7590-01-P

NUCLEAR REGULATORY COMMISSIONG

10 CFR Part 50

[NRC-2018-0289]

RIN 3150-AK21

American Society of Mechanical Engineers 2021-2022 Code Editions

AGENCY: Nuclear Regulatory Commission.

ACTION: Proposed rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is proposing to amend 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: Submit comments by **[INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. Comments received after this date will be considered if it is practical to do so, but the NRC is able to ensure consideration only for comments received on or before this date.

ADDRESSES: You may submit comments by any of the following methods (unless this document describes a different method for submitting comments on a specific subject); however, the NRC encourages electronic comment submission through the **Federal rulemaking website**:

- **Federal rulemaking website:** Go to https://www.regulations.gov and search for Docket ID NRC-2018-0289. Address questions about NRC dockets to Dawn Forder; telephone: 301-415-3407; email: Dawn.Forder@nrc.gov. For technical questions contact the individuals listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.
- **Email comments to:** Rulemaking.Comments@nrc.gov. If you do not receive an automatic email reply confirming receipt, then contact us at 301-415-1677.
- **Fax comments to:** Secretary, U.S. Nuclear Regulatory Commission at 301-415-1101.
- **Mail comments to:** Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Rulemakings and Adjudications Staff.
- **Hand deliver comments to:** 11555 Rockville Pike, Rockville, Maryland 20852, between 7:30 a.m. and 4:15 p.m. (eastern time) Federal workdays; telephone: 301-415-1677.

For additional direction on obtaining information and submitting comments, see "Obtaining Information and Submitting Comments" in the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Tyler Hammock, Office of Nuclear Material Safety and Safeguards, telephone: 301-415-1381, email: Tyler.Hammock@nrc.gov and Michael Benson, Office of Nuclear Reactor Regulation, telephone: 301-415-2425, email: Michael.Benson@nrc.gov. Both are staff of the U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001.

SUPPLEMENTARY INFORMATION:

Executive Summary:

A. Need for the Regulatory Action

The NRC is proposing to amend 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 proposed rule is in accordance with the NRC's practice to incorporate those new editions into the NRC's regulations. This proposed 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 XIII of this document, "Voluntary Consensus Standards."

B. Major Provisions

Major provisions of this proposed 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 draft regulatory analysis to determine the expected costs

and benefits of this proposed rule. The regulatory analysis identifies costs and benefits in both a quantitative fashion as well as in a qualitative fashion.

The analysis concludes that this proposed rule would result in a net quantitative averted cost to the industry and a net cost to the NRC. This proposed rule, relative to the regulatory baseline, would result 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 proposed rule, relative to the regulatory baseline, would result 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 proposed regulatory action exceed the costs of the proposed 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 proposed 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 draft regulatory analysis (Accession No. ML23032A316 in the NRC’s Agencywide Documents Access and Management System (ADAMS)).

TABLE OF CONTENTS:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

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.

- **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**: You may examine and purchase copies of public documents, by appointment, at the NRC's PDR, Room P1 B35, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852. 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.

B. Submitting Comments

The NRC encourages electronic comment submission through the **Federal rulemaking website** (https://www.regulations.gov). Please include Docket ID NRC-2018-0289 in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at https://www.regulations.gov as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying

or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment into ADAMS.

II. Background

The American Society of Mechanical Engineers 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 years[2] (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

---

[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.

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 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 adoption 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 proposed 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 proposed 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 XIII of this document, “Voluntary Consensus Standards.”

III. Discussion

The NRC regulations incorporate by reference ASME Codes for nuclear power plants. This proposed 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 proposed 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 proposed 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 proposed 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 proposed 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 upon the conclusion of the rulemaking process.

The NRC is proposing to amend 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 proposed rule would revise § 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 (xliii). This proposed rule would revise § 50.55a(a)(1)(ii) to

incorporate by reference the 2021 Edition (Division 1) of the ASME BPV Code, Section XI. It would also clarify the wording and add, remove, or revise some of the conditions as explained in this proposed 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 proposed rule would revise § 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 an errata to their ASME Code of record. Each of the proposed NRC conditions and the reasons for each are discussed in the following sections of this document. The discussions are organized under the applicable ASME Code and Section.

The NRC prepared an unofficial redline strikeout version of the proposed changes to regulatory text that is intended to help the reader identify the proposed changes. The unofficial redline strikeout version of the proposed rule is publicly available and is listed in the “Availability of Documents” 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 proposes to revise § 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 proposed rule would revise 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.

Section 50.55a(b)(1)(iv) Section III condition: Quality assurance.

The NRC proposes to incorporate 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 recently proposed a draft regulatory guide (DG), DG-1403, “Quality Assurance Program Criteria (Design and Construction)” (ML22304A054) that would, among other things, endorse 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 27713). As described in the DG licensees and suppliers of basic components can take credit for the ILAC 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 proposed endorsement would be 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 DG-1403 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 proposing a condition to prohibit the use of Subpart 2.19 in NQA-1-2017.

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

The NRC proposes to revise 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 proposes to revise 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).

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

The NRC proposes to 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 2021 Edition of Section III was not updated to include the provisions of this condition. Therefore, the NRC is proposing to revise 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 proposing to add 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.” It should also be noted that the NRC only endorses Mandatory

Appendices of Section III to the ASME Code in the regulations (§ 50.55a).

Since this Nonmandatory Appendix is not required to be followed by the ASME Code, all or none of the requirements proposed in the 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. 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 Boiler and Pressure Vessel Code, Section XI.

The NRC proposes to amend 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 current § 50.55a(b)(2)(i) through (xliii).

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

The NRC proposes to revise 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 proposes not to apply 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 the 2021 Edition 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). These new Section XI provisions address the requirement in the existing NRC condition. Revisions to IWL-2512 require the technical evaluation discussed in IWL-2512(b) be completed every five years. This new Section XI provision addresses the requirement in existing NRC condition § 50.55a(b)(2)(viii)(I).

Section 50.55a(b)(2)(ix) Section XI condition: Metal containment examinations.

The NRC proposes not to apply the existing condition in § 50.55a(b)(2)(ix)(A)(2), the first provision for metal containment examinations, to the 2021 Edition of the ASME Code. Revisions to IWA6230 require the information described in the existing § 50.55a(b)(2)(ix) condition be included in the required OAR. This new Section XI provision addresses the requirement in the existing NRC condition.

Section 50.55a(b)(2)(xv) Section XI condition: Appendix VIII specimen set and qualification requirements.

The NRC proposes to eliminate this condition as it is no longer applicable to any licensee. This condition only applies 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

applies 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 proposes to amend §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 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 pose 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 proposed 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 Regulatory Guide (RG) 1.147 incorporated by reference in § 50.55a(a)(3)(ii).

The NRC proposes to modify the existing condition in § 50.55a(b)(2)(xxxiv) to update the version of ASME BPV Code Case N-513 to the latest version currently approved in RG 1.147. The NRC proposes to renumber this existing condition to § 50.55a(b)(2)(xxxiv)(A)(2) and revise § 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)(xliv) Section XI condition: Nonmandatory Appendix Y.

The NRC proposes to add § 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 position is that licensees 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 proposed 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 proposes to add § 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 examination 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 (visual examination during system walkdown) 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 (visual examination). 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 visual examination 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 (visual examination during walkdown). 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 (visual system walkdown) 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 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 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 proposes to add § 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 off-site 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 off-site of the Owner's facility. Therefore, a contracted Repair/Replacement Organization would be able to fabricate an item off-site (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 owner's contracted Repair/Replacement Organization (not possessing an ASME Certificate of Authorization) may occur only at the Owner's facility. The proposed condition would be 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 off-site 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 proposes to add § 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 proposes 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 proposes to add § 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 proposes to add § 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 proposes to add § 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 (g)(6)(ii)(F) of this section.

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 allow that a flaw, which lies entirely in the cladding of piping, need not

be analytically evaluated.

In comparison, paragraph (g)(6)(ii)(F) of this section addresses the augmented inspection requirements for Class 1 pressurized water reactor (PWR) piping and vessel nozzle butt welds. As part of the requirements, paragraph (g)(6)(ii)(F)(7) of this section 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 (g)(6)(ii)(F)(7) of this section, 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 (g)(6)(ii)(F)(7) of this section, 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 (g)(6)(ii)(F)(7) of this section 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 proposes to add 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 (g)(6)(ii)(F) of this section.

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

The NRC proposes to 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. The ASME Code 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 proposing 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 or later 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 proposed 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 proposes 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 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 proposes to update 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 one year

after June 3, 2020, to no later than one year after the rule effective date.

The NRC proposes to modify 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, "[i]nitial 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 overlayed 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 caries 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 Code Case N-770 in 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 proposing to update 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(a)(1)(iv), ASME Operation and Maintenance Code.

The NRC proposes to amend the regulations in § 50.55a(a)(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 proposed 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 proposes to modify § 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 proposes to revise § 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 proposes to reserve 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 proposes to revise § 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 proposes to reserve 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 proposes to add § 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 proposes to clarify 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 proposes to add § 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 proposes to clarify paragraph I-1320(c)(1) to be read 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 I-1310(e), or ±3 percent of valve nameplate set-pressure if the Owner has not established design set-pressure acceptance criteria, two additional valves shall be tested from the same valve group. The specification of 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 proposes to make 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.

IV. Specific Requests for Comments

In the 2021 Edition of the ASME Code, Section XI, ASME removed the IWB-3134 and IWC-3125 requirements for nuclear plant owners to submit analytical evaluations to the regulatory authority having jurisdiction at the plant site. The NRC proposes to condition the 2021 Edition of the ASME Code, Section XI to require that such evaluations be submitted to the NRC, maintaining the status quo for U.S. plants. The analytical evaluation reports provide the NRC with a tool to efficiently inspect and validate flaws identified by a licensee and the activities to address them (e.g., analysis for continued operation or repair/replacement). Furthermore, the reports provide the NRC with valuable operating experience data to monitor degradation trends across the industry to ensure public health and safety. There are other similar reporting requirements in § 50.55a, including § 50.55a(b)(2)(xxxii), § 50.55a(b)(2)(xliii), and § 50.55a(g)(6)(ii)(F)(6). The NRC is seeking advice and recommendations from the public on the proposed condition and the related requirements to ascertain their perceived

value. We are particularly interested in comments and supporting rationale from the public on the following:

(1) What alternative means are there for the NRC to accomplish the goal of monitoring degradation trends such that the NRC could remove the condition?

(2) How can the NRC effectively leverage the information provided in flaw evaluations and associated component degradation in a way that is transparent to stakeholders and ensures structural integrity of nuclear components without incurring excessive administrative burden for plant owners?

V. Section-by-Section Analysis

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

This proposed rule would revise 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 proposed rule would revise paragraphs (a)(1)(ii)*(C)(55) and (56)* and add new paragraph (a)(1)(ii)(C)*(57)* to include the 2021 Edition.

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

This proposed rule would revise 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 proposed rule would revise paragraph (a)(1)(iv)*(C)* to add the 2022 Edition of the ASME OM Code.

Paragraph (b)(1)(iv)

This proposed rule would revise and redesignate existing paragraph (b)(1)(iv) as paragraph (b)(1)(iv) introductory text, add new paragraphs (b)(1)(iv)(A) and (B), and remove and reserve paragraph (b)(1)(iv)(B).

Paragraph (b)(1)(vi)

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

Paragraph (b)(1)(xi)

This proposed rule would revise the introductory text to paragraph (b)(1)(xi) to clarify the applicable conditions and add two new conditions specific to polyethylene pressure piping when applying the 2015 through 2021 Editions. The proposed rule also would revise paragraph (b)(1)(xi)*(B)* to add the 2015 to 2021 Editions of BPV Code Section III.

Paragraph (b)(1)(xiii)

This proposed rule would revise 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 proposed rule would add new paragraph (b)(1)(xiv) to require that Nonmandatory Appendix NN be used in its entirety.

Paragraph (b)(2)

This proposed rule would revise the introductory text of paragraph (b)(2) to refer

the applicability to users of the editions incorporated by reference in paragraph (a)(1)(ii).

Paragraph (b)(2)(viii)

This proposed rule would revise 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 proposed rule would revise paragraph (b)(2)(ix) to update the applicability of paragraph (b)(2)(ix)(A)(2).

Paragraph (b)(2)(xv)

This proposed rule would eliminate this condition at paragraph (b)(2)(xv).

Paragraph (b)(2)(xxxiv)

This proposed rule would revise the introductory text to paragraph (b)(2)(xxxiv), leaving only the heading; revise paragraph (b)(2)(xxxiv)*(A)* and add new paragraphs (b)(2)(xxxiv)*(A)(1)* and *(B)(1)* to update the version of ASME BPV Code Case N-513 to the latest version currently approved in RG 1.147; and revise paragraph (b)(2)(xxxiv)*(B)* to prohibit the use of Nonmandatory Appendix U, Supplement U-S1 in the 2021 Edition of Section XI.

Paragraph (b)(2)(xliv)

This proposed rule would add new paragraph (b)(2)(xliv) to prohibit the use of Y-2200, Y-2440, and Y-3200 in the 2021 Edition of Section XI.

Paragraph (b)(2)(xlv)

This proposed rule would add 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 this part.

Paragraph (b)(2)(xlvi)

This proposed rule would add new paragraph (b)(2)(xlvi) to prohibit a contracted Repair/Replacement Organization without an ASME Certificate of Authorization that does not apply 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 proposed rule would add 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 proposed rule would add 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 proposed rule would add 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)(3)(ii)

This proposed rule would revise 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 proposed rule would revise 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 proposed rule would replace 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 proposed rule would create 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)*.

Paragraph (d)

This proposed rule would revise the introductory text of paragraph (d) by correcting an editorial error. The colon would be replaced with a period, at the end of the second sentence.

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

This proposed rule would add new paragraph (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.

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

This proposed rule would revise 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 to update the dates to conform with this proposed rule.

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

This proposed rule would modify 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. Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the NRC certifies that this rule, if adopted, will not have a significant economic impact on a substantial number of small entities. This proposed 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).

VII. Regulatory Analysis

The NRC has prepared a draft regulatory analysis on this proposed regulation.

The analysis examines the costs and benefits of the alternatives considered by the NRC. The NRC requests public comment on the draft regulatory analysis. The regulatory analysis is available as indicated in the “Availability of Documents” section of this document. Comments on the draft analysis may be submitted to the NRC as indicated under the ADDRESSES caption of this document.

VIII. 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 proposes to incorporate 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 57235)). 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: Proposed 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 proposed 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 proposed revision clarifies current requirements and is considered to be consistent with the meaning and intent of current requirements. The proposed condition does not constitute a new or changed NRC position. Therefore, this proposed 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 proposing to revise 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 proposed condition on Nonmandatory Appendix NN does not constitute a new or changed NRC position. Therefore, the addition of this proposed 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. These changes to § 50.55a(b)(2)(viii) remove conditions that were incorporated in the 2021 Edition. Therefore, this change 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 was incorporated into the 2021 Edition. Therefore, this change is not a backfit.

3. Remove and reserve § 50.55a(b)(2)(xv). This condition is 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. The revised condition is renumbered § 50.55a(b)(2)(xxxiv)(A)(2). There is no change to the requirements and therefore, this revision is 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. 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 proposed condition on Nonmandatory Appendix Y does not constitute a new or changed NRC position. Therefore, the addition of this proposed condition is not a backfit.

7. 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 proposed condition on IWA-4540(a) and (e) does not constitute a new or changed NRC position. Therefore, the addition of this proposed condition is not a backfit.

8. 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 proposed condition on IWA-4143 does not constitute a new or changed NRC position. Therefore, the addition of this proposed condition is not a backfit.

9. 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 proposed condition is not a backfit.

10. 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 proposed condition is not a backfit.

11. Add 10 CFR 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 proposed 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 proposed condition is not a backfit.

12. 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. No backfit is implied with the option to allow a new volumetric qualification option for licensees to utilize. No increase in requirements is expected.

13. 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 will require 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.

IX. 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 BPW 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 does, 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 proposed 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 proposed 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 proposed 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 kilopound per square inch (ksi)) 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.

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 31883). The NRC requests comment on this document with respect to the clarity and effectiveness of the language used.

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, if adopted, would not be a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required.

This proposed 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 proposed 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 off-site, and there is no significant increase in public radiation exposure. This proposed 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 will be no significant effect on the quality of the human environment from this action. Public stakeholders should note, however, that comments on any aspect of this environmental assessment may be submitted to the NRC as indicated under the ADDRESSEES caption.

XII. Paperwork Reduction Act Statement

This proposed 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 3150-0011.

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. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Pub. L. 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 proposed 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. The NRC invites comment on the applicability and use of other standards.

XIV. Public Meeting

The NRC will conduct a public meeting on the proposed rule for the purpose of describing the updates to the Code editions. The NRC staff will be available to answer questions from the public regarding this proposed rule.

The NRC will publish a notice of the location, time, and agenda of the meeting in the *Federal Register*, on Regulations.gov, and on the NRC's public meeting website within at least 10 calendar days before the meeting. Stakeholders should monitor the NRC's public meeting website for information about the public meeting at: https://www.nrc.gov/public-involve/public-meetings/index.cfm.

XV. Incorporation by Reference—Reasonable Availability to Interested Parties

The NRC proposes to incorporate by reference two recent editions to the ASME Codes 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 include in a proposed rule a discussion of the ways that the materials the agency proposes to incorporate by reference are reasonably available to interested parties or how it worked to make those materials reasonably available to interested parties. The discussion in this section complies with the

requirement for proposed rules as set forth in § 51.5(a)(1).

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-recognized[3] 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

[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, "interested parties" includes a broad set of stakeholders, including State-recognized Indian Tribes.

to gain access to the materials that the NRC proposes to 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 between 8:00 a.m. and 4:00 p.m. eastern time, Monday through Friday, except Federal holidays. In addition, as described in Section XV of this document, documents related to this proposed 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 IHS (15 Inverness Way East, Englewood, CO 80112; https://global.ihs.com) and Thomson Reuters Techstreet (3916 Ranchero Dr., Ann Arbor, MI 48108; 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 proposed rule, 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). Therefore, the two editions of the ASME Codes for nuclear power plants that the NRC proposes to incorporate by reference in this

rulemaking are available in 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 proposed rule. Therefore, the NRC concludes that the materials the NRC proposes to incorporate by reference in this proposed rule are reasonably available to all interested parties.

XVI. Availability of Documents

The NRC is making the documents identified in Table 1 available to interested persons through one or more of the following methods, as indicated. To access documents related to this action, see the ADDRESSES section of this document.

Table 1 – Availability of Documents

Document	ADAMS Accession No.
Proposed Rule Documents	
Rulemaking: Proposed Rule: Regulatory Analysis for American Society of Mechanical Engineers 2021-2022 Code Editions Update, July 2023	ML23032A316
Rulemaking: Proposed Rule: Unofficial Redline Strikeout of the NRC's Proposed Rule: RE: Proposed Rule to Incorporate by Reference American Society of Mechanical Engineers Codes, July 2023	ML23032A318
Related Documents	
Draft regulatory guide (DG), DG-1403, “Quality Assurance Program Criteria (Design and Construction),” April 2023	ML22304A054
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-1801, Revision 2, “Generic Aging Lessons Learned (GALL) Report,” December 2010	ML103490041
NUREG-1800, Revision 2, “Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants,” December 2010	ML103490036
NUREG-2191, “Generic Aging Lessons Learned for Subsequent	ML17187A031

License Renewal (GALL-SLR) Report," July 2017	ML17187A204
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-2192, "Standard Review Plan for Review of Subsequent License Renewal Applications for Nuclear Power Plants," July 2017	ML17188A158
Final Safety Evaluation Enclosure for NEI 14-05A, Rev. 1, November 23, 2020	ML20322A019
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	ML20135H229
ASME Codes, Standards, and Code Cases	
ASME BPV Code, Section III, Division 1: 2021 Edition	https://go.asme.org/NRC-ASME
ASME BPV Code, Section XI, Division 1: 2021 Edition	https://go.asme.org/NRC-ASME
ASME OM Code, Division 1: 2022 Edition	https://go.asme.org/NRC-ASME

Throughout the development of this rulemaking, the NRC may post documents related to this proposed rule, including public comments, on the Federal rulemaking website at https://www.regulations.gov under Docket ID NRC-2018-0289. The Federal rulemaking website allows members of the public to receive alerts when changes or additions occur in a docket folder. To subscribe take the following steps: 1) navigate to the docket folder (NRC-2018-0289); 2) click the "Subscribe" link; and 3) enter an email address and click on the "Subscribe" button.

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 forth 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. 553, the NRC proposes to adopt 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) and (a)(1)(iv)(C);

h. Revise paragraph (b)(1)(iv);

i. Revise paragraphs (b)(1)(vi), (b)(1)(xi) introductory text, (b)(1)(xi)(B), and (b)(1)(xiii);

j. Add paragraph (b)(1)(xiv);

k. Revise paragraphs (b)(2) introductory text, (b)(2)(viii), and (ix);

l. Remove and reserve paragraph (b)(2)(xv);

m. Revise paragraph (b)(2)(xxxiv);

n. Add paragraphs (b)(2)(xliv) through (xlix);

o. Revise paragraph (b)(3)(ii) introductory text;

p. Remove and reserve paragraphs (b)(3)(iii)(B) and (C);

q. Revise paragraphs (b)(3)(vii) and (x);

r. In the last sentence of the introductory text to paragraph (d), remove the text "conditions:" and add in its place the text "conditions.";

s. Add paragraph (g)(6)(ii)(D)(*9*); and

t. 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 must be retested. When performing fusing operator qualification bend tests of butt fusion joints in accordance with XXVI-4342, guided side bend testing must be used for all thicknesses greater than 1.25 inches.

* * * * *

(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) S*ection 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 schedule refueling outage.

(*2*) In lieu of the appendix referenced in paragraph U-S1-4.2.1(c) of Appendix U of the 2013 and the 2015 Editions, the mandatory appendix of the latest NRC approved version of the ASME BPV Code Case N-513 in NRC Regulatory Guide 1.147 must be used.

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

* * * * *

(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.

(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 (A), (B), and (C) 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), or ±3 percent of valve nameplate set-pressure if the Owner has not established design set-pressure acceptance criteria, two additional valves shall be tested from the same valve group.

* * * * *

(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 or later Editions, 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 **[DATE 30 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE *FEDERAL REGISTER*]**, 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 **[DATE 30 DAYS AFTER DATE OF PUBLICATION OF THE FINAL RULE IN THE *FEDERAL REGISTER*]**. 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 overlayed 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: July 18, 2023.

For the Nuclear Regulatory Commission.

Andrea D. Veil,
Director,
Office of Nuclear Reactor Regulation.

[FR Doc. 2023-16686 Filed: 8/7/2023 8:45 am; Publication Date: 8/8/2023]