporated into the licensee's inservice inspection program. The NRC is renumbering this existing condition to § 50.55a(b)(2)(xxxiv)(A)(2) and revising § 50.55a(b)(2)(xxxiv)(B) to reflect the added condition on Nonmandatory Appendix U, Supplement U-S1. The purpose of this change is for regulatory efficiency to minimize changes to this condition in future rulemakings and maintain the requirement consistent with the latest NRC-approved version of Code Case N-513.

Section 50.55a(b)(2)(xxxvi) Section XI Condition: Fracture Toughness of Irradiated Materials

The NRC is amending § 50.55a(b)(2)(xxxvi), to require determination of the Master Curve parameters T_0 and RT_{T0} as prescribed in ASME BPV Code, Section III, NB-2331, subparagraph (a)(5). This change eliminates the requirement to submit such determinations to the NRC for review and replaces that submittal requirement with an acceptable method for determining these fracture toughness parameters.

Although this specific change to § 50.55a(b)(2)(xxxvi) was not in the proposed rule, the proposed rule requested comments on the NRC's proposal to condition the 2021 Edition of the ASME Code, Section XI to require that analytical evaluation reports continue to be submitted to the NRC. The proposed rule noted that analytical reports provide the NRC operating experience data to monitor degradation trends across the industry to ensure public health and safety and that similar reporting requirements can be found in 50.55a, including § 50.55a(b)(2)(xxxii). In the proposed rule, the NRC specifically asked for comments on how the NRC could effectively leverage the information provided in such reports in a way that is transparent to stakeholders and ensures structural integrity of nuclear components without incurring excessive administrative burden for plant owners.

The NRC is making this change in response to a public comment that reviewed the history of the codification of Master Curve methods and NRC's regulatory treatment of those

requirements. The NRC determined that use of the NB-2331(a)(5) is a consistent, technically justified regulatory approach to the Master Curve under § 50.55a(z).

Section 50.55a(b)(2)(xliii) Section XI Condition: Regulatory Submittal Requirements

The NRC is modifying § 50.55a(b)(2)(xliii)(A), to clarify that the analysis for an out-of-limit condition described in Section XI, IWB-3720(a) is not subject to NRC review and approval.

Although this specific modification was not in the proposed rule, the proposed rule requested comments on the NRC's proposal to condition the 2021 Edition of the ASME Code, Section XI to require that analytical evaluation reports continue to be submitted to the NRC. The proposed rule noted that analytical reports provide the NRC and operating experience data to monitor degradation trends across the industry to ensure public health and safety and that similar reporting requirements can be found in 50.55a, including 50.55a(b)(2)(xliii).

The NRC agreed in part with a public comment stating that Nonmandatory Appendix E has been reviewed and approved by the NRC through incorporation by reference. The NRC agreed that the original submission requirement in IWB-3720 was not clear on whether review and approval by the regulatory authority was needed. The immediate safety impacts of a pressure-temperature limit excursion on vessel integrity are assessed through the NRC's reactor oversight process, so there is no need to specify NRC review and approval of the analysis in § 50.55a. While NRC review and approval is no longer required, licensees are still be required to submit the analysis to the NRC.

The NRC also is deleting the conditions at § 50.55a(b)(2)(xliii)(B) and (C). This change eliminates the requirement to submit determination of T_0 and RT_{T0} under Nonmandatory Appendix A, A-4200(c) and Nonmandatory Appendix G, G-2110(c) to NRC for review and approval. The NRC is replacing that submittal requirement with an acceptable method for determining these fracture toughness parameters in new condition § 50.55a(b)(2)(l). The NRC is making this change due to a public comment that reviewed the history of the codification of Master Curve methods and NRC's regulatory treatment of those requirements. The NRC determined that use of the ASME BPV Code, Section III, NB-2331, subparagraph (a)(5) referenced in new condition § 50.55a(b)(2)(l) is a consistent,

technically justified regulatory approach to the Master Curve.

Section 50.55a(b)(2)(xliv) Section XI Condition: Nonmandatory Appendix Y

The NRC is adding § 50.55a(b)(2)(xliv) to prohibit the use of Y-2200, Y-2420, and Y-3200 in the 2021 Edition of Section XI. These articles provide three crack growth laws for use in Section XI flaw evaluations. However, Code Cases N-809, N-889, and N-643 respectively provide the same crack growth laws. The NRC's position is that licensees must use the more frequently updated Code Cases when seeking to use these crack growth laws in Section XI flaw evaluations. Furthermore, duplicative rules may create regulatory confusion for licensees and additional burden on the NRC to review and compare the two documents to provide reasonable assurance of safety when using the curves and defined variables. Therefore, this condition clarifies that the appropriate references for crack growth laws are the respective Code Cases as dispositioned in the latest edition of RG 1.147 incorporated by reference in § 50.55a(a)(3)(ii).

Section 50.55a(b)(2)(xlv) Section XI Condition: Pressure Testing of Containment Penetration Piping After Repair/Replacement Activities

The NRC is adding § 50.55a(b)(2)(xlv) to require that when applying the provisions of IWA-4540(a) and (e) of the 2021 Edition of the ASME Code, Section XI, a VT-2 (*i.e.*, visual examination during system walkdown) of the area affected by the repair/replacement activity shall be conducted during the Type C test in appendix J to 10 CFR part 50. The 2021 Edition of the ASME Code, Section XI, revised IWA-4540(a) and (e) by incorporating the requirements of Code Case N-751. The NRC conditioned Code Case N-751 in RG 1.147, Revision 19, to require that nondestructive examination must be performed in accordance with IWA-4540(a)(2) of the 2002 Addenda of Section XI. This includes a VT-2 in accordance with IWA-5211.

Upon incorporating Code Case N-751 and the NRC condition in RG 1.147, the revised IWA-4540(a) and (e) did not fully address the NRC condition in RG 1.147 concerning performing the VT-2. The revised IWA-4540(a) moved the pressure testing requirements for “[R]epair/replacement activities performed by welding or brazing on piping, including isolation valves, designated Class 2, that penetrates a containment vessel and where the balance of the piping system inside and outside the containment is not within

the scope of Section XI” to IWA-4540(e). Therefore, the specific requirement in IWA-4540(a) to require a VT-2 during pressure testing is not required. In addition, IWA-4540(e) in the 2021 Edition of ASME Code, Section XI states that for pressure testing of these locations, a Type C test in appendix J to 10 CFR part 50, system leakage test in accordance with IWA-5211(a), or pneumatic test in accordance with IWA-5211(c), shall be performed. The NRC notes that IWA-5211 requires the VT-2, while neither IWA-5211(a) or (c) require a VT-2. IWA-4540(e) also states that if “there is detectable leakage during the Type C test in appendix J to 10 CFR part 50, the brazed joints or welds shall be tested to confirm there is no leakage through the brazed joints or welds.” The NRC notes that the Type C test in appendix J to 10 CFR part 50 does not require a VT-2 of the piping to verify the leakage or absence thereof, but only a decrease in pressure.

Therefore, the NRC is adding § 50.55a(b)(2)(xlv) to condition provisions IWA-4540(a) and (e) of the 2021 Edition of the ASME Code, Section XI, to require that a VT-2 of the area affected by the repair/replacement activity be conducted during the Type C test in appendix J to 10 CFR part 50 to be consistent with the previous NRC condition for Code Case N-751.

Section 50.55a(b)(2)(xlvi) Section XI Condition: Contracted Repair/Replacement Organization Fabricating Items Offsite of the Owner's Facilities

The NRC is adding § 50.55a(b)(2)(xlvi) to prohibit a contracted Repair/Replacement Organization, when applying the provisions of IWA-4143 in the 2021 Edition of the ASME Code, Section XI, from fabricating an item offsite of the Owner's facility (*e.g.*, vendor facility) without an ASME Certificate of Authorization and without applying an ASME Stamp/Certification Mark.

IWA-4143 in the 2021 Edition of the ASME Code, Section XI, allows an Owner to procure ASME Code, Section III parts, appurtenances, piping subassemblies, and supports (hereinafter referred to as items) with no ASME Stamp/Certification Mark from a Repair/Replacement Organization that does not have an ASME Certificate of Authorization and conducts fabrication activities offsite of the Owner's facility. Therefore, a contracted Repair/Replacement Organization would have been able to fabricate an item offsite (at a vendor facility) without an ASME Certificate of Authorization and not apply a Stamp/Certification Mark on the item. This contradicts NCA-8330 in

ASME Code, Section III, which only allows an item with no ASME Stamp/Certification Mark applied to the item for an organization with an ASME Certificate of Authorization, since the organization with an ASME Certificate of Authorization is required to follow additional controls of the part in NCA-8330(a)(1) through (3). IWA-4131 in the 2021 Edition of the ASME Code, Section XI, does not provide controls of these items through completion of installation for an organization that does not have an ASME Certificate of Authorization. IWA-4131 in the 2019 Edition of the ASME Code, Section XI, has a restriction that fabrication (of parts) by the Owner or the Owner's contracted Repair/Replacement Organization (not possessing an ASME Certificate of Authorization) may occur only at the Owner's facility. The condition is consistent with IWA-4143 of the 2019 Edition of the ASME Code, Section XI, which allowed a Repair/Replacement Organization with a quality assurance program that complies with IWA-4142 to fabricate parts, appurtenances, piping assemblies, and supports at the Owner's facilities without application of an ASME Stamp/Certification Mark.

Therefore, the NRC is adding § 50.55a(b)(2)(xlvi) to condition the provision of IWA-4143 of the 2021 Edition of the ASME Code, Section XI, by prohibiting a contracted Repair/Replacement Organization from fabricating a part offsite of the Owner's facility (e.g., vendor facility) without an ASME Certificate of Authorization and without applying an ASME Stamp/Certification Mark.

Section 50.55a(b)(2)(xlvii) Section XI Condition: Weld Overlay Design Crack Growth Analysis

The NRC is adding § 50.55a(b)(2)(xlvii) to require stress corrosion crack growth analysis of the weld overlay material in Nonmandatory Appendix Q of ASME Code, Section XI. In the 2021 Edition, a change was made to Subparagraph Q-3000(a) to specifically note that stress corrosion crack growth analysis is not required within the weld overlay material. While these overlay materials are expected to be more stress corrosion crack resistant, Article Q-2000 does not require all overlay materials to be impervious to potential cracking. If the licensee can justify that the material would not experience stress corrosion cracking growth expected over design life of the overlay, the licensee should document this conclusion in the design. The NRC therefore adds this condition to require the analysis of a hypothetical flaw in determining the design and design life

of a weld overlay under Nonmandatory Appendix Q.

Section 50.55a(b)(2)(xlviii) Section XI Condition: Analytical Evaluations of Degradation

The NRC is adding § 50.55a(b)(2)(xlviii) to require that analytical evaluations performed in accordance with IWB-3132.3 and IWC-3132.3 be submitted to the NRC. The 2019 Edition of the ASME BPV Code, Section XI, IWB-3134, *Review by Authorities*, requires that “[a]nalytical evaluation of examination results as required by IWB-3132.3 shall be submitted to the regulatory authority having jurisdiction at the plant site.” IWC-3125, *Review by Authorities*, requires that “[t]he analytical evaluation of examination results as required by IWC-3122.3 shall be submitted to the regulatory authority having jurisdiction at the plant site.” The 2021 Edition of the ASME Code, Section XI, eliminates the provisions of IWB-3134 and IWC-3125 in their entirety. The NRC finds that flaw evaluations provide significant regulatory information in the following areas: the condition of the degradation of the affected component, the cause of the degradation, operating experience, methodology used, performance monitoring, and regulatory oversight. For example, the flaw evaluation predicts the flaw size with growth during a certain time period. The final flaw size should not exceed the allowable flaw size, and the affected component would need to be inspected prior to the final flaw size exceeding the allowable flaw size. The NRC needs to monitor the safety of plant operation, considering the flaw may grow during the plant operation. The flaw evaluation provides key information for the NRC's oversight. Accordingly, the NRC is adding § 50.55a(b)(2)(xlviii) to retain the requirement from the 2019 Edition of the ASME BPV Code, Section XI, that analytical evaluations performed in accordance with IWB-3132.3 and IWC-3132.3 be submitted to the NRC.

Section 50.55a(b)(2)(xlix) Section XI Condition: Analytical Evaluations of Flaws in Cladding

The NRC is adding § 50.55a(b)(2)(xlix) to prohibit the use of IWB-3600(b)(1) in the 2021 Edition of ASME BPV Code, Section XI (Division 1), for the inlay and onlay that are subject to the augmented inspection requirements in paragraph § 50.55a(g)(6)(ii)(F).

IWB-3600(b)(1) in the 2021 Edition of the Code addresses the provision that a flaw, which lies entirely in the cladding of Class 1 components, need not be analytically evaluated. In the 2021

Edition of the Code, this provision has been relocated from IWB-3610 to IWB-3600. In the code editions and addenda prior to the 2021 Edition since the 1988 Addenda, this provision in IWB-3610 for Class 1 vessels has not been applicable to the analytical evaluation for piping that is separately addressed in IWB-3640. Based on the relocation of the provision to IWB-3600, the 2021 Edition of the Code without a condition would have allowed that a flaw, which lies entirely in the cladding of piping, need not be analytically evaluated.

In comparison, paragraph § 50.55a(g)(6)(ii)(F) addresses the augmented inspection requirements for Class 1 pressurized water reactor (PWR) piping and vessel nozzle butt welds. As part of the requirements, paragraph § 50.55a(g)(6)(ii)(F)(7) describes the examination evaluation and acceptance standards for the inlay and onlay of the butt welds. Specifically, the condition in the paragraph requires that, for Inspection Items G, H, J, and K of Code Case N-770, when applying the acceptance standards of IWB-3514 for planar flaws contained within the inlay or onlay, the thickness “t” in IWB-3514 be the thickness of the inlay or onlay.

Accordingly, when a flaw lies entirely in the inlay or onlay subject to the augmented inspections in paragraph § 50.55a(g)(6)(ii)(F)(7), the flaw is required to be evaluated in accordance with IWB-3514 by using the thickness of the inlay or onlay as the thickness “t” in IWB-3514. Based on paragraph § 50.55a(g)(6)(ii)(F)(7), if a flaw in the inlay or onlay is not acceptable in accordance with IWB-3514 as conditioned by the paragraph, analytical evaluation of the flaw must be performed in accordance with IWB-3600 or repair/replacement activities must be performed in accordance with IWA-4000.

As discussed above, the use of IWB-3600(b)(1) in the 2021 Edition of ASME BPV Code, Section XI (Division 1) for the inlay and onlay is not consistent with paragraph § 50.55a(g)(6)(ii)(F)(7) and the related provisions of analytical evaluation that are specified in IWB-3600 in the code editions and addenda prior to the 2021 Edition. Therefore, the NRC is adding a condition to prohibit the use of IWB-3600(b)(1) in the 2021 Edition of the Code for the inlay and onlay that are subject to the augmented inservice inspection requirements for Class 1 piping and nozzle dissimilar-metal butt welds in paragraph § 50.55a(g)(6)(ii)(F).

Section 50.55a(b)(2)(l) Section XI
Condition: Determination of Master
Curve T_0

The NRC is adding § 50.55a(b)(2)(l), which was not in the proposed rule, to require T_0 and RT_{T_0} applied under Nonmandatory Appendix A, A-4200(c) and Nonmandatory Appendix G, G-2110(c) be determined as prescribed in ASME BPV Code, Section III, NB-2331, subparagraph (a)(5). The NRC is adding this condition to replace the previous conditions § 50.55a(b)(2)(xlili)(B) and (C), which required licensees to submit the determination of T_0 and RT_{T_0} for NRC review and approval. The NRC is making this change due to a public comment that reviewed the history of the codification of Master Curve methods and NRC's regulatory treatment of those requirements. The NRC determined that use of the NB-2331(a)(5) is a consistent, technically justified regulatory approach to the Master Curve.

Section 50.55a(g)(4)(ii) Section XI
Applicable ISI Code: Successive 120-
Month Intervals

The NRC is updating § 50.55a(g)(4)(ii), which was not in the proposed rule, to allow licensees to delay the update of their Appendix VIII program by up to 18 months after the effective date of this final rule. The NRC recognizes that updating an Appendix VIII program is a complex and time-consuming process. Allowing licensees to delay the update is consistent with previous final rules that incorporated the ASME Codes by reference. The NRC is making this change due to a public comment. A public comment was received that indicated that the NRC mistakenly did not update this provision in the final rule incorporating by reference the 2019 and 2020 Editions of the ASME Code or the proposed rule to incorporate by reference the 2021 and 2022 Editions of the ASME Code.

Section 50.55a(g)(6)(ii)(D)(9) Section XI
Condition: Volumetric Qualifications

The NRC is adding § 50.55a(g)(6)(ii)(D)(9) to allow licensees the option to utilize Supplement 15 of Mandatory Appendix VIII in the 2021 Edition of Section XI, incorporated by reference in § 50.55a, for volumetric qualification of examinations required by Table 1 of ASME Code Case N-729-6. The ASME in combination with the Electric Power Research Institute Nondestructive Evaluation Center developed expanded qualifications similar to other volumetric qualification requirements in Mandatory Appendix VIII to replace the requirements

described in ASME Code Case N-729-6. The NRC found these qualification requirements acceptable, in addition to the current requirements of ASME Code Case N-729-6. Therefore, to reduce the burden of requiring an update to all programs immediately, the NRC is adding a condition to allow either qualification program to be used. In future § 50.55a rulemakings, in which N-729 is further revised or incorporated into the ASME Code, the NRC expects that the Supplement 15 requirements of Mandatory Appendix VIII will be required. Additionally, as licensees adopt the 2021 Edition as an ISI Code of Record for their ISI Interval, Supplement 15 of Mandatory Appendix VIII will be a requirement. The NRC expects that with this transitional time, that has no immediate impact or burden, licensees will be able to update their programs as necessary in as efficient manner as possible.

Section 50.55a(g)(6)(ii)(F) Augmented
ISI Requirements: Examination
Requirements for Class 1 Piping and
Nozzle Dissimilar-Metal Butt Welds

The NRC is updating the requirements for the augmented inspection of dissimilar-metal butt welds in U.S. PWRs from ASME Code Case N-770-5 to N-770-7. This change will require condition § 50.55a(g)(6)(ii)(F)(1) to be updated, and condition § 50.55a(g)(6)(ii)(F)(8) to be modified to retain an inspection frequency for optimized butt welds consistent with ASME Code Case N-770-5.

The NRC is updating NRC condition § 50.55a(g)(6)(ii)(F)(1) Implementation by changing the reference of ASME Code Case N-770-5 to N-770-7. Additionally, the implementation requirement will be changed from no later than 1 year after June 3, 2020, to no later than 1 year after the rule effective date.

The NRC is modifying the existing condition § 50.55a(g)(6)(ii)(F)(8) to retain, in part, the volumetric examination frequency of ASME Code Case N-770-5, which was changed in N-770-6. In N-770-5, the Frequency of Examination for Inspection Item C-2 welds (uncracked butt welds reinforced by optimized weld overlay of Alloy 52/152 material) is "100% of these welds shall be examined once each inspection interval. For any overlays that have an analyzed life of less than 10 [years], the inspection interval shall be less than or equal to the analyzed life."

In N-770-5, the Frequency of Examination for Inspection Item F-2 welds (cracked butt weld reinforced by optimized weld overlay of Alloy 52/152 material) is "[o]nce during the first or

second refueling outage following overlay. Examination volumes that show no indication of crack growth or new cracking shall be examined once each inspection interval. For any overlays that have an analyzed life of less than 10 years, the inspection interval shall be less than or equal to the analyzed life."

The current NRC condition § 50.55a(g)(6)(ii)(F)(8) states that initial inservice examination of Inspection Item C-2 welds shall be performed between the third refueling outage and no later than 10 years after application of the overlay. In N-770-7, the Frequency of Examination for Inspection Item C-2 welds is—

[e]xamine all welds no sooner than the third refueling outage and no later than 10 years following optimized weld overlay. After the first interval, examination volumes that show no indication of cracking shall be placed into a population to be examined on a sample basis. Twenty-five percent of this population shall be added to the ISI Program in accordance with -2410 and shall be examined once each inspection interval [Note (10)]. For any optimized weld overlays that have an analyzed life of less than 10 years, the inspection interval shall be less than or equal to the analyzed life.

In N-770-7, the Frequency of Examination for Inspection Item F-2 welds is—

[o]nce during the first or second refueling outage following optimized weld overlay. Weld overlay examination volumes that show no indication of crack growth or new cracking shall be placed into a population to be examined on a sample basis. Twenty-five percent of this population shall be added to the ISI Program in accordance with -2410 and shall be examined once each inspection interval [Note (10)]. For any optimized weld overlays that have an analyzed life of less than 10 years, the inspection interval shall be less than or equal to the analyzed life.

The NRC continues to find that the long-term frequency for examination of optimized weld overlays shall be 100 percent of the welds each inspection interval, consistent with N-770-5 and the current regulation. Optimized weld overlays still structurally rely upon 25 percent of the primary water stress corrosion cracking material of the original butt weld to provide structural integrity for the weld. Further, the deposition of a more crack resistant material such as Alloy 52/152 acts as a crack growth restriction, allowing growth along the susceptible original weld material rather than through the more crack resistant material that would provide leakage as a defense-in-depth measure to identify cracking. A 25-percent sample inspection could allow optimized weld overlaid welds to have cracks develop into the structural

retaining material of an ASME Class 1 butt weld in the reactor coolant system. This condition is not true of full structural weld overlays, which the NRC has found can utilize a long-term examination frequency of a 25-percent sample. Because the design of the optimized weld overlay reduces the effectiveness of the defense-in-depth leak initiation method of identifying potential cracking, a volumetric examination of each weld is required to provide reasonable assurance of structural integrity for these optimized weld overlays. Therefore, the NRC is modifying the condition to state that after initial examination for Inspection Items C-2 and F-2 welds, optimized weld overlay examination volumes that show no indication of crack growth or new cracking shall be examined once each inspection interval.

ASME Code Case N-770-7 also creates a new Inspection Item category for auxiliary head adapter (AHA) butt welds, B-3. Some Westinghouse 4-loop plants have AHA butt welds connected to the upper reactor vessel closure head. The new Inspection Item B-3 carries the same inspection requirements of B-1, which the AHA butt welds fall under currently. The update to a new Inspection Item category was made to facilitate a change to the scope expansion requirements in the event that a crack was found in an AHA butt weld.

The purpose of a scope expansion examination is if a crack is found in one weld, examinations of similar welds should be performed to ensure no generic issues are identified with that type of location or operating condition. The Inspection Item category that AHA butt welds currently fall under, B-1, could trigger scope expansion examinations in any, and potentially all, unmitigated reactor coolant system welds. The AHA butt welds are approximately 6-inches in diameter and are located on top of the reactor pressure vessel head in a low or no flow area. This location, while being of the same weld material, is not generally operating under the same conditions as the rest of the reactor coolant butt welds in the primary system of a Westinghouse PWR. Therefore, the ASME Code revised and issued Code Case N-770, Revision 7, to include the new category and modify the scope expansion rules to reflect this change. The NRC agrees with the change to address the intent of scope expansion if a flaw were to be identified in an AHA butt weld. Therefore, the NRC is updating the augmented inservice inspection requirements of

§ 50.55a(g)(6)(ii)(F)(1) to mandate the use of N-770-7 in lieu of N-770-5.

C. ASME OM Code

Section 50.55a(1)(iv), ASME Operation and Maintenance Code

The NRC is amending the regulations in § 50.55a(1)(iv)(C) to incorporate by reference the 2022 Edition of the ASME OM Code for nuclear power plants. The NRC is streamlining § 50.55a wherever possible to provide clearer IST regulatory requirements for nuclear power plant licensees and applicants. In the following paragraphs, the NRC includes certain changes that are part of the § 50.55a streamlining efforts.

Section 50.55a(b)(3)(ii) OM Condition: Motor-Operated Valve (MOV) Testing

The NRC is modifying § 50.55a(b)(3)(ii) by removing conditions (A), (B), and (C) where licensees are implementing the 2022 Edition of the ASME OM Code as incorporated by reference in § 50.55a, because Appendix III, “Preservice and Inservice Testing of Active Electric MOV Assemblies in Water-Cooled Reactor Nuclear Power Plants,” to the 2022 Edition of the ASME OM Code appropriately incorporates the requirements specified in those conditions. Condition (D) has not been incorporated into the 2022 Edition of the ASME OM Code. Therefore, condition (D) in § 50.55a(b)(3)(ii) will continue to apply to all editions and addenda of the ASME OM Code incorporated by reference in § 50.55a.

Section 50.55a(b)(3)(iii) OM Condition: Check Valves

The NRC is revising § 50.55a(b)(3)(iii) by removing condition (B), “Check valves,” which states that licensees must perform bi-directional testing of check valves within the IST program where practicable. New reactors are applying more recent editions of the ASME OM Code that require bi-directional testing of check valves. Therefore, condition (B) is not needed in § 50.55a(b)(3)(iii). The NRC is reserving condition (B) in § 50.55a(b)(3)(iii) for possible future use.

Section 50.55a(b)(3)(iii) OM Condition: Flow-Induced Vibration

The NRC is revising § 50.55a(b)(3)(iii) by removing condition (C), “Flow-induced vibration,” which states that licensees shall monitor flow-induced vibration from hydrodynamic loads and acoustic resonance during preservice testing or inservice testing to identify potential adverse flow effects on components within the scope of the IST program. Based on regulatory

experience with new reactor licensing, the NRC considers that flow-induced vibration is appropriately addressed during the licensing phase and initial testing program at each new reactor nuclear power plant. Therefore, condition (C) is not needed in § 50.55a(b)(3)(iii). The NRC is reserving paragraph (C) in § 50.55a(b)(3)(iii) for possible future use.

Section 50.55a(b)(3)(vii) OM Condition: Snubber Visual Examination Interval Extension

The NRC is adding § 50.55a(b)(3)(vii) to clarify use of ASME OM Code, Subsection ISTD, “Preservice and Inservice Requirements for Dynamic Restraints (Snubbers) in Water-Cooled Reactor Nuclear Power Plants,” paragraph ISTD-4253, “Additional Requirements for 10-year Interval,” and Note 7 of the Table ISTD-4252-1, “Visual Examination Table,” with ASME OM Code Case OMN-15, Revision 2, “Performance-Based Requirements for Extending the Snubber Operational Readiness Testing Interval at LWR Power Plants.” OM Code Case OMN-15, Revision 2, Section 3.4, “Code Case OMN-13,” states that “this Code Case [OMN-15] shall not be used in conjunction with Code Case OMN-13, ‘Performance-Based Requirements for Extending Snubber Inservice Visual Examination Interval at LWR Power Plants.’” OM Code Case OMN-13 is incorporated in paragraph ISTD-4253 and Note 7 of Table ISTD-4252-1 of the 2022 Edition of the ASME OM Code. The use of OM Code Case OMN-13 is prohibited in conjunction with the use of OM Code Case OMN-15. However, the specific language of paragraph ISTD-4253 and Note 7 of Table ISTD-4252-1 does not clarify that the use of paragraph ISTD-4253 and Note 7 of Table ISTD-4252-1 is optional. The NRC is clarifying the language in the ASME OM Code by stating that when implementing Subsection ISTD, paragraph ISTD-4253, and Note 7 of Table ISTD-4252-1, in the 2022 Edition of the ASME OM Code, incorporated by reference in paragraph (a)(1)(iv) of this section, to extend snubber visual examination beyond two refueling cycles (48 months), the licensee is prohibited from applying OM Code Case OMN-15, Revision 2.

Section 50.55a(b)(3)(x) OM Condition: Class 1 Pressure Relief Valve Sample Expansion

The NRC is adding § 50.55a(b)(3)(x) to clarify subparagraph (1) in paragraph (c), *Requirements for Testing Additional Valves*, of Section I-1320, “Test Frequencies, Class 1 Pressure Relief

Valves,” in the ASME OM Code, Appendix I, “Inservice Testing of Pressure Relief Devices in Water-Cooled Reactor Nuclear Power Plants,” which states that for each valve tested for which the as-found set-pressure (first test actuation) exceeds the greater of either the plus/minus tolerance limit of the Owner-established set-pressure acceptance criteria of I-1310(e) or ± 3 percent of valve nameplate set-pressure, two additional valves shall be tested from the same valve group. The expansion of the test sample provides reasonable assurance that a degradation mechanism that might cause multiple Class 1 Pressure Relief Valves to be incapable of performing their safety functions will be identified. Typically, it is expected that variations in actual valve performance will result in an Owner-established set-pressure acceptance criteria for Class 1 Pressure Relief Valves exceeding the default 3-percent valve nameplate set-pressure. The NRC has no concerns with the language of paragraph I-1320(c)(1) where the Owner-established set-pressure acceptance criteria are greater than the 3-percent default value. Based on plant-specific valve performance, the Owner might need to establish set-pressure acceptance criteria for Class 1 Pressure Relief Valves lower than the default 3-percent value. The failure of a Class 1 Pressure Relief Valve to meet the Owner-established set-pressure acceptance criteria can signify that the valve is incapable of performing its safety function. In such cases, it is important to determine whether other Class 1 Pressure Relief Valves also have performance problems that could cause them to be unable to perform their safety functions. However, the specific language of paragraph I-1320(c)(1) might be interpreted to not require an expansion of the test sample where the default 3-percent value is greater than the Owner-established set-pressure acceptance criteria. This might lead in an unsafe situation where the licensee is unaware that multiple Class 1 Pressure Relief Valves are incapable of performing their safety functions. To resolve this concern, the NRC is clarifying the language in paragraph I-1320(c)(1).

Based on a public comment requesting to clarify the proposed rule language, the NRC revised 10 CFR 50.55a(b)(3)(x) to specify two additional valves to be tested from the same group if expanding the test sample is required. If the Owner has not established design set-pressure acceptance criteria, then for each valve tested for which the as-found set-pressure (first actuation) exceeds ± 3

percent of valve nameplate set-pressure, two additional valves shall be tested from the same valve group. The specification of the Owner-established “design” set-pressure acceptance criteria allows the licensee to establish specific criteria for testing purposes.

D. Editorial Correction

Section 50.55a(d) Quality Group B Components

The NRC is making an editorial correction to § 50.55a(d), “Quality Group B components,” by replacing the colon at the end of the second sentence of the introductory paragraph with a period. When the introductory paragraph of § 50.55a(d) was expanded to include a reference to 10 CFR part 52, the new second sentence of the introductory paragraph incorrectly placed a colon at the end of the sentence rather than a period. The use of a colon implies that items (1) and (2) in § 50.55a(d) only apply to 10 CFR part 52 plants. However, item (1) of § 50.55a(d) specifies a requirement for applicants under 10 CFR part 50.

III. Opportunities for Public Participation

The proposed rule was published on August 8, 2023, for a 75-day comment period (88 FR 53384). The public comment period closed on October 23, 2023.

During the public comment period, the NRC held a public meeting on September 6, 2023, to discuss the proposed rule, to answer questions on specific provisions of the proposed rule, and to encourage public input on the proposed rule. The public meeting summary is available in ADAMS as provided in the “Availability of Documents” section of this document.

IV. Public Comment Analysis

The NRC published the proposed rule for public comment in the **Federal Register**. A *comment submission* is a communication or document submitted to the NRC by an individual or entity, with one or more individual comments addressing a subject or issue. The NRC received three comment submission(s) in response to the opportunity for public comment on the proposed rule, with an individual comment total of 22. These comment submissions were submitted by the following commenters (listed in order of receipt):

1. Inservice Testing Owners’ Group (ISTOG)
2. American Society of Mechanical Engineers (ASME)
3. Electric Power Research Institute (EPRI)

Due to the large number of comments received and the length of the NRC’s response, a summary of the NRC’s response to comments in areas of particular interest to stakeholders is included in this final rule. This includes comments that prompted the NRC to make more than editorial changes in this final rule from what the NRC had proposed. The public comment submittals are available from the Federal rulemaking website at <https://www.regulations.gov> under Docket ID NRC-2018-0289. A discussion of all comments and complete NRC responses are presented in a separate document, “Final Rule—Comment Response Document ASME 2021–2022 Code Editions Update,” as provided in the “Availability of Documents” section of this document.

V. Section-by-Section Analysis

This section describes the primary revisions made by this final rule; minor editorial and administrative corrections to correct spacing, administrative errors, and typos are not identified in this analysis.

Paragraph (a)(1)(i)(E)

This final rule revises paragraphs (a)(1)(i)(E)(19) and (20) and add new paragraph (a)(1)(i)(E)(21) to include the 2021 Edition of the ASME BPV Code.

Paragraph (a)(1)(ii)(C)

This final rule revises paragraphs (a)(1)(ii)(C)(55) and (56) and adds new paragraph (a)(1)(ii)(C)(57) to include the 2021 Edition.

Paragraph (a)(1)(iii)(D)

This final rule revises paragraph (a)(1)(iii)(D) to update ASME BPV Code Case N-770-5 to N-770-7 and to update the approval date to December 4, 2020.

Paragraph (a)(1)(iv)(C)

This final rule revises paragraph (a)(1)(iv)(C) to add the 2022 Edition of the ASME OM Code.

Paragraph (b)(1)(iv)

This final rule revises and redesignates existing paragraph (b)(1)(iv) as paragraph (b)(1)(iv) introductory text, adds new paragraphs (b)(1)(iv)(A) and (B), and removes and reserves paragraph (b)(1)(iv)(B).

Paragraph (b)(1)(vi)

This final rule revises paragraph (b)(1)(vi) to revise “sleeves” to “sheaths” and adds a new sentence that this condition is not applicable to 2015 and later Editions.

Paragraph (b)(1)(xi)

This final rule revises the introductory text to paragraph (b)(1)(xi) to clarify the applicable conditions and adds two new conditions specific to polyethylene pressure piping when applying the 2015 through 2021 Editions. The rule also revises paragraph (b)(1)(xi)(B) to add the 2015 to 2021 Editions of BPV Code Section III. In response to a public comment, the NRC has modified the language from the proposed paragraph (b)(1)(xi)(B) to provide more clarity. See Section II of this document, “Discussion,” for more information.

Paragraph (b)(1)(xiii)

This final rule revises the introductory text to paragraph (b)(1)(xiii) and paragraphs (b)(1)(xiii)(A) and (B) to update the applicability of the latest edition and addenda incorporated by reference in § 50.55a(a)(1).

Paragraph (b)(1)(xiv)

This final rule adds new paragraph (b)(1)(xiv) to require that Nonmandatory Appendix NN be used in its entirety.

Paragraph (b)(2)

This final rule revises the introductory text of paragraph (b)(2) to clarify the editions incorporated by reference in paragraph (a)(1)(ii).

Paragraph (b)(2)(viii)

This final rule revises paragraph (b)(2)(viii) to update the applicability of paragraphs (b)(2)(viii)(H) and (b)(2)(viii)(I) through the 2019 Edition.

Paragraph (b)(2)(ix)

This final rule revises paragraph (b)(2)(ix) to update the applicability of paragraph (b)(2)(ix)(A)(2).

Paragraph (b)(2)(xv)

This final rule eliminates and reserves the condition at paragraph (b)(2)(xv).

Paragraph (b)(2)(xxxiv)

This final rule removes the introductory text to paragraph (b)(2)(xxxiv), leaving only the heading; redesignates paragraphs (b)(2)(xxiv)(A) and (B) to (b)(2)(xxiv)(A)(1) and (b)(2)(xxiv)(A)(2); revises paragraph (b)(2)(xxxiv)(A)(1) and (b)(2)(xxxiv)(A)(2) to require use of the latest version of ASME BPV Code Case N-513 approved in RG 1.147 at the time the case was incorporated into the licensee’s inservice inspection program; and adds new paragraph (b)(2)(xxxiv)(B) to prohibit the use of Nonmandatory Appendix U, Supplement U-S1 in the 2021 Edition of Section XI. In response to a public comment, the NRC has

modified the language from the proposed paragraph (b)(2)(xxxiv)(A)(2), to provide more clarity. See Section II of this document, “Discussion,” for more information.

Paragraph (b)(2)(xxxvi)

This final rule revises this condition in paragraph (b)(2)(xxxvi) to require that T_0 and RT_{T0} be determined as specified in the 2021 Edition of ASME BPV Code, Section III, NB-2331, subparagraph (a)(5). In response to a public comment, the NRC has modified the language in (b)(2)(xxxvi), which was not in the proposed rule, to allow the use of Master Curve methods, as specified in NB-2331(a)(5) without obtaining approval from the NRC under § 50.55a(z). See Section II of this document, “Discussion,” for more information.

Paragraph (b)(2)(xliv)

This final rule revises the introductory text to include language from paragraph (b)(2)(xliv)(A), removes paragraphs (A) through (C), and removes the requirement for NRC review and approval. In response to a public comment, the NRC has modified the language from paragraph (b)(2)(xliv), which was not in the proposed rule. See Section II of this document, “Discussion,” for more information.

Paragraph (b)(2)(xlv)

This final rule adds new paragraph (b)(2)(xlv) to prohibit the use of Y-2200, Y-2440, and Y-3200 in the 2021 Edition of Section XI.

Paragraph (b)(2)(xlv)

This final rule adds new paragraph (b)(2)(xlv) to condition the provision of IWA-4540(a) and (e) of the 2021 Edition of the ASME Code, Section XI, to require that a VT-2 examination of the area affected by the repair/replacement activity be conducted during the Type C test in appendix J to 10 CFR part 50.

Paragraph (b)(2)(xlv)

This final rule adds new paragraph (b)(2)(xlv) to prohibit a contracted Repair/Replacement Organization without an ASME Certificate of Authorization and not applying an ASME Stamp/Certification Mark from fabricating ASME Code, Section III parts, appurtenances, piping subassemblies, and supports offsite of the Owner’s facility (e.g., vendor facility) when applying the provisions of IWA-4143 in the 2021 Edition of the ASME Code, Section XI.

Paragraph (b)(2)(xlvii)

This final rule adds new paragraph (b)(2)(xlvii) to require stress corrosion crack growth analysis of the weld overlay material under subparagraph Q-3000(a) of Nonmandatory Appendix Q in the 2021 Edition of the ASME Code, Section XI.

Paragraph (b)(2)(xlviii)

This final rule adds new paragraph (b)(2)(xlviii) to require that analytical evaluations performed in accordance with IWB-3132.3 and IWC-3132.3 be submitted to the NRC.

Paragraph (b)(2)(xlix)

This final rule adds new paragraph (b)(2)(xlix) to prohibit the use of IWB-3600(b)(1) in the 2021 Edition of ASME BPV Code, Section XI (Division 1) for the inlay and onlay that are subject to the augmented inspection requirements in paragraph (g)(6)(ii)(F).

Paragraph (b)(2)(l)

This final rule adds new paragraph (b)(2)(l) to require users of the 2017 Edition of Section XI through the latest Edition and implementing Nonmandatory Appendix A, A-4200(c) and Nonmandatory Appendix G, G-2110(c) to determine T_0 and RT_{T0} as specified in the 2021 Edition of the ASME BPV Code, Section III, NB-2331, subparagraph (a)(5). In response to a public comment, the NRC has added new paragraph (b)(2)(l), which did not appear in the proposed rule, to allow the use of Master Curve methods, including NB-2331(a)(5), and to align with changes in paragraph (b)(2)(xliv) of this section. See Section II of this document, “Discussion,” for more information.

Paragraph (b)(3)(ii)

This final rule revises the introductory text to paragraph (b)(3)(ii) to exclude conditions (A), (B), and (C) from being applicable to the 2022 Edition of the ASME OM Code because those conditions have been incorporated into that edition of the ASME OM Code.

Paragraph (b)(3)(iii)

This final rule revises paragraph (b)(3)(iii) to remove and reserve for future use the conditions in paragraphs (b)(3)(iii)(B) and (C) because those conditions are required by other regulations for new reactors.

Paragraph (b)(3)(vii)

This final rule replaces reserved paragraph (b)(3)(vii) with a new condition on ASME OM Code, Subsection ISTD, paragraph ISTD-4253, and Note 7 of the Table ISTD-4252-1

related to snubbers to be consistent with the accepted provisions in OM Code Case OMN-15.

Paragraph (b)(3)(x)

This final rule creates a new paragraph (b)(3)(x) to clarify the requirement for expanding the test sample for Class 1 Pressure Relief Valves specified in ASME OM Code, Appendix I, paragraph I-1320(c)(1). In response to a public comment, the NRC has modified the language from the proposed paragraph (b)(3)(x) for clarity regarding inservice valve testing. See Section II of this document, "Discussion," for more information.

Paragraph (d)

This final rule revises the introductory text of paragraph (d) by correcting an editorial error. The colon is replaced with a period, at the end of the second sentence.

Paragraph (g)(4)(ii)

This final rule revises paragraph (g)(4)(ii) to update the dates to conform with this rule. In response to a public comment, the NRC has modified the language in paragraph (g)(4)(ii), which was not in the proposed rule, to allow licensees to delay the update of their Appendix VIII program by up to 18 months after the effective date of this final rule. See Section II of this document, "Discussion," for more information.

Paragraph (g)(6)(ii)(D)(9)

This final rule adds new paragraph (g)(6)(ii)(D)(9) to allow licensees the option to utilize Supplement 15 of Mandatory Appendix VIII, in the 2021 Edition of Section XI incorporated by reference in § 50.55a, for volumetric qualification of examinations required by Table 1 of ASME Code Case N-729-6.

Paragraph (g)(6)(ii)(F)(1)

This final rule revises paragraph (g)(6)(ii)(F)(1) to update the requirements for the augmented inspection of dissimilar-metal butt welds in U.S. PWRs from ASME Code Case N-770-5 to N-770-7 and updates the dates to conform with this rule.

Paragraph (g)(6)(ii)(F)(8)

This final rule modifies the existing condition in paragraph (g)(6)(ii)(F)(8) to retain, in part, the volumetric examination frequency of ASME Code Case N-770-5, which was changed in N-770-6.

VI. Generic Aging Lessons Learned Report

Background

In December 2010, the NRC issued "Generic Aging Lessons Learned (GALL) Report," NUREG-1801, Revision 2 (ML103490041), for applicants to use in preparing license renewal applications. The GALL Report provides aging management programs (AMPs) that the NRC has concluded are sufficient for aging management in accordance with the license renewal rule, as required in § 54.21(a)(3). In addition, "Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants," NUREG-1800, Revision 2 (ML103490036), was issued in December 2010, to ensure the quality and uniformity of NRC reviews of license renewal applications and to present a well-defined basis on which the NRC evaluates the applicant's AMPs and activities. In April 2011, the NRC also issued "Disposition of Public Comments and Technical Bases for Changes in the License Renewal Guidance Documents NUREG-1801 and NUREG-1800," NUREG-1950 (ML11116A062), which describes the technical bases for the changes in Revision 2 of the GALL Report and Revision 2 of the standard review plan (SRP) for review of license renewal applications.

Revision 2 of the GALL Report, in Sections XI.M1, XI.S1, XI.S2, XI.M3, XI.M5, XI.M6, XI.M11B, and XI.S3, describes the evaluation and technical bases for determining the sufficiency of ASME BPV Code Subsections IWB, IWC, IWD, IWE, IWF, or IWL for managing aging during the period of extended operation (*i.e.*, up to 60 years of operation). In addition, many other AMPs in the GALL Report rely, in part but to a lesser degree, on the requirements specified in the ASME BPV Code, Section XI. Revision 2 of the GALL Report also states that the 1995 Edition through the 2004 Edition of the ASME BPV Code, Section XI, Subsections IWB, IWC, IWD, IWE, IWF, or IWL, as modified and limited by § 50.55a, were found to be acceptable editions and addenda for complying with the requirements of § 54.21(a)(3), unless specifically noted in certain sections of the GALL Report. The GALL Report further states that future **Federal Register** documents that amend § 50.55a will discuss the acceptability of editions and addenda more recent than the 2004 Edition for their applicability to license renewal. In a final rule issued on June 21, 2011 (76 FR 36232), subsequent to Revision 2 of the GALL Report, the NRC also found that the 2004 Edition with

the 2005 Addenda through the 2007 Edition with the 2008 Addenda of Section XI of the ASME BPV Code, Subsections IWB, IWC, IWD, IWE, IWF, or IWL, as subject to the conditions in § 50.55a, are acceptable for the AMPs in the GALL Report and the conclusions of the GALL Report remain valid with the augmentations specifically noted in the GALL Report. In a final rule issued on July 18, 2017 (82 FR 32934), the NRC further found that the 2009 Addenda through the 2017 Edition of Section XI of the ASME BPV Code, Subsections IWB, IWC, IWD, IWE, IWF, or IWL, as subject to the conditions in § 50.55a, are acceptable for the AMPs in the GALL Report. In a final rule issued on May 4, 2020 (85 FR 26540), the NRC further found that Subsections IWB, IWC, IWD, IWE, IWF, or IWL of Section XI of the 2015 Edition and the 2017 Edition of the ASME BPV Code, as subject to the conditions in § 50.55a, are acceptable for the AMPs in the GALL Report. In a final rule issued on October 27, 2022 (87 FR 65128), the NRC further found that Subsections IWB, IWC, IWD, IWE, IWF, or IWL of Section XI of the 2019 Edition of the ASME BPV Code, as subject to the conditions in § 50.55a, are acceptable for the AMPs in the GALL Report.

In July 2017, the NRC issued "Generic Aging Lessons Learned for Subsequent License Renewal (GALL-SLR) Report," NUREG-2191 (ML17187A031 and ML17187A204), for applicants to use in preparing applications for subsequent license renewal. The GALL-SLR Report provides AMPs that are sufficient for aging management for the subsequent period of extended operation (*i.e.*, up to 80 years of operation), as required in § 54.21(a)(3). The NRC also issued "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants" (SRP-SLR), NUREG-2192, in July 2017 (ML17188A158). In a similar manner as the GALL Report, the GALL-SLR Report, in Sections XI.M1, XI.S1, XI.S2, XI.M3, XI.11B, and XI.S3, describes the evaluation and technical bases for determining the sufficiency of ASME BPV Code Subsections IWB, IWC, IWD, IWE, IWF, or IWL for managing aging during the subsequent period of extended operation. Many other AMPs in the GALL-SLR Report rely, in part but to a lesser degree, on the requirements specified in the ASME BPV Code, Section XI. The GALL-SLR Report also indicates that the 1995 Edition through the 2013 Edition of the ASME BPV Code, Section XI, Subsections IWB, IWC, IWD, IWE, IWF, or IWL, as subject to the conditions in

§ 50.55a, are acceptable for complying with the requirements of § 54.21(a)(3), unless specifically noted in certain sections of the GALL–SLR Report.

Evaluation With Respect to Aging Management

As part of this final rule, the NRC evaluated whether those AMPs in the GALL Report and GALL–SLR Report that rely upon Subsections IWB, IWC, IWD, IWE, IWF, or IWL of Section XI in the editions and addenda of the ASME BPV Code incorporated by reference into § 50.55a, in general continue to be acceptable if the AMP relies upon these Subsections in the 2021 Edition. The NRC finds that the 2021 Edition of Section XI of the ASME BPV Code, Subsections IWB, IWC, IWD, IWE, IWF, or IWL, as subject to the conditions of this rule, are acceptable for the AMPs in the GALL Report and GALL–SLR Report with the exception of augmentation, as specifically noted in those reports, and the NRC finds that the conclusions of the GALL Report and GALL–SLR Report remain valid. Accordingly, an applicant for license renewal (including subsequent license renewal) may use, in its plant-specific license renewal application, Subsections IWB, IWC, IWD, IWE, IWF, or IWL of Section XI of the 2021 Edition of the ASME BPV Code, as subject to the conditions in this final rule, without additional justification. Similarly, a licensee approved for license renewal that relied on the AMPs may use Subsections IWB, IWC, IWD, IWE, IWF, or IWL of Section XI of the 2021 Edition of the ASME BPV Code. However, applicants must assess and follow applicable NRC requirements with regard to licensing basis changes and evaluate the possible impact on the elements of existing AMPs.

Some of the AMPs in the GALL Report and GALL–SLR Report recommend augmentation of certain Code requirements in order to ensure adequate aging management for license renewal. The technical and regulatory aspects of the AMPs for which augmentations are recommended also apply if the 2021 Edition of Section XI of the ASME BPV Code is used to meet the requirements of § 54.21(a)(3). The NRC evaluated the changes in the 2021 Edition of Section XI of the ASME BPV Code to determine if the augmentations described in the GALL Report and GALL–SLR Report remain necessary; the NRC’s evaluation has concluded that the augmentations described in the GALL and GALL–SLR Reports are necessary to ensure adequate aging management.

For example, GALL–SLR Report AMP XI.S3, “ASME Section XI, Subsection IWF,” recommends that volumetric examination consistent with that of the ASME BPV Code, Section XI, Table IWB–2500–1, Examination Category B–G–1 should be performed to detect cracking for high strength structural bolting (actual measured yield strength greater than or equal to 150 kilopounds per square inch (ksi)) (1034 megapascals (MPa)) in sizes greater than 1-inch nominal diameter. The GALL–SLR Report also indicates that this volumetric examination may be waived with adequate plant-specific justification. This guidance for aging management in the GALL–SLR Report is the augmentation of the visual examination specified in Subsection IWF of the 2021 Edition of the ASME BPV Code, Section XI.

A license renewal applicant may either augment its AMPs as described in the GALL Report and GALL–SLR Report (for operation up to 60 and 80 years respectively) or propose alternatives for the NRC to review as part of the applicant’s plant-specific justification for its AMPs.

VII. Regulatory Flexibility Certification

Under the Regulatory Flexibility Act (5 U.S.C. 605(b)), the NRC certifies that this rule does not have a significant economic impact on a substantial number of small entities. This final rule affects only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the scope of the definition of “small entities” set forth in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810).

VIII. Regulatory Analysis

The NRC has prepared a final regulatory analysis on this regulation. The analysis examines the costs and benefits of the alternatives considered by the NRC. The regulatory analysis is available as indicated in the “Availability of Documents” section of this document.

IX. Backfitting and Issue Finality

Introduction

The NRC’s Backfit Rule in § 50.109 states that the NRC shall require the backfitting of a facility only when it finds the action to be justified under specific standards stated in the rule. Section 50.109(a)(1) defines backfitting as the modification of or addition to systems, structures, components, or design of a facility; the design approval or manufacturing license for a facility; or the procedures or organization

required to design, construct, or operate a facility. Any of these modifications or additions may result from a new or amended provision in the NRC’s rules or the imposition of a regulatory position interpreting the NRC’s rules that is either new or different from a previously applicable NRC position after issuance of the construction permit or the operating license or the design approval.

Section 50.55a requires nuclear power plant licensees to—

- Construct ASME BPV Code Class 1, 2, and 3 components in accordance with the rules provided in Section III, Division 1, of the ASME BPV Code (“Section III”).
- Inspect, examine, and repair or replace Class 1, 2, 3, Class MC, and Class CC components in accordance with the rules provided in Section XI, Division 1, of the ASME BPV Code (“Section XI”).
- Test Class 1, 2, and 3 pumps and valves in accordance with the rules provided in the ASME OM Code.
- Inspect, examine, repair, or replace, and test Class 1, 2, and 3 dynamic restraints (snubbers) in accordance with the rules provided in either the ASME OM Code or Section XI, depending on the Code edition.

This rulemaking incorporates by reference the 2021 Edition of the ASME BPV Code, Section III, Division 1, and ASME BPV Code, Section XI, Division 1, as well as the 2022 Edition of the ASME OM Code.

The ASME BPV and OM Codes are national consensus standards developed by participants with broad and varied interests, in which all interested parties (including the NRC and utilities) participate. A consensus process involving a wide range of stakeholders is consistent with the NTTAA, inasmuch as the NRC has determined that there are sound regulatory reasons for establishing regulatory requirements for design, maintenance, ISI, and IST by rulemaking. The process also facilitates early stakeholder consideration of backfitting issues. Therefore, the NRC finds that the NRC need not address backfitting with respect to the NRC’s general practice of incorporating by reference updated ASME Codes.

Overall Backfitting Considerations: Section III of the ASME BPV Code

Incorporation by reference of more recent editions and addenda of Section III of the ASME BPV Code does not affect a plant that has received a construction permit or an operating license or a design that has been approved. This is because the edition and addenda to be used in constructing

a plant are, under § 50.55a, determined based on the date of the construction permit or combined license, and are not changed thereafter, except voluntarily by the licensee. The incorporation by reference of more recent editions and addenda of Section III ordinarily applies only to applicants after the effective date of the final rule incorporating these new editions and addenda. Therefore, incorporation by reference of a more recent edition and addenda of Section III does not constitute “backfitting” as defined in § 50.109(a)(1).

Overall Backfitting Considerations: Section XI of the ASME BPV Code and the ASME OM Code

Incorporation by reference of more recent editions and addenda of Section XI of the ASME BPV Code and the ASME OM Code affects the ISI and IST programs of operating reactors. However, the Backfit Rule generally does not apply to incorporation by reference of later editions of the ASME BPV Code (Section XI) and OM Code. As previously mentioned, the NRC’s longstanding regulatory practice has been to incorporate later versions of the ASME Codes into § 50.55a. Under § 50.55a, licensees must periodically update their ISI and IST programs to the latest edition of Section XI of the ASME BPV Code and the ASME OM Code incorporated by reference into § 50.55a 18 months before the start of a new code of record interval. Therefore, when the NRC approves and requires the use of a later version of the Code for ISI and IST, it is implementing this longstanding regulatory practice and requirement.

Other circumstances where the NRC does not apply the Backfit Rule to the approval and requirement to use later Code editions are as follows:

1. When the NRC takes exception to a later ASME BPV Code or OM Code provision but merely retains the current existing requirement, prohibits the use of the later Code provision, limits the use of the later Code provision, or supplements the provisions in a later Code, the Backfit Rule does not apply because the NRC is not imposing new requirements. However, the NRC explains any such exceptions to the Code in the preamble to and regulatory analysis for the rule.

2. When an NRC exception relaxes an existing ASME BPV Code or OM Code provision but does not prohibit a licensee from using the existing Code provision, the Backfit Rule does not apply because the NRC is not imposing new requirements.

3. Modifications and limitations imposed during previous routine updates of § 50.55a have established a

precedent for determining which modifications or limitations are backfits, or require a backfit analysis (e.g., final rule dated September 10, 2008 (73 FR 52731), and a correction dated October 2, 2008 (73 FR 52735)). The application of the backfit requirements to modifications and limitations in the current rule are consistent with the application of backfit requirements to modifications and limitations in previous rules.

The incorporation by reference and adoption of a requirement mandating the use of a later ASME BPV Code or OM Code may constitute backfitting in some circumstances. In these cases, the NRC would perform a backfit analysis or documented evaluation in accordance with § 50.109. These include the following:

1. When the NRC endorses a later provision of the ASME BPV Code or OM Code that takes a substantially different direction from the existing requirements, the action is treated as a backfit (e.g., 61 FR 41303; August 8, 1996).

2. When the NRC requires implementation of a later ASME BPV Code or OM Code provision on an expedited basis, the action is treated as a backfit. This applies when implementation is required sooner than it would be required if the NRC simply endorsed the Code without any expedited language (e.g., 64 FR 51370; September 22, 1999).

3. When the NRC takes an exception to an ASME BPV Code or OM Code provision and imposes a requirement that is substantially different from the existing requirement as well as substantially different from the later Code (e.g., 67 FR 60529; September 26, 2002).

Detailed Backfitting Discussion: Changes Beyond Those Necessary To Incorporate by Reference the New ASME BPV and OM Code Provisions

This section discusses the backfitting considerations for all the changes to § 50.55a that go beyond the minimum changes necessary and required to adopt the new ASME Code edition into § 50.55a.

ASME BPV Code, Section III

1. Revise § 50.55a(b)(1)(iv) to not approve Subpart 2.19 in NQA–1–17, NQA–1–19, and NQA–1–22 for use. This revision clarifies current requirements and is consistent with the meaning and intent of current requirements. The condition does not constitute a new or changed NRC position. Therefore, this condition is not a backfit.

2. Revise § 50.55a(b)(1)(vi) to change the word “sleeves” to “sheaths” and to note that this condition is not applicable to 2015 and later Editions. This condition is not applicable to 2015 and later Editions as Subsection NH is deleted from Section III Division 1. The revisions to clarify a word and clarification of Code edition applicability do not constitute a change in NRC position. Therefore, this is not a backfit.

3. Revise § 50.55a(b)(1)(xi) to revise this condition regarding the applicability to specific Code editions. When applying the 2015 and 2017 Editions of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the first provision, as noted in § 50.55a(b)(1)(xi)(A). When applying the 2015 through 2021 Editions of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the second provision, as noted in § 50.55a(b)(1)(xi)(B). When applying the 2017 Edition of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the third provision, as noted in § 50.55a(b)(1)(xi)(C). The revision is only for Code editions applicability and does not constitute a new or changed NRC position. Therefore, this change is not a backfit.

4. Revise § 50.55a(b)(1)(xiii) including the first provision, § 50.55a(b)(1)(xiii)(A), and second provision, § 50.55a(b)(1)(xiii)(B), to extend the applicability of the conditions through the latest edition of the ASME BPV Code, Section III incorporated by reference in paragraph (a)(1)(i). The NRC is revising this condition to apply to the latest edition incorporated by reference, which is not a change to NRC position and, therefore, is not a backfit.

5. Add § 50.55a(b)(1)(xiv) to condition the use of the provisions of NCA–8151, NCA–8500, and Nonmandatory Appendix NN in the 2021 Edition of Section III, to require that when Nonmandatory Appendix NN is used for the elimination of surface defects and repairs of stamped components prior to the completion of Form N–3 Data Report, all applicable requirements of Nonmandatory Appendix NN shall be met. The condition on Nonmandatory Appendix NN does not constitute a new or changed NRC position. Therefore, the

addition of this condition is not a backfit.

ASME BPV Code, Section XI

1. Revise § 50.55a(b)(2)(viii), to remove the applicability of § 50.55a(b)(2)(viii)(H) and (I) from the 2021 Edition. This change to § 50.55a(b)(2)(viii) removes conditions that are no longer applicable to the 2021 Edition due to updates to the BPV Code that addressed the condition. Since this change accepts the relevant code provisions in the 2021 Edition as-is, it is not a backfit.

2. Revise § 50.55a(b)(2)(ix), to remove the applicability of § 50.55a(b)(2)(ix)(A)(2) from the 2021 Edition. This change to § 50.55a(b)(2)(ix) removes a condition that is no longer applicable to the 2021 Edition due to updates to the BPV Code that addressed the condition. Since this change accepts the relevant code provisions in the 2021 Edition as-is, it is not a backfit.

3. Remove and reserve § 50.55a(b)(2)(xv). This condition was applicable to older Editions of Section XI that are no longer in use by licensees. Removing this condition does not modify current licensee inservice inspection requirements and, therefore, is not a backfit.

4. Revise § 50.55a(b)(2)(xxxiv)(A) to modify the cited version of ASME Code Case N-513 to the latest version approved in RG 1.147 at the time the case was incorporated into the licensee's program. The new conditions at paragraphs (b)(2)(xxxiv)(A)(1) and (A)(2) are the existing conditions with an added clarification of which version of Code Case N-513 licensees must use when complying with the conditions. This clarification is a restatement of the requirements in § 50.55a(b)(5) and is therefore not a backfit.

5. Add § 50.55a(b)(2)(xxxiv)(B) to prohibit the use of Nonmandatory Appendix U, Supplement U-S1. Supplement U-S1 of Nonmandatory Appendix U is obsolete relative to Code Case N-513, as included in the latest revision of RG 1.147 incorporated by reference in § 50.55a(a)(3)(ii). Licensees have adopted the updated rules in Code Case N-513 for temporary acceptance of flaws in moderate energy Class 2 and 3 piping. This revision does not modify the current inservice inspection regulatory requirements and, therefore, is not a backfit.

6. Revise § 50.55a(b)(2)(xxxvi) to delete the requirement to submit the analyses for NRC approval and instead follow the requirements of NB-2331, subparagraph (a)(5). The revision to this condition allows licensees to use T_0 and RT_{T_0} in licensing basis calculations by

application of a specific method without NRC review and approval under paragraph (z). Licensees retain the option of obtaining approval under paragraph (z) to implement alternative methods. Therefore, this change is not a backfit.

7. Revise § 50.55a(b)(2)(xlili)(A) to clarify that NRC review and approval is not required for out-of-limit evaluation submissions. This revision only clarifies that NRC approval of the analysis is not a prerequisite for licensee activities. This revision does not result in a change to licensee requirements and is, therefore, not a backfit.

The submittal requirements of § 50.55a(b)(2)(xlili)(B) and (C) are removed because they are replaced by new condition § 50.55a(b)(2)(l). The new condition states that licensees must follow the requirements of NB-2331, subparagraph (a)(5) when calculating T_0 and RT_{T_0} . With this revision, licensees now have the option to implement an acceptable method for determining T_0 and RT_{T_0} without NRC review and approval. Therefore, this change is not a backfit.

8. Add § 50.55a(b)(2)(xliv) to prohibit the use of Article Y-2200, Subarticle Y-2440, and Article Y-3200 in Nonmandatory Appendix Y. These articles have corresponding Code Cases, which have been included in the latest revision of RG 1.147 incorporated by reference in § 50.55a(a)(3)(ii). Licensees have adopted the crack growth laws in the corresponding Code Cases: Cases N-809, N-889, and N-643, respectively. The condition on Nonmandatory Appendix Y does not constitute a new or changed NRC position. Therefore, the addition of this condition is not a backfit.

9. Add § 50.55a(b)(2)(xlv) to condition the provision of IWA-4540(a) and (e) of the 2021 Edition of the ASME Code, Section XI, to require that a VT-2 examination be performed of the area affected by the repair/replacement activity during the Type C test in appendix J to 10 CFR part 50. The condition on IWA-4540(a) and (e) does not constitute a new or changed NRC position. Therefore, the addition of this condition is not a backfit.

10. Add § 50.55a(b)(2)(xlvi) to condition the provision of IWA-4143 of the 2021 Edition of the ASME Code, Section XI, by prohibiting a contracted Repair/Replacement Organization from fabricating a part offsite of the Owner's facility (e.g., vendor facility) without an ASME Certificate of Authorization and without applying an ASME Stamp/Certification Mark. The condition on IWA-4143 does not constitute a new or changed NRC position. Therefore, the

addition of this condition is not a backfit.

11. Add § 50.55a(b)(2)(xlvii) to prevent a new exemption in the 2021 Edition of subparagraph Q-3000(a) of the requirement to remove stress corrosion crack growth analysis of the overlay material. This is a new condition that retains the previous requirements and allowances of the previous approved version of Nonmandatory Appendix Q, and accordingly, is not a new or changed position. Therefore, the addition of this condition is not a backfit.

12. Add § 50.55a(b)(2)(xlviii) to require submission of analytical evaluations performed under IWB-3132.3 and IWC-3122.3 to the NRC. This is a new condition that retains the requirements of the previous approved version of Section XI, and accordingly, is not a new or changed position. Therefore, the addition of this condition is not a backfit.

13. Add § 50.55a(b)(2)(xlix) to prohibit the use of IWB-3600(b)(1) in the 2021 Edition of the Code for the inlay and onlay that are subject to the augmented inspections specified in paragraph (g)(6)(ii)(F) of this section. The condition on the analytical evaluation of a flaw in the inlay or onlay does not constitute a new or changed NRC position. Therefore, the addition of this condition is not a backfit.

14. Add § 50.55a(b)(2)(l) to require licensees using Nonmandatory Appendix A, A-4200(c) and Nonmandatory Appendix G, G-2110(c) to determine T_0 and the associated RT_{T_0} according to the requirements of NB-2331, subparagraph (a)(5). This condition replaces the former condition § 50.55a(b)(2)(xlili)(B) and (C), which required licensees to submit determination of T_0 and RT_{T_0} to the NRC for review and approval. Licensees retain the option of obtaining approval under paragraph (z) to implement alternative methods. Therefore, the new condition is not a backfit.

15. Add § 50.55a(g)(6)(ii)(D)(9) to allow licensees the option to utilize Supplement 15 of Mandatory Appendix VIII in the 2021 Edition or later of Section XI, incorporated by reference in § 50.55a, for volumetric qualification of examinations required by Table 1 of ASME Code Case N-729-6. Providing licensees the option of using either the qualification program in ASME Code Case N-729-6 or Supplement 15 of Mandatory Appendix VIII does not constitute a new or changed NRC position. Therefore, this addition is not a backfit.

16. Modify § 50.55a(a)(1)(iii)(D) and § 50.55a(g)(6)(ii)(F) to update the

requirements for the augmented inspection of dissimilar-metal butt welds in U.S. PWRs from ASME Code Case N-770-5 to N-770-7. This change requires one condition to be updated, § 50.55a(g)(6)(ii)(F)(1), and one condition modified to retain an inspection frequency for optimized butt welds consistent with ASME Code Case N-770-5. The current regulatory requirements for the examination frequency of Inspection Items C-2 and F-2 welds have not changed. The change in examination categorization for B-3 provides no change to inspection frequency or requirements. The change in scope expansion requirements is a reduction in the requirements if a flaw is identified in an AHA butt weld consistent with the regulatory purpose of examination scope expansion. Therefore, the update and modification of previous conditions are not backfits.

ASME OM Code

1. Revise § 50.55a(b)(3)(ii) by removing conditions (A), (B), and (C) where licensees are implementing the 2022 Edition of the ASME OM Code as incorporated by reference in § 50.55a, because Appendix III to the 2022 Edition of the ASME OM Code appropriately incorporates the requirements specified in those conditions. The revisions do not modify the current IST regulatory requirements and, therefore, are not backfits.

2. Delete condition (B) in § 50.55a(b)(3)(iii), which states that licensees of new reactors must perform bi-directional testing of check valves within the IST program where practicable. The licensees of new reactors are required to apply more recent editions of the ASME OM Code that require bi-directional testing of check valves. Therefore, condition (B) is not needed in § 50.55a(b)(3)(iii). This change does not modify the current IST regulatory requirements and, therefore, is not a backfit.

3. Delete condition (C) in § 50.55a(b)(3)(iii), which states that licensees of new reactors shall monitor flow-induced vibration from hydrodynamic loads and acoustic resonance during preservice testing or inservice testing to identify potential adverse flow effects on components within the scope of the IST program. Based on regulatory experience with new reactor licensing, the NRC considers that flow-induced vibration is appropriately addressed during the licensing phase and initial testing program at each new reactor nuclear power plant. Therefore, condition (C) is not needed in § 50.55a(b)(3)(iii). This

change does not modify the current IST regulatory requirements and, therefore, is not a backfit.

4. Create a new § 50.55a(b)(3)(vii) to clarify use of ASME OM Code, Subsection ISTD, paragraph ISTD-4253, and Note 7 of the Table ISTD-4252-1, with the ASME OM Code Case OMN-15, Revision 2. This modification reflects a clarification of ASME OM Code, Subsection ISTD, paragraph ISTD-4253 and Table ISTD-4252-1, is not a new or changed NRC position, and therefore, is not a backfit.

5. Create a new § 50.55a(b)(3)(x) to clarify ASME OM Code, Appendix I, paragraph I-1320(c)(1), which states that for each valve tested for which the as-found set-pressure (first test actuation) exceeds the greater of either the plus/minus tolerance limit of the Owner-established design set-pressure acceptance criteria of paragraph I-1310(e) or ± 3 percent of valve nameplate set-pressure, two additional valves shall be tested from the same valve group. The expansion of the test sample provides reasonable assurance that a degradation mechanism that might cause multiple Class 1 Pressure Relief Valves to be incapable of performing their safety functions will be identified. However, the specific language of paragraph I-1320(c)(1) might be interpreted to not require an expansion of the test sample where the default 3-percent value is greater than the Owner-established set-pressure acceptance criteria. This modification reflects a clarification of ASME OM Code, Appendix I, paragraph I-1320(c)(1), is not a new or changed NRC position, and, therefore, is not a backfit.

ASME Editorial Correction

1. Replace the colon at the end of the second sentence of the introductory paragraph of § 50.55a(d) with a period. This is an editorial correction and, therefore, not a backfit.

Conclusion

The NRC finds that incorporation by reference into § 50.55a of the 2021 Edition of Section III, Division 1, of the ASME BPV Code subject to the identified conditions; the 2021 Edition of Section XI, Division 1, of the ASME BPV Code, subject to the identified conditions; and the 2022 Edition of the ASME OM Code subject to the identified conditions, does not constitute backfitting or represent an inconsistency with any issue finality provisions in 10 CFR part 52.

X. Plain Writing

The Plain Writing Act of 2010 (Pub. L. 111-274) requires Federal agencies to

write documents in a clear, concise, and well-organized manner. The NRC has written this document to be consistent with the Plain Writing Act as well as the Presidential Memorandum, "Plain Language in Government Writing," published June 10, 1998 (63 FR 31885).

XI. Environmental Assessment and Final Finding of No Significant Environmental Impact

The NRC has determined under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in subpart A of 10 CFR part 51, that this rule is not a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required.

This final rule is in accordance with the NRC's policy to incorporate by reference in § 50.55a new editions of the ASME BPV and OM Codes to provide updated rules for construction and inspecting components and testing pumps, valves, and dynamic restraints (snubbers) in light-water nuclear power plants. The ASME Codes are national voluntary consensus standards and are required by the NTTAA to be used by Government agencies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. The rule does not significantly increase the probability or consequences of accidents, no changes are being made in the types of effluents that may be released offsite, and there is no significant increase in public radiation exposure. This rule does not involve non-radiological plant effluents and has no other environmental impact. Therefore, no significant non-radiological impacts are associated with this action.

The determination of this environmental assessment is that there is no significant effect on the quality of the human environment from this action.

XII. Paperwork Reduction Act

This final rule does not contain any new or amended collections of information subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). Existing collections of information were approved by the Office of Management and Budget (OMB), approval number 3150-0264.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information unless the document requesting or requiring the

collection displays a currently valid OMB control number.

XIII. Congressional Review Act

This final rule is a rule as defined in the Congressional Review Act (5 U.S.C. 801–808). However, the OMB has not found it to be a major rule as defined in the Congressional Review Act.

XIV. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Public Law 104–113, requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless using such a standard is inconsistent with applicable law or is otherwise impractical. In this rule, the NRC is continuing to use the ASME BPV and OM Codes by incorporating by reference the 2021 Edition of the BPV Code and the 2022 Edition of the OM Code. The ASME Code editions constitute voluntary consensus standards, in which all interested parties (including the NRC and licensees of nuclear power plants) participate.

XV. Incorporation by Reference—Reasonable Availability to Interested Parties

The NRC is incorporating by reference two recent editions to the ASME Codes for nuclear power plants: 2021 Edition of the American Society of Mechanical Engineers *Boiler and Pressure Vessel Code* and the 2022 Edition of the American Society of Mechanical Engineers *Operation and Maintenance of Nuclear Power Plants, Division 1, OM Code: Section IST, for nuclear power plants*. As described in the “Background” and “Discussion” sections of this document, these materials contain standards for the design, fabrication, and inspection of nuclear power plant components.

The NRC is required by law to obtain approval for incorporation by reference from the Office of the Federal Register (OFR). The OFR’s requirements for incorporation by reference are set forth in 1 CFR part 51. On November 7, 2014, the OFR adopted changes to its regulations governing incorporation by reference (79 FR 66267). The OFR regulations require an agency to discuss, in the preamble of the final rule, the ways that the materials it incorporates by reference are reasonably available to interested parties and how interested parties can obtain the materials. The discussion in this section complies with the requirement for final rules as set forth in § 51.5(b)(2).

The NRC considers “interested parties” to include all potential NRC

stakeholders, not only the individuals and entities regulated or otherwise subject to the NRC’s regulatory oversight. These NRC stakeholders are not a homogenous group but vary with respect to the considerations for determining reasonable availability. Therefore, the NRC distinguishes between different classes of interested parties for the purposes of determining whether the material is “reasonably available.” The NRC considers the following to be classes of interested parties in NRC rulemakings with regard to the material to be incorporated by reference:

- Individuals and small entities regulated or otherwise subject to the NRC’s regulatory oversight (this class also includes applicants and potential applicants for licenses and other NRC regulatory approvals) and who are subject to the material to be incorporated by reference by rulemaking. In this context, “small entities” has the same meaning as a “small entity” under § 2.810.
- Large entities otherwise subject to the NRC’s regulatory oversight (this class also includes applicants and potential applicants for licenses and other NRC regulatory approvals) and who are subject to the material to be incorporated by reference by rulemaking. In this context, “large entities” are those that do not qualify as a “small entity” under § 2.810.
- Non-governmental organizations with institutional interests in the matters regulated by the NRC.
- Other Federal agencies, States, local governmental bodies (within the meaning of § 2.315(c)).
- Federally recognized and State-recognized³ Indian Tribes.
- Members of the public (*i.e.*, individual, unaffiliated members of the public who are not regulated or otherwise subject to the NRC’s regulatory oversight) who may wish to gain access to the materials that the NRC is incorporate by reference by rulemaking in order to participate in the rulemaking process.

The 2021 Edition of the ASME BPV Code and the 2022 Edition of the ASME OM Code may be viewed, by appointment, at the Technical Library, which is located at Two White Flint, 11545 Rockville Pike, Rockville, Maryland 20852. You may submit your request to the Technical Library via email at Library.Resource@nrc.gov

³ State-recognized Indian Tribes are not within the scope of § 2.315(c). However, for purposes of the NRC’s compliance with 1 CFR 51.5, the term “interested parties” includes a broad set of stakeholders, including State-recognized Indian Tribes.

between 8 a.m. and 4 p.m. eastern time, Monday through Friday, except Federal holidays. In addition, as described in Section XVII of this document, documents related to this final rule are available online in the NRC’s ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>.

Interested parties may purchase a copy of the ASME materials from ASME at Three Park Avenue, New York, NY 10016, or at the ASME website <https://www.asme.org/shop/standards>. The materials are also accessible through third-party subscription services such as Accuris IHS (15 Inverness Way East, Englewood, CO 80112; <https://store accuristech.com> (formerly <https://global.ihs.com>)) and Thomson Reuters Techstreet (3916 Ranchero Dr., Ann Arbor, MI 48108; <https://store accuristech.com> (formerly <https://www.techstreet.com>)). The purchase prices for individual documents range from \$325 to \$720, and the cost to purchase all documents is approximately \$9,000.

For the class of interested parties constituting members of the public who wish to gain access to the materials to be incorporated by reference in order to participate in the rulemaking, the NRC recognizes that the \$9,000 cost may be so high that the materials could be regarded as not reasonably available for purposes of commenting on this rulemaking, despite the NRC’s actions to make the materials available at the NRC’s PDR. Accordingly, the NRC requested that ASME consider enhancing public access to these materials during the public comment period. On March 2, 2023, the ASME agreed to make the materials available online in a read-only electronic access format during the public comment period (ML23068A033).

During the public comment period, the ASME made publicly available the two editions of the ASME Codes for nuclear power plants that the NRC proposed to incorporate by reference. These materials were available publicly in a read-only format at the ASME website, <https://go.asme.org/NRC-ASME>.

The materials are available to all interested parties in multiple ways and in a manner consistent with their interest in this final rule. Therefore, the NRC concludes that the materials the NRC is incorporating by reference in this final rule are reasonably available to all interested parties.

XVI. Availability of Guidance

The NRC will not be issuing guidance for this final rule. The ASME BPV Code and OM Code provide direction for the

performance of activities to satisfy the Code requirements for design, inservice inspection, and inservice testing of nuclear power plant structures, systems, and components. In addition, the NRC provides guidance in this document for the implementation of the new conditions on the ASME BPV Code and OM Code, as necessary. The NRC has a number of SRPs that provide guidance to NRC reviewers and make communication and understanding of NRC review processes available to members of the public and the nuclear power industry. NUREG–0800, “Review of Safety Analysis Reports for Nuclear Power Plants,” has numerous sections

which discuss implementation of various aspects of the ASME BPV Code and OM Code (e.g., Sections 3.2.2, 3.8.1, 3.8.2, 3.9.3, 3.9.6, 3.9.7, 3.9.8, 3.13, 5.2.1.1, 5.2.1.2, 5.2.4, and 6.6). The NRC also publishes regulatory guides and generic communications (*i.e.*, regulatory issue summaries and information notices) to communicate and clarify NRC technical or policy positions on regulatory matters which may contain guidance relative to this final rule.

Revision 3 of NUREG–1482, “Guidelines for Inservice Testing at Nuclear Power Plants,” provides guidance for the development and implementation of IST programs at

nuclear power plants (ML2020A473). With direction provided in the ASME BPV and OM Codes, and guidance in this document, the NRC has determined that preparation of a separate guidance document is not necessary for this update to § 50.55a. However, the NRC will consider preparing a revision to NUREG–1482 in the future to address the latest edition of the ASME OM Code incorporated by reference in § 50.55a.

XVII. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

AVAILABILITY OF DOCUMENTS

Document	ADAMS Accession No./web link/ Federal Register citation
Final Rule Documents	
Final Rule—Regulatory Analysis ASME 2021–2022 Code Editions Update, July 2024	ML24053A051.
Final Rule—Public Comment Response Document ASME 2021–2022 Code Editions Update, July 2024	ML24053A058.
Annotated Comment Submissions for the ASME 2021–2022 Code Editions Update, July 2024	ML24053A089.
Proposed Rule Documents	
Proposed Rule—Federal Register Notice for American Society of Mechanical Engineers 2021–2022 Code Editions, August 2023.	88 FR 53384.
Proposed Rule—Regulatory Analysis for American Society of Mechanical Engineers 2021–2022 Code Editions Update, July 2023.	ML23032A316.
Proposed Rule—Unofficial Redline Strikeout of the NRC’s Proposed Rule: Proposed Rule to Incorporate by Reference American Society of Mechanical Engineers Codes, July 2023.	ML23032A318.
Proposed Rule—Summary of the Public Meeting on the ASME 2021–2022 Code Editions Rulemaking, September 6, 2023.	ML23265A245.
Related Documents	
Regulatory Guide (RG), RG 1.28, Revision 6, “Quality Assurance Program Criteria (Design and Construction),” September 2023.	ML23177A002.
Rulemaking: Proposed Rule: Email from Kathryn Hyam (ASME) to Louise Lund (NRC), Request for Limited Public Access of Code for Public Comment Period, March 2, 2023.	ML23068A033.
Staff Requirements—Affirmation Session, 11:30 a.m., Friday, September 10, 1999, Commissioners’ Conference Room, One White Flint North, Rockville, Maryland (Open to Public Attendance).	ML003755050.
Regulatory Guide 1.147, Revision 20, “Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,” December 2021.	ML21181A222.
NUREG–1482, Revision 3, “Guidelines for Inservice Testing at Nuclear Power Plants,” July 2020	ML20202A473.
NUREG–1800, Revision 2, “Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants,” December 2010.	ML103490036.
NUREG–1801, Revision 2, “Generic Aging Lessons Learned (GALL) Report,” December 2010	ML103490041.
NUREG–1950, “Disposition of Public Comments and Technical Bases for Changes in the License Renewal Guidance Documents NUREG–1801 and NUREG–1800,” April 2011.	ML11116A062.
NUREG–2191, Volumes 1 and 2, “Generic Aging Lessons Learned for Subsequent License Renewal (GALL–SLR) Report,” July 2017.	ML17187A031
NUREG–2192, “Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants,” July 2017.	ML17187A204.
Final Rule—American Society of Mechanical Engineers 2019–2020 Code Editions, October 27, 2022 ...	ML17188A158.
Final Rule—American Society of Mechanical Engineers (ASME) Codes and New and Revised ASME Code Cases, June 21, 2011.	87 FR 65128.
Final Rule—Incorporation by Reference, November 7, 2014	79 FR 66267.
Final Safety Evaluation Enclosure for NEI 14–05A, Revision 1, November 23, 2020	76 FR 36232.
Nuclear Energy Institute (NEI) 14–05A, “Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services,” Revision 1, May 2020.	79 FR 66267.
Final Guide—Regulatory Guide: Quality Assurance Program Criteria (Design and Construction), September 11, 2023.	ML20322A019.
Final Guide—Regulatory Guide: Quality Assurance Program Criteria (Design and Construction), Sep-	ML20135H229.
Final Guide—Regulatory Guide: Quality Assurance Program Criteria (Design and Construction), Sep-	88 FR 62292.
ASME Codes, Standards, and Code Cases	
American Society of Mechanical Engineers	https://www.asme.org/shop/standards .
Accuris IHS (formerly IHS)	https://store accuristech.com .

AVAILABILITY OF DOCUMENTS—Continued

Document	ADAMS Accession No./web link/ Federal Register citation
Thomson Reuters Techstreet	https://store.accuristech.com .

List of Subjects in 10 CFR Part 50

Administrative practice and procedure, Antitrust, Backfitting, Classified information, Criminal penalties, Education, Emergency planning, Fire prevention, Fire protection, Incorporation by reference, Intergovernmental relations, Nuclear power plants and reactors, Penalties, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements, Whistleblowing.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 552 and 553, the NRC is adopting the following amendments to 10 CFR part 50:

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

■ 1. The authority citation for part 50 continues to read as follows:

Authority: Atomic Energy Act of 1954, secs. 11, 101, 102, 103, 104, 105, 108, 122, 147, 149, 161, 181, 182, 183, 184, 185, 186, 187, 189, 223, 234 (42 U.S.C. 2014, 2131, 2132, 2133, 2134, 2135, 2138, 2152, 2167, 2169, 2201, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2239, 2273, 2282); Energy Reorganization Act of 1974, secs. 201, 202, 206, 211 (42 U.S.C. 5841, 5842, 5846, 5851); Nuclear Waste Policy Act of 1982, sec. 306 (42 U.S.C. 10226); National Environmental Policy Act of 1969 (42 U.S.C. 4332); 44 U.S.C. 3504 note; Sec. 109, Pub. L. 96–295, 94 Stat. 783.

- 2. In § 50.55a:
 - a. In paragraph (a)(1)(i)(E)(19), remove the word “and”;
 - b. Revise paragraph (a)(1)(i)(E)(20);
 - c. Add paragraph (a)(1)(i)(E)(21);
 - d. In paragraph (a)(1)(ii)(C)(55), remove the word “and”;
 - e. Revise paragraph (a)(1)(ii)(C)(56);
 - f. Add paragraph (a)(1)(ii)(C)(57);
 - g. Revise paragraphs (a)(1)(iii)(D), (a)(1)(iv)(C), (b)(1)(iv) and (vi), (b)(1)(xi) introductory text, (b)(1)(xi)(B), and (b)(1)(xiii);
 - h. Add paragraph (b)(1)(xiv);
 - i. Revise paragraphs (b)(2) introductory text and (b)(2)(viii) and (ix);
 - j. Remove and reserve paragraph (b)(2)(xv);
 - k. Revise paragraphs (b)(2)(xxxiv), (xxxvi), and (xlili);

- l. Add paragraphs (b)(2)(xliv) through (l);
- m. Revise paragraph (b)(3)(ii) introductory text;
- n. Remove and reserve paragraphs (b)(3)(iii)(B) and (C);
- o. Add paragraphs (b)(3)(vii) and (x);
- p. At the end of paragraph (d) introductory text, remove the colon and add in its place a period;
- q. In paragraph (g)(4)(ii), remove the date “June 3, 2020” wherever it appears and add its place “September 30, 2024”;
- r. Add paragraph (g)(6)(ii)(D)(9); and
- s. Revise paragraphs (g)(6)(ii)(F)(1) and (8).

The revisions and additions read as follows:

§ 50.55a Codes and standards.

- (a) * * *
- (1) * * *
- (i) * * *
- (E) * * *
- (20) 2019 Edition (including Subsection NCA; and Division 1 subsections NB through NG and Appendices); and
- (21) 2021 Edition (including Subsection NCA; and Division 1 subsections NB through NG and Appendices).
- (ii) * * *
- (C) * * *
- (56) 2019 Edition; and
- (57) 2021 Edition.
- (iii) * * *
- (D) ASME BPV Code Case N-770-7. ASME BPV Code Case N-770-7, “Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities Section XI, Division 1” (Approval Date: December 4, 2020), with the conditions in paragraph (g)(6)(ii)(F) of this section.
- * * * * *
- (iv) * * *
- (C) Operation and Maintenance of Nuclear Power Plants, “Division 1: OM Code: Section IST”:
- (1) 2012 Edition;
- (2) 2017 Edition;
- (3) 2020 Edition; and
- (4) 2022 Edition.
- * * * * *
- (b) * * *
- (1) * * *

(iv) *Section III condition: Quality Assurance.* When applying editions and addenda later than the 1989 Edition of Section III, an applicant or licensee may use the requirements of NQA-1, “Quality Assurance Requirements for Nuclear Facility Applications,” that is both incorporated by reference in paragraph (a)(1)(v) of this section and specified in either NCA-4000 or NCA-7000 of that Edition and Addenda of Section III, with the exceptions in paragraph (b)(1)(iv)(A) of this section, provided that the administrative, quality, and technical provisions contained in that Edition and Addenda of Section III are used in conjunction with the applicant’s or licensee’s appendix B to this part quality assurance program; and that the applicant’s or licensee’s Section III activities comply with those commitments contained in the applicant’s or licensee’s quality assurance program description. Where NQA-1 and Section III do not address the commitments contained in the applicant’s or licensee’s appendix B quality assurance program description, those licensee commitments must be applied to Section III activities.

(A) Subpart 2.19 in NQA-1-2017, NQA-1-2019, and NQA-1-2022 is not approved for use.

(B) [Reserved]

* * * * *

(vi) *Section III condition: Subsection NH.* The provisions in Subsection NH, “Class 1 Components in Elevated Temperature Service,” 1995 Addenda through all editions and addenda up to and including the 2013 Edition incorporated by reference in paragraph (a)(1) of this section, may only be used for the design and construction of Type 316 stainless steel pressurizer heater sheaths where service conditions do not cause the components to reach temperatures exceeding 900 °F. This condition is not applicable to the 2015 Edition and later editions.

* * * * *

(xi) *Section III condition: Mandatory Appendix XXVI.* When applying the 2015 and 2017 Editions of Section III, Mandatory Appendix XXVI, “Rules for Construction of Class 3 Buried Polyethylene Pressure Piping,” applicants or licensees must meet the first provision in paragraph (b)(1)(xi)(A)

of this section. When applying the 2015 through 2021 Editions of Section III, Mandatory Appendix XXVI, "Rules for Construction of Class 3 Buried Polyethylene Pressure Piping," applicants or licensees must meet the second provision in paragraph (b)(1)(xi)(B) of this section. When applying the 2017 Edition of Section III, Mandatory Appendix XXVI, "Rules for Construction of Class 3 Buried Polyethylene Pressure Piping," applicants or licensees must meet the third provision in paragraph (b)(1)(xi)(C) of this section.

* * * * *

(B) *Mandatory Appendix XXVI: Second provision.* When performing procedure qualification for high speed tensile impact testing of butt fusion joints in accordance with XXVI-2300 or XXVI-4330 of the 2015 through 2021 Editions of BPV Code Section III, breaks in the specimen that are away from the fusion zone require the test plot yield strength to be evaluated to confirm sound base material. If the base material failed (broke) at less than minimum required base material yield strength, a retest is required.

* * * * *

(xiii) *Section III condition: Preservice Inspection of Steam Generator Tubes.* Applicants or licensees applying the provisions of NB-5283 and NB-5360 in the 2019 Edition of Section III through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, must apply paragraphs (b)(1)(xiii)(A) and (B) of this section.

(A) *Preservice Inspection of Steam Generator Tubes: First provision.* When applying the provisions of NB-5283 in the 2019 Edition of Section III through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, a full-length preservice examination of 100 percent of the steam generator tubing in each newly installed steam generator must be performed prior to plant startup.

(B) *Preservice Inspection of Steam Generator Tubes: Second provision.* When applying the provisions of NB-5360 in the 2019 Edition of Section III through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, flaws revealed during preservice examination of steam generator tubing performed in accordance with paragraph (b)(1)(xiii)(A) of this section must be evaluated using the criteria in the design specifications.

(xiv) *Section III condition: Repairs to Stamped Components.* Applicants or licensees applying the provisions of

NCA-8151, NCA-8500 and Nonmandatory Appendix NN in the 2021 Edition of Section III, are required to meet all of the requirements in Nonmandatory Appendix NN.

(2) *Conditions on ASME BPV Code, Section XI.* As used in this section, references to Section XI refer to Section XI, Division 1, in the editions and addenda of the ASME BPV Code incorporated by reference in paragraph (a)(1)(ii) of this section, subject to the following conditions:

* * * * *

(viii) *Section XI condition: Concrete containment examinations.* Applicants or licensees applying Subsection IWL, 2001 Edition through the 2004 Edition, up to and including the 2006 Addenda, must apply paragraphs (b)(2)(viii)(E) through (G) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition up to and including the 2008 Addenda must apply paragraph (b)(2)(viii)(E) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition with the 2009 Addenda through the 2019 Edition, must apply paragraphs (b)(2)(viii)(H) and (I) of this section.

(ix) *Section XI condition: Metal containment examinations.* Applicants or licensees applying Subsection IWE, 2001 Edition up to and including the 2003 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B), (F) through (I), and (K) of this section. Applicants or licensees applying Subsection IWE, 2004 Edition, up to and including the 2005 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B), (F) through (H), and (K) of this section.

Applicants or licensees applying Subsection IWE, 2004 Edition with the 2006 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and (K) of this section. Applicants or licensees applying Subsection IWE, 2007 Edition through the 2015 Edition, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B), (J), and (K) of this section. Applicants or licensees applying Subsection IWE, 2017 Edition, through the 2019 Edition, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and (J) of this section. Applicants or licensees applying Subsection IWE, 2021 Edition, through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section must satisfy the requirements of paragraphs (b)(2)(ix)(B) and (J) of this section.

* * * * *

(xxxiv) *Section XI condition: Nonmandatory Appendix U.* (A) When using Nonmandatory Appendix U of the ASME BPV Code, Section XI, 2013 Edition through the 2019 Edition, the following conditions apply:

(1) The repair or replacement activities temporarily deferred under the provisions of Nonmandatory Appendix U must be performed during the next scheduled refueling outage.

(2) In lieu of the appendix referenced in paragraph U-S1-4.2.1(c) of Appendix U, an approved version of the ASME BPV Code Case N-513 must be used in accordance with NRC Regulatory Guide 1.147 at the time the case was incorporated into the licensee's program.

(B) Use of Nonmandatory Appendix U, Supplement U-S1 of the ASME BPV Code, Section XI, 2021 Edition is prohibited.

* * * * *

(xxxvi) *Section XI condition: Fracture toughness of irradiated materials.* When using the 2013 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section of the ASME BPV Code, Section XI, Appendix A paragraph A-4400, the licensee shall determine irradiated T₀ and the associated RT_{T0} as specified in the 2021 Edition of ASME BPV Code, Section III, NB-2331, subparagraph (a)(5).

* * * * *

(xlili) *Section XI condition: Regulatory Submittal Requirements.* Licenses shall submit to the NRC the analytical evaluation determining the effects of an out-of-limit condition on the structural integrity of the Reactor Coolant System, as described in IWB-3720(a).

(xliv) *Section XI condition: Nonmandatory Appendix Y.* When using Nonmandatory Appendix Y of the ASME BPV Code, Section XI, 2021 Edition, the following conditions apply:

(A) Use of Nonmandatory Appendix Y, Article Y-2200 is prohibited.

(B) Use of Nonmandatory Appendix Y, Subarticle Y-2440 is prohibited.

(C) Use of Nonmandatory Appendix Y, Article Y-3200 is prohibited.

(xlv) *Section XI condition: Pressure Testing of Containment Penetration Piping After Repair/Replacement Activities.* Applicants or licensees applying the provision of IWA-4540(a) and (e) of the 2021 Edition of the ASME Code, Section XI, are required to perform a VT-2 examination of the area affected by the repair/replacement activity during the Type C test in appendix J to this part.

(xlvi) *Section XI condition: Contracted Repair/Replacement*

Organization Fabricating Items Offsite of the Owner's Facility. When applicants or licensees apply the provision of IWA-4143 in the 2021 Edition of Section XI of the ASME Code, a contracted Repair/Replacement Organization fabricating ASME Code, Section III parts, appurtenances, piping subassemblies, and supports offsite of the Owner's facility (e.g., vendor facility) without an ASME Certificate of Authorization and without applying an ASME Stamp/Certification Mark is prohibited.

(xlvii) *Section XI condition: Weld Overlay Design Crack Growth Analysis.* Under Subparagraph Q-3000(a) stress corrosion crack growth analysis is required within the weld overlay material.

(xlviii) *Section XI condition: Analytical Evaluations of Degradation.* Applicants or licensees using the 2021 Edition of Section XI must submit analytical evaluations performed as required by IWB-3132.3 and IWC-3132.3 to the Nuclear Regulatory Commission.

(xlix) *Section XI condition: Analytical Evaluations of Flaws in Cladding.* The use of IWB-3600(b)(1) in the 2021 Edition of ASME BPV Code, Section XI (Division 1) is prohibited for the inlay and onlay that are subject to the augmented inspection requirements in paragraph (g)(6)(ii)(F) of this section.

(l) *Section XI condition: Determination of the Master Curve T₀.* When using the 2017 Edition of Section XI through the latest Edition incorporated by reference in this section and implementing Nonmandatory Appendix A, A-4200(c) and Nonmandatory Appendix G, G-2110(c), the licensee shall determine T₀ and the associated RT_{T0} as specified in the 2021 Edition of ASME BPV Code, Section III, NB-2331, subparagraph (a)(5).

(3) * * *
(ii) *OM condition: Motor-Operated Valve (MOV) testing.* Licensees must comply with the provisions for testing MOVs in ASME OM Code, ISTC 4.2, 1995 Edition with the 1996 and 1997 Addenda, or ISTC-3500, 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(iv) of this section, and must establish a program to ensure that MOVs continue to be capable of performing their design basis safety functions. Licensees implementing ASME OM Code, Mandatory Appendix III, "Preservice and Inservice Testing of Active Electric Motor-Operated Valve Assemblies in Water-Cooled Reactor Nuclear Power Plants," of the 2009 Edition, through the latest edition and addenda of the ASME OM Code

incorporated by reference in paragraph (a)(1)(iv) of this section shall comply with the following conditions (with the exception of conditions in paragraphs (b)(3)(ii)(A) through (C) of this section when implementing the 2022 Edition of the ASME OM Code):

* * * * *
(vii) *OM condition: Snubber visual examination interval extension.* When implementing Subsection ISTD, paragraph ISTD-4253, and Note 7 of Table ISTD-4252-1, in the 2022 Edition of the ASME OM Code, incorporated by reference in paragraph (a)(1)(iv) of this section, to extend snubber visual examination beyond 2 refueling cycles (48 months), the licensee is prohibited from applying OM Code Case OMN-15, Revision 2, to extend the operational readiness testing interval of snubbers.

* * * * *
(x) *OM condition: Class 1 Pressure Relief Valve Sample Expansion.* When implementing paragraph I-1320(c)(1) in Appendix I, "Inservice Testing of Pressure Relief Devices in Water-Cooled Reactor Nuclear Power Plants," of the editions and addenda of the ASME OM Code, incorporated by reference in paragraph (a)(1)(iv) of this section, the requirement for sample expansion of Class 1 Pressure Relief Valves shall be implemented such that for each valve tested for which the as-found set-pressure (first test actuation) exceeds the plus/minus tolerance limit of the Owner-established design set-pressure acceptance criteria of paragraph I-1310(e), two additional valves shall be tested from the same group. If the Owner has not established design set-pressure acceptance criteria, then for each valve tested for which the as-found set-pressure (first actuation) exceeds ±3 percent of valve nameplate set-pressure, two additional valves shall be tested from the same valve group.

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(g) * * *
(6) * * *
(ii) * * *
(D) * * *

(9) *Volumetric Qualifications.* Volumetric examinations of Table 1 of ASME Code Case N-729-6 may be qualified in accordance with Section XI, Division 1, Mandatory Appendix VIII, Supplement 15, in the 2021 Edition, in lieu of subparagraphs (a) through (j) of 2500 of ASME Code Case N-729-6.

* * * * *
(F) * * *
(1) *Implementation.* Holders of operating licenses or combined licenses for pressurized water reactors as of or after September 30, 2024, shall implement the requirements of ASME

BPV Code Case N-770-7 instead of ASME BPV Code Case N-770-5, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (16) of this section, by no later than one year after September 30, 2024. All NRC authorized alternatives from previous versions of paragraph (g)(6)(ii)(F) of this section remain applicable.

* * * * *
(8) *Optimized weld overlay examination.* Following initial inservice volumetric inspection for Inspection Items C-2 and F-2 of Table 1 of ASME Code Case N-770-7, for weld overlay examination volumes that show no indication of crack growth or new cracking, in lieu of sample population, 100 percent of these optimized weld overlaid welds shall be added to the ISI program in accordance with -2410 of ASME Code Case N-770-7 and shall be examined once each inspection interval.

* * * * *
Dated: August 7, 2024.
For the Nuclear Regulatory Commission.

Andrea Veil,
Director, Office of Nuclear Reactor Regulation.
[FR Doc. 2024-19235 Filed 8-29-24; 8:45 am]
BILLING CODE 7590-01-P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA-2024-2086; Airspace Docket No. 23-ANM-64]

RIN 2120-AA66

Amendment of United States Area Navigation (RNAV) Routes T-328 in the Vicinity of Deer Park, Washington

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action amends United States Area Navigation (RNAV) Routes T-328 by changing the name of the DAINA, WA, waypoint (WP) to the ZAGGS, WA, WP. The FAA is taking this action due to a similarly pronounced fix (DIANN) being located within five miles of the DAINA, WP. This action is an administrative change and does not affect the airspace boundaries or operating requirements.

DATES: Effective date 0901 UTC, October 31, 2024. The Director of the Federal Register approves this incorporation by reference action under 1 CFR part 51, subject to the annual revision of FAA