NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

[NRC–2011–0088]

RIN 3150–AI97

Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases

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 seven recent editions and addenda to the American Society of Mechanical Engineers (ASME) codes for nuclear power plants and a standard for quality assurance. The NRC is also proposing to incorporate by reference four ASME code cases. This action is in accordance with the NRC's policy to periodically update the regulations to incorporate by reference new editions and addenda of the ASME codes and is intended to maintain the safety of nuclear power plants and to make NRC activities more effective and efficient.

DATES: Submit comments by December 2, 2015. 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):

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2011–0088. Address questions about NRC dockets to Carol Gallagher; telephone: 301–415–3463; email: *Carol.Gallagher@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: Daniel I. Doyle, Office of Nuclear Reactor Regulation, telephone: 301–415–3748, email: *Daniel.Doyle@nrc.gov;* or Keith Hoffman, Office of Nuclear Reactor Regulation, telephone: 301–415–1294, email: *Keith.Hoffman@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 seven recent editions and addenda to the ASME codes for nuclear power plants and an ASME standard for quality assurance. The NRC is also proposing to incorporate by reference four ASME code cases.

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. The ASME periodically revises and updates its codes for nuclear power plants by issuing new editions and addenda, and this rulemaking is in accordance with the NRC's policy to update the regulations to incorporate by reference those new editions and addenda. The incorporation by reference of the new editions and addenda will maintain the safety of nuclear power plants, make NRC activities more effective and efficient, and allow nuclear power plant licensees and applicants to take advantage of the latest 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. Additional discussion of voluntary consensus standards and the NRC's compliance with the National Technology Transfer and Advancement Act (NTTAA) is set forth in Section VIII of this notice, ''Voluntary Consensus Standards.''

B. Major Provisions

Major provisions of the proposed rule include:

- Incorporation by reference of ASME codes into NRC regulations and delineation of NRC requirements for the use of these codes (including conditions).
- Incorporation by reference of various versions of quality assurance standard NQA–1 into NRC regulations and approval for their use.
- Incorporation by reference and approval of four ASME Code Cases.

C. Costs and Benefits

The NRC prepared a draft regulatory analysis to determine the expected costs and benefits of the proposed rule. The regulatory analysis identified costs and benefits in a quantitative fashion as well as in a qualitative fashion.

The analysis concluded that the proposed rule would result in net quantitative costs to the industry and the NRC. The proposed rule, relative to the regulatory baseline, would result in a net cost for industry of between $5.1 million based on a 7 percent net present value and $4.3 million based on a 3 percent net present value. The estimated incremental industry cost per reactor unit ranges from $49,000 based on a 7 percent net present value to $41,000 based on a 3 percent net present value. The NRC benefits from the proposed rulemaking alternative because of the averted cost of not reviewing and approving Code alternative requests on a plant-specific basis under § 50.55a(z) of title 10 of the *Code of Federal Regulations* (10 CFR). The NRC net benefit ranges from $1.4 million based on a 7 percent net present value to $1.9 million based on a 3 percent net present value.

Qualitative factors which were considered include regulatory stability and predictability, regulatory efficiency, and consistency with the NTTAA Act of 1995, as amended. Table 44 in the draft regulatory analysis includes a discussion of the costs and benefits that were considered qualitatively. If the results of the regulatory analysis were based solely on quantified costs and benefits, then the regulatory analysis would show that the rulemaking is not justified because the total quantified benefits of the proposed regulatory action do not equal or exceed the costs of the proposed action. However, if the qualitative benefits (including the safety benefit, cost savings, and other non-quantified benefits) are considered together with the quantified benefits, then the benefits outweigh the identified quantitative and qualitative impacts.

With respect to regulatory stability and predictability, 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 10 CFR 50.55a through the rulemaking process of ''incorporation by reference.'' Retaining the practice of approving and/or mandating the ASME Codes continues the regulatory stability and predictability provided by the current practice. Retaining the practice also assures 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, these ASME Codes are voluntary consensus standards developed by participants with broad and varied interests and have already undergone extensive external review before being reviewed by the NRC. 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. ML14170B104 in the NRC's Agencywide Documents Access and Management System).

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I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC–2011–0088 when contacting the NRC about the availability of information for this proposed rule. You may obtain information related to this proposed rule by any of the following methods:

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2011–0088.
- *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly-available documents online in the ADAMS Public Documents collection at *http://www.nrc.gov/reading-rm/adams.html.* To begin the search, select *''ADAMS Public Documents''* and then 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, 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 at the NRC's PDR, Room O1–F21, One White Flint North, 11555 Rockville Pike, Rockville, Maryland 20852.

B. Submitting Comments

Please include Docket ID NRC–2011–0088 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 *http://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 ASME develops and publishes the ASME *Boiler and Pressure Vessel Code* (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 (*e.g.,* 2012, 2014, etc.). The new editions and addenda typically revise provisions of the 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 and addenda of the Codes do not significantly change Code philosophy or approach.

It has been the NRC's practice to establish requirements for the design, construction, operation, ISI (examination), and IST of nuclear power plants by approving the use of editions and addenda of the ASME BPV and OM Codes (ASME Codes) in § 50.55a. The NRC approves and/or mandates the use of certain parts of editions and addenda 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 and addenda of the ASME BPV and OM Codes were last incorporated by reference into the regulations in a final rule dated June 21, 2011 (76 FR 36232), subject to NRC conditions.

The ASME Codes are consensus standards developed by participants with broad and varied interests (including the NRC and licensees of nuclear power plants). The ASME's adoption of new editions of, and addenda to, 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 NRC representatives on the ASME Code committees and subcommittees, regarding the acceptability or desirability of a particular Code

[1] The editions and addenda of the ASME *Code for Operation and Maintenance of Nuclear Power Plants* have had different titles from 2005 to 2012 and are referred to collectively in this rule as the ''OM Code.''

provision included in an ASME-approved code edition or addenda. If the NRC believes that there is a significant technical or regulatory concern with a provision in an ASME-approved Code edition or addenda being considered for incorporation by reference, then the NRC conditions the use of that provision when it incorporates by reference that ASME Code edition or addenda. In some cases, 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 regulation. In a Staff Requirements Memorandum (SRM) dated September 10, 1999, 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 rulemaking, the provisions of the 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition of Section III, Division 1; and the 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition of Section XI, Division 1, of the ASME BPV Code; and the 2009 Edition, 2011 Addenda, and 2012 Edition of the ASME OM Code that the NRC is not adopting, or partially adopting, are identified in the Discussion, Regulatory Analysis, and Backfitting and Issue Finality sections of this notice. The provisions of those specific editions and addenda and Code Cases that are the subject of this rulemaking 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 notice.

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 NRC's compliance with the NTTAA is set forth in Section VIII of this notice, ''Voluntary Consensus Standards.''

This proposed rule contains changes from a November 5, 2014, NRC final rule amending § 50.55a to, among other things, re-designate paragraphs within § 50.55a (79 FR 65776). The re-designation of paragraphs was needed to address the Office of the Federal Register's requirements in 10 CFR part 51 applicable to incorporation by reference. For additional information on the November 2014 final rule, please consult the statement of considerations (preamble) for that final rule.

III. Discussion

The NRC regulations incorporate by reference ASME codes for nuclear power plants. The ASME periodically revises and updates its 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 rulemaking 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 and addenda to the Codes and the need for conditions on the uses of these Codes. This process was employed in the review of the Codes that are the subjects of this rule. First, the NRC staff 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 committee representatives discuss the Codes and technical justifications with other cognizant NRC staff to ensure an adequate technical review. Third, the NRC position on each Code is reviewed and approved by NRC management as part of the rule amending § 50.55a to incorporate by reference new editions and addenda 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, provides reasonable assurance that the NRC approves for use only those new and revised Code edition and addenda, with conditions as necessary, that provide reasonable assurance of adequate protection to 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 and addenda of the Codes identified in this rulemaking. The NRC concluded, in accordance with the process for review of changes to the Codes, that each of the editions and addenda of the Codes, and the 2008 Edition and the 2009–1a Addenda of NQA–1, are technically adequate, consistent with current NRC regulations, and approved for use with the specified conditions.

The NRC proposes to amend its regulations to incorporate by reference:

- The 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition to the ASME BPV Code, Section III, Division 1 and Section XI, Division 1, with conditions on their use.
- The 2009 Edition, the 2011 Addenda, and the 2012 Edition to Division 1 of the ASME OM Code, with conditions on their use.
- ASME Standard NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications,'' including several editions and addenda to NQA–1 from previous years with slightly varying titles as identified in proposed rule language § 50.55a(a)(1)(v). More specifically, the NRC proposes to incorporate by reference the 1983 Edition through the 1994 Edition, the 2008 Edition, and the 2009–1a Addenda to the 2008 Edition of ASME NQA–1, with conditions on their use.
- ASME BPV Code Case N–729–4, ''Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1,'' ASME approval date: June 22, 2012, with conditions on its use.
- ASME BPV Code Case N–770–2, ''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,'' ASME approval date: June 9, 2011, with conditions on its use.
- ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1,'' ASME approval date: October 16, 2012.
- ASME OM Code Case OMN–20, ''Inservice Test Frequency.''

The current regulations in § 50.55a(a)(1)(ii) incorporate by reference ASME BPV Code, Section XI, 1970 Edition through the 1976 Winter Addenda; and the 1977 Edition (Division 1) through the 2008 Addenda (Division 1), subject to the conditions identified in current § 50.55a(b)(2)(i) through (b)(2)(xxix). The proposed amendment would revise § 50.55a(a)(1)(ii) to incorporate by reference the 2009 Addenda (Division 1) through the 2013 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 notice.

The NRC proposes to revise § 50.55a(a)(1)(iv) to incorporate by reference the 2009 Edition, 2011 Addenda, and 2012 Edition of Division 1 of the ASME OM Code. Based on this revision, the NRC regulations would

incorporate by reference in § 50.55a the 1995 Edition through the 2012 Edition of the ASME OM Code.

Each of the proposed NRC conditions and the reasons for each proposed condition are discussed below. The discussions are organized under the applicable ASME Code and Section. Please note that there is not a separate heading for ASME quality assurance standard NQA–1 because there are three separate discussions of NQA–1—one under the heading for ASME BPV Code, Section III, one under the heading for ASME BPV Code, Section XI, and one under the heading for ASME OM Code—because there are three proposed conditions related to NQA–1, one in each of those areas (paragraph (b)(1)(iv) for Section III, paragraph (b)(2)(x) for Section XI, and paragraph (b)(3)(i) for the OM Code).

A. ASME BPV Code, Section III

10 CFR 50.55a(a)(1)(i) ASME Boiler and Pressure Vessel Code, Section III

The NRC proposes to clarify that Section III Nonmandatory Appendices are not incorporated by reference. This language was originally added in a final rule published on June 21, 2011 (76 FR 36232); however, it was omitted from the final rule published on November 5, 2014 (79 FR 65776). The NRC is correcting the omission by inserting ''(excluding Non-mandatory Appendices)'' in 10 CFR 50.55a(a)(1)(i).

10 CFR 50.55a(b)(1)(ii) Section III Condition: Weld Leg Dimensions

The NRC proposes to identify prohibited subparagraphs and footnotes for each BPV Code edition and addenda in tabular form as opposed to the textual listing of the current regulation. No substantive change to the requirements is intended by this revision. The NRC believes that presenting the information in tabular form will increase the clarity and understandability of the regulation.

Currently, § 50.55a(b)(1)(ii) includes a condition prohibiting the use of Footnote 11 from the 1989 Addenda through the 2003 Addenda or Footnote 13 from the 2004 Edition through the 2008 Addenda to Figures NC–3673.2(b)–1 and ND–3673.2(b)–1 for welds with leg sizes less than 1.09 t_n when using the ASME BPV Code, Section III, Division 1. These Code provisions provide stress indices for welded joints used in the design of Class 2 and Class 3 piping. The use of these indices is prohibited for welds with leg sizes less than 1.09 t_n, where t_n is the nominal pipe thickness. This is due to the fact that the current provisions would result in a weld that would be weaker than the pipe to which it is adjoined under these dimensions. The weld stress provisions in the version of the footnotes contained in the 1989 Addenda have been relocated to different subparagraphs in subsequent BPV Code editions and addenda. Therefore, the current Code's reference in Footnote 11 to Figures NC–3673.2(b)–1 and ND–3673.2(b)–1 is not correct for BPV Code editions and addenda after the 1989 Addenda, in applying the condition. The proposed rule would correct this issue by clearly identifying the prohibited code provisions in the editions and addenda in a tabular format.

As an editorial matter, this proposed rule identifies the prohibited BPV Code provisions as ''notes,'' which is the term used by the ASME, rather than ''footnotes.'' The NRC proposes to use the terminology used by the ASME for clarity.

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

The NRC proposes to approve for use the version of NQA–1 referenced in the 2010 Edition, 2011 Addenda, and 2013 Edition of the ASME BPV Code, Section III, Subsection NCA, Article 7000, which this rule is also incorporating by reference. This will allow applicants and licensees to use the 2008 Edition and the 2009–1a Addenda of NQA–1 when using the 2010 and later editions and addenda of Section III.

In the 2010 Edition of ASME BPV Code, Section III, Subsection NCA, Article NCA–4000, ''Quality Assurance,'' was updated to require N-Type Certificate Holders to comply with the requirements of Part 1 of the 2008 Edition and the 2009–1a Addenda of ASME Standard NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications,'' as modified and supplemented in NCA–4120(b) and NCA–4134. In addition, NCA–4110(b) was revised to remove the reference to a specific edition and addenda of ASME NQA–1, and Table NCA–7100–2, ''Standards and Specifications Referenced in Division 1,'' was updated to require the 2008 Edition and 2009–1a Addenda of NQA–1 when using the 2010 Edition of Section III.

The NRC reviewed the 2008 Edition and the 2009–1a Addenda of NQA–1 and compared it to previously approved versions of NQA–1 and found that there were no significant differences. In addition, the NRC reviewed the changes to Subsection NCA that reference the 2008 Edition and 2009–1a Addenda of NQA–1, compared them to previously approved versions of Subsection NCA, and found that there were no significant differences. Therefore, the NRC has concluded that these Editions and Addenda of NQA–1 are acceptable for use.

The NRC proposes to revise § 50.55a(b)(1)(iv) to clarify that an applicant's or licensee's commitments, addressing those areas where NQA–1 either does not address a requirement in appendix B to 10 CFR part 50, ''Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants,'' or is less stringent than the comparable appendix B requirement, governs the applicant's or licensee's Section III activities. The proposed clarification is consistent with § 50.55a(b)(2)(x) and § 50.55a(b)(3)(i). NQA–1 provides the ASME's method for establishing and implementing a quality assurance (QA) program for the design and construction of nuclear power plants and fuel reprocessing plants. However, NQA–1, as modified and supplemented in NCA–4120(b) and NCA–4134, does not address some of the requirements of appendix B to 10 CFR part 50. In some cases, the provisions of NQA–1 are less stringent than the comparable appendix B requirement. Thus, in order to meet the requirements of appendix B, an applicant's or licensee's QA program description must contain commitments addressing those provisions of appendix B which are not covered by NQA–1, as well as provisions that supplement or replace the NQA–1 provisions where the appendix B requirement is more stringent.

Finally, the NRC is considering removing the reference in § 50.55a(b)(1)(iv) to versions of NQA–1 older than the 1994 Edition. The NRC requests public comment on whether any applicant or licensee is committed to, and is using, a version of NQA–1 older than the 1994 Edition, and if so, what version the applicant or licensee is using.

10 CFR 50.55a(b)(1)(vii) Section III Condition: Capacity Certification and Demonstration of Function of Incompressible-Fluid Pressure-Relief Valves

The NRC proposes to revise § 50.55a(b)(1)(vii) so that the existing condition prohibiting the use of paragraph NB–7742(a)(2) of the 2006 Addenda through the 2007 Edition up to and including the 2008 Addenda is extended to include the editions and addenda up to the 2013 Edition which are the subject of this rulemaking.

10 CFR 50.55a(b)(1)(viii) Section III Condition: Use of ASME Certification Marks

The NRC is proposing to add new paragraph, § 50.55a(b)(1)(viii), to allow

licensees to use either the ASME BPV Code Symbol Stamps of editions and addenda earlier than the 2011 Addenda to the 2010 Edition of the ASME BPV Code or the ASME Certification Marks with the appropriate certification designators and class designators as specified in the 2013 Edition through the latest edition and addenda incorporated by reference in 10 CFR 50.55a.

The ASME BPV Code requires, in certain instances, that components be stamped. The stamp signifies that the component has been designed, fabricated, examined and tested, as specified in the ASME BPV Code. The stamp also signifies that the required ASME BPV Code data report forms have been completed, and the authorized inspector has inspected the item and authorized the application of the ASME BPV Code Symbol Stamp.

The ASME has instituted changes in the BPV Code to consolidate the different ASME BPV Code Symbol Stamps into a common ASME Certification Mark. This action was implemented in the 2011 Addenda to the 2010 Edition of the ASME BPV Code. As of the end of 2012, ASME no longer utilizes the ASME BPV Code Symbol Stamp. Licensees, however, may not have updated to the Edition or Addenda that identifies the use of the ASME Certification Mark. Nevertheless, licensees are legally required to implement the ASME BPV Code Edition and Addenda identified as their current code of record. As ASME components are procured, these components may be received with the ASME Certification Mark, while the licensee's current code of record may require the component to have the ASME BPV Code Symbol Stamp. Installation of a component under such circumstances would not be in compliance with the regulations that the licensees are required to meet.

Both the ASME Certification Mark and the ASME BPV Code Symbol Stamp are official ASME methods of certifying compliance with the Code. Although these ASME Certification Marks differ slightly in appearance, they serve the same purpose of certifying code compliance by the ASME Certificate Holder and continue to provide for the same level of quality assurance for the application of the ASME Certification Mark as was required for the application of the ASME BPV Code Symbol Stamp. The new ASME Certification Mark represents a small, non-safety significant modification of ASME's trademark. As such, it does not change the technical requirements of the Code. ASME has confirmed that the Certification Mark with designator is equivalent to the corresponding BPV Code Symbol Stamp. Based on statements by ASME in a letter dated August 17, 2012, the NRC has concluded that the ASME BPV Code Symbol Stamps and ASME Certification Mark with code-specific designators are equivalent with respect to their certification of compliance with the BPV Code. The NRC discussed this issue in Regulatory Issue Summary 2013–07, ''NRC Staff Position on the Use of American Society of Mechanical Engineers Certification Mark,'' dated May 28, 2013.

B. ASME BPV Code, Section XI

10 CFR 50.55a(a)(1)(ii) ASME Boiler and Pressure Vessel Code, Section XI

The NRC proposes to revise § 50.55a(a)(1)(ii) to clarify that Section XI Non-mandatory Appendix U of the 2013 Edition of ASME BPV Code Section XI is not incorporated by reference and therefore not approved for use. The NRC is developing an integrated approach to the issue of operational leakage. The NRC has not completed its determination of how Appendix U fits into this integrated approach to address the operational leakage issue at nuclear power plants. The operational leakage issue has many factors that need to be considered such as acceptance criteria, corrective actions, application of repair/replacement requirements, component operability determination, concerns related to continued operation, maximum acceptable leakage rates, flaw growth rates, flaw measurement techniques, schedules for eliminating leakage, and when or if the leakage requires authorization by the NRC. The NRC plans to complete the development of the regulatory approach to operational leakage and issue it in a future rulemaking.

10 CFR 50.55a(b)(2)(vi) Section XI Condition: Effective Edition and Addenda of Subsection IWE and Subsection IWL

The NRC proposes to revise § 50.55a(b)(2)(vi) to explicitly state that the provision requiring the use of either the 1992 Edition with the 1992 Addenda or the 1995 Edition with the 1996 Addenda of Subsection IWE and Subsection IWL when implementing the initial 120-month containment inservice inspection program applies only to those licensees that were required by previous versions [2] of § 50.55a to develop and implement a containment inservice inspection program in accordance with Subsection IWE and Subsection IWL, and complete an expedited examination of containment during the 5-year period from September 9, 1996, to September 9, 2001.

The expedited examination involved the completion of the first set of examinations of the first or initial 120-month containment inspection interval. It is noted that all the operating reactors in the above stated class would have gone past their initial 120-month inspection interval by 2011. The proposed change removes the possibility of misinterpretation of the provision as requiring plants that do not fall in the above class, such as reactors licensed after September 9, 2001, to use the 1992 Edition with 1992 Addenda or the 1995 Edition with 1996 Addenda of Subsection IWE and Subsection IWL, Section XI for implementing the initial 120-month inspection interval of the containment inservice inspection program. Applicants and licensees that do not fall in the above class must use Code editions and addenda in accordance with § 50.55a(g)(4)(i) and (g)(4)(ii), respectively, for the initial and successive 120-month containment inservice inspection intervals.

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

The NRC proposes to revise § 50.55a(b)(2)(viii) by removing the condition for using the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL requiring compliance with § 50.55a(b)(2)(viii)(E) and adding a requirement to comply with § 50.55a(b)(2)(viii)(H) and (I).

Section 50.55a(b)(2)(viii)(E) is one of several conditions that apply to the inservice examination of concrete containments using Subsection IWL of various editions and addenda of the ASME BPV Code, Section XI, incorporated by reference in § 50.55a(a)(1)(ii). The NRC proposes to remove the condition in § 50.55a(b)(2)(viii)(E) when applying the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL because its intent has been incorporated into the Code in the new provision IWL–2512, ''Inaccessible Areas.'' The reasons for requiring compliance with § 50.55a(b)(2)(viii)(H) and (I) are set forth in the next two sections.

[2] See the supplementary information and rule language for § 50.55a(b)(2)(vi), § 50.55a(g)(4), and § 50.55a(g)(6)(ii)(B) in **Federal Register** notices published on August 8, 1996 (61 FR 41303), and September 22, 1999 (64 FR 51370).

10 CFR 50.55a(b)(2)(viii)(H) Concrete Containment Examinations: Eighth Provision

The NRC proposes to add a new paragraph, § 50.55a(b)(2)(viii)(H), to specify the information that must be provided in the ISI Summary Report required by IWA–6000, when inaccessible concrete surfaces are evaluated under the new code provision IWL–2512. This new condition would replace the existing condition in § 50.55a(b)(2)(viii)(E) when using the 2007 Edition with the 2009 Addenda through the 2013 Edition of Subsection IWL.

The existing condition in § 50.55a(b)(2)(viii)(E) of the current rule requires that, for Class CC applications, the licensee shall evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or result in degradation to such inaccessible areas, and provide the evaluation information required by §§ 50.55a(b)(2)(viii)(E)(*1*), (E)(*2*), and (E)(*3*) in the IWA–6000 ISI Summary Report.

In the 2009 Addenda Subsection IWL, the ASME revised existing provisions IWL–1220 and IWL–2510 and added new provision IWL–2512 intended to incorporate the condition in § 50.55a(b)(2)(viii)(E) into Subsection IWL. The IWL–2510, ''Surface Examination,'' was restructured into new paragraphs IWL–2511, ''Accessible Areas,'' with almost the same provisions as the previous IWL–2510 and IWL–2512, ''Inaccessible Areas,'' to be specific to examinations required for accessible areas, and differentiate between those and the new requirements for inaccessible areas. The inaccessible areas addressed by the new IWL–2512 are: (1) Concrete surfaces obstructed by adjacent structures, parts or appurtenances (*e.g.,* generally above-grade inaccessible areas) and (2) concrete surfaces made inaccessible by foundation material or backfill (*e.g.,* below-grade inaccessible areas).

The revised IWL–2511(a) has a new requirement that states that, ''If the Responsible Engineer determines that observed suspect conditions indicate the presence of, or could result in, degradation of inaccessible areas, the requirements of IWL–2512(a) shall be met.'' The new IWL–2512(a) requires the ''Responsible Engineer'' to evaluate suspect conditions and specify the type and extent of examinations, if any, required to be performed on inaccessible surface areas described in the previous paragraph. The acceptability of the evaluated inaccessible area would be determined either based on the evaluation or based on the additional examinations, if determined to be required. The new IWL–2512(b) further requires a periodic technical evaluation of below-grade inaccessible areas of concrete to be performed to determine and manage its susceptibility to degradation regardless of whether suspect conditions exist in accessible areas that would warrant an evaluation of inaccessible areas based on the condition in § 50.55a(b)(2)(viii)(E). Therefore, the revised IWL–2511(a) and new IWL–2512 code provisions address the evaluation and acceptability of inaccessible areas consistent with the existing condition in § 50.55a(b)(2)(viii)(E), with one exception. The exception is that the new IWL–2512 provision does not explicitly require the information specified in §§ 50.55a(b)(2)(viii)(E)(*1*), (E)(*2*), and (E)(*3*) of the existing condition to be provided in the IWA–6000 ISI Summary Report.

For these reasons, the NRC proposes to identify the information that must be provided in the ISI Summary Report required by IWA–6000 when inaccessible concrete surfaces are evaluated under the new code provision IWL–2512. This new condition would replace the existing condition in § 50.55a(b)(2)(viii)(E) when using the 2007 Edition with the 2009 Addenda through the 2013 Edition of Subsection IWL. The information requested by the new condition must be provided when inaccessible concrete areas are evaluated per IWL–2512(a) for degradation based on suspect conditions found in accessible areas, as well as when periodic technical evaluations of inaccessible below-grade concrete areas required by IWL–2512(b) are performed.

10 CFR 50.55a(b)(2)(viii)(I) Concrete Containment Examinations: Ninth Provision

The NRC proposes to add § 50.55a(b)(2)(viii)(I) to place a condition on the periodic technical evaluation requirements in the new IWL–2512(b), for consistency with NUREG–1801, Revision 2, ''Generic Aging Lessons Learned (GALL) Report,'' with regard to aging management of below-grade containment concrete surfaces. The new IWL–2512(b) provision is applicable to inaccessible below-grade concrete surfaces exposed to foundation soil, backfill, or groundwater. This condition would apply only during the period of extended operation of a renewed license under 10 CFR part 54, when using IWL–2512(b) of the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL.

In the 2009 Addenda of Subsection IWL, the ASME added new code provisions, IWL–2512(b) and (c) as well as a new line item L1.13 in Table IWL–2500–1, intended to specifically address aging management concerns with potentially unidentified degradation of inaccessible below-grade containment concrete areas and to be responsive to actions outlined in the GALL Report related to aging management of inaccessible below-grade concrete surfaces. It is noted that these new code provisions are an enhancement to the requirement of the existing condition in § 50.55a(b)(2)(viii)(E) to specifically address aging management of inaccessible below-grade containment concrete areas and is generally acceptable to the NRC.

The new IWL–2512(b) provides requirements for systematically performing a periodic technical evaluation of concrete surfaces exposed to foundation soil, backfill, or groundwater to determine susceptibility of the concrete to deterioration that could affect its ability to perform its intended design function under conditions anticipated through the service life of the structure. It requires the technical evaluation to be performed and documented at periodic intervals not to exceed 10 years regardless of whether conditions exist in accessible areas that would warrant an evaluation of inaccessible areas by the existing condition in § 50.55a(b)(2)(viii)(E), which the NRC finds reasonable for the initial 40-year operating license period. The new IWL–2512(b) further provides the specific elements, including aging mechanisms considered, that the technical evaluation should include, as well as the definition of an aggressive below-grade environment. The new IWL–2512(c) requires that the evaluation results of IWL–2512(b) be used to define and document the condition monitoring program, if determined to be required, including required examinations and frequencies, to be implemented for the management of degradation and aging effects of the below-grade concrete surface areas. If it is determined that additional examinations are required, these examinations of inaccessible below-grade areas will be implemented in accordance with new line item L1.13 in Table IWL–2500–1 under Examination Category L–A, Concrete, with acceptance criteria based on IWL–3210. It should be noted that a technical evaluation approach, such as in IWL–2512(b), could be used, and is generally used, to determine acceptability of a

below-grade inaccessible area to satisfy the condition in § 50.55a(b)(2)(viii)(E).

The technical evaluation requirements in IWL–2512(b) help to determine the susceptibility to degradation and manage aging effects of inaccessible below-grade concrete surfaces, before the loss of intended function. The requirements are based on, and are generally consistent with, the guidance in the GALL Report,'' with the following two exceptions. The first exception is that IWL–2512(b) requires the technical evaluation to determine the susceptibility of the concrete to degradation and the ability to perform the intended design function through its service life at periodic intervals not to exceed 10 years. The aging management programs (AMPs) for safety-related structures (*e.g.,* Structures Monitoring) in the GALL Report require such evaluation to be performed at intervals not to exceed 5 years, which is also consistent with applicant commitments during review of license renewal applications. The second exception is that IWL–2512(b) requires that examination of representative samples of below-grade concrete be performed if excavated for any reason when an aggressive below-grade environment is present. However, the AMPs (X1.S6 Structures Monitoring and X1.S7 Water Control Structures) in the GALL Report require the same examination even for a non-aggressive below-grade environment.

Based on these reasons, the NRC proposes to add a new § 50.55a(b)(2)(viii)(I) to place a condition on the periodic technical evaluation requirements in IWL–2512(b) for consistency with the GALL Report, with regard to aging management of inaccessible below-grade concrete components of the containment. The new IWL–2512(b) is applicable to inaccessible below-grade concrete surfaces of the containment cylindrical wall and basemat foundations, which are exposed to foundation soil, backfill, or groundwater. The new condition requires that, during the period of extended operation of a renewed license, the technical evaluation under IWL–2512(b) of inaccessible below-grade concrete surfaces exposed to foundation soil, backfill, or groundwater be performed at periodic intervals not to exceed 5 years. Also, the condition requires the examination of representative samples of the exposed portions of the below-grade concrete be performed when excavated for any reason. Since the GALL Report is the technical basis document for license renewal, this new condition applies only during the period of extended operation of a renewed license under 10 CFR part 54, when using IWL–2512(b) of the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL, Section XI.

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

The NRC proposes to continue to apply the existing conditions in §§ 50.55a(b)(2)(ix)(A)(*2*), (b)(2)(ix)(B), and (b)(2)(ix)(J) governing examinations of metal containments and the liners of concrete containments under Subsection IWE to the 2007 Edition with 2009 Addenda through the 2013 Edition (the code editions and addenda which are the subject of this rulemaking). The NRC reviewed the code changes in Subsection IWE of the 2009 Addenda through the 2013 Edition of ASME BPV Code, Section XI, and notes that all of the changes were editorial or administrative with the intent to improve the clarity of the existing requirements or correct errors by errata. There were no changes to Subsection IWE in the code editions and addenda that are the subject of this rulemaking that the NRC believes would require new regulatory conditions to ensure safety, nor do the changes to Subsection IWE address the NRC's reasons for adopting the conditions on the use of Subsection IWE. Although this continuation of the applicability of the three conditions does not require a rule change, the NRC is discussing this for the benefit of stakeholder understanding of the effect of the proposed rule.

10 CFR 50.55a(b)(2)(x) Section XI Condition: Quality Assurance

The NRC proposes to approve for use the version of NQA–1 referenced in the 2009 Addenda, 2010 Edition, 2011 Addenda, and the 2013 Edition of the ASME BPV Code, Section XI, Table IWA 1600–1, ''Referenced Standards and Specifications,'' which this rule is also incorporating by reference. This will allow licensees to use the 1994 or the 2008 Edition and the 2009–1a Addenda of NQA–1 when using the 2009 Addenda and later editions and addenda of Section XI.

In the 2013 Edition of ASME BPV Code, Section XI, Table IWA 1600–1 was updated to allow licensees to use the 1994 or the 2008 Edition with the 2009–1a Addenda of NQA–1 when using the 2013 Edition of Section XI. In the 2010 Edition of ASME BPV Code, Section XI, IWA–1400, ''Owner's Responsibilities,'' subparagraph (n)(2) was updated to reference the NQA–1 Part I, Basic Requirements and Supplementary Requirements for Nuclear Facilities. In the 2009 Addenda of the 2007 Edition of ASME BPV Code, Section XI, Table IWA–1600–1, ''Referenced Standards and Specifications,'' was updated to allow licensees to use the 1994 Edition of NQA–1. The NRC reviewed the 2008 Edition and the 2009–1a Addenda of NQA–1 and compared it to previously approved versions of NQA–1 and found that there were no significant differences. Therefore, the NRC has concluded that these Editions and Addenda of NQA–1 are acceptable for use.

The NRC proposes to amend § 50.55a(b)(2)(x) to clarify that a licensee's commitments addressing those areas where NQA–1 either does not address an appendix B requirement or is less stringent than the comparable appendix B requirement governs the licensee's Section XI activities. The proposed clarification is consistent with §§ 50.55a(b)(1)(iv) and (b)(3)(i). The ASME's method for establishing and implementing a QA program for the design and construction of nuclear power plants and fuel reprocessing plants is described in NQA–1. However, NQA–1 does not address some of the requirements of appendix B to 10 CFR part 50. In some cases, the provisions of NQA–1 are less stringent than the comparable appendix B requirement. Thus, in order to meet the requirements of appendix B, a licensee's QA program description must contain commitments addressing those provisions of appendix B which are not covered by NQA–1, as well as provisions that supplement or replace the NQA–1 provisions where the appendix B requirement is more stringent.

Finally, the NRC is considering removing the reference in § 50.55a(b)(2)(x) to versions of NQA–1 older than the 1994 Edition. The NRC requests public comment on whether any licensee is committed to, and is using, a version of NQA–1 older than the 1994 Edition, and if so, what version the applicant or licensee is using.

10 CFR 50.55a(b)(2)(xviii)(D) NDE Personnel Certification: Fourth Provision

The NRC proposes to add a new paragraph, § 50.55a(b)(2)(xviii)(D), to prohibit applicants and licensees from using the ultrasonic examination nondestructive examination (NDE) personnel certification requirements in Section XI, Appendix VII and subarticle VIII–2200 of the 2011 Addenda and 2013 Edition of the ASME BPV Code. Section 50.55a(b)(2)(xviii) currently includes conditions on the certification

of NDE personnel. In addition, the new paragraph would require applicants and licensees to use the 2010 Edition, Table VII–4110–1 training hour requirements for Levels I, II, and III ultrasonic examination personnel, and the 2010 Edition, subarticle VIII–2200 of Appendix VIII prerequisites for personnel requirements. In the 2011 Addenda and 2013 Edition, the ASME BPV Code added an accelerated Appendix VII training process for certification of ultrasonic examination personnel based on training and prior experience, and separated the Appendix VII training requirements from the Appendix VIII qualification requirements. These new ASME BPV Code provisions would provide personnel in training with less experience and exposure to representative flaws in representative materials and configurations common to operating nuclear power plants, and they would permit personnel with prior non-nuclear ultrasonic examination experience to qualify for examinations in nuclear power plants without exposure to the variety of defects, examination conditions, components, and regulations common to operating nuclear power plants.

The impact of reduced training and nuclear power plant familiarization is unknown. The ASME BPV Code supplants training hours and field experience without a technical basis, minimum defined training criteria, process details, or standardization. For these reasons, the NRC is proposing to prohibit the use of Appendix VII and VIII–2200 in the 2011 Addenda and 2013 Edition, and instead require applicants and licensees using the 2011 Addenda and 2013 Edition to use Table VII–4110–1 in the 2010 Edition, and VIII–2200, Appendix VIII prerequisites for ultrasonic examination personnel requirements in the 2010 Edition.

10 CFR 50.55a(b)(2)(xxi)(A) Table IWB–2500–1 Examination Requirements: First Provision

The NRC proposes to revise § 50.55a(b)(2)(xxi)(A) to modify the standard for visual magnification resolution sensitivity and contrast for visual examinations performed on Examination Category B–D components instead of ultrasonic examinations, making the rule conform with ASME BPV Code, Section XI requirements for VT–1 examinations. The character recognition rules are used in ASME BPV Code, Section XI, Table IWA–2211–1 for VT–1 tests, and are the standard tests used for resolution and contrast checks of VT–1 equipment. This revision essentially removes a requirement that was in addition to ASME BPV Code that required 1-mil wires to be used in licensees' Sensitivity, Resolution and Contrast Standard targets. In 2004, the NRC published NUREG/CR–6860, ''An Assessment of Visual Testing,'' showing that a linear target, such as a wire, is not an effective method for testing the resolution of a video camera system. In addition, BWRVIP–03 was changed to eliminate a ½ mil wire from the Sensitivity Resolution and Contrast Standards due to similar concerns.

Simple line detection can be a poor performance standard, allowing detection of a highly blurred image. This does not emulate sharpness quality recognition for evaluation of weld discontinuities. The 750 μm (30 mil) and the even smaller 25 μm (1 mil) widths should not be used as performance standards because they do not determine image sharpness. This technique only measures the ''visible minimum'' for long linear indications, and does not measure a system's resolution or recognition limits. If the wire, or printed line, has a strong enough contrast against the background, then a linear feature well below the resolution of a system can be detected.

10 CFR 50.55a(b)(2)(xxx) Section XI Condition: Steam Generator Preservice Examinations

The NRC proposes to add § 50.55a(b)(2)(xxx) to require a full length examination of 100 percent of the tubing in each newly installed steam generator prior to plant startup. This requirement would be instead of the unapproved provisions in IWB–2200(c) pertaining to steam generator tube preservice inspections (PSI).

Steam generator tubes, a significant portion of the reactor coolant pressure boundary, are important to the safe operation of a pressurized water reactor. As such, the NRC has established requirements pertaining to the design, fabrication, erection, testing, and inspection of the steam generator tubes. With respect to the performance of the PSI of steam generator tubes, the NRC has indicated in NRC Regulatory Guide (RG) 1.83, Revision 1, ''Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes,'' (withdrawn in 2009) that all tubes in the steam generator should be inspected by eddy current or alternative technique prior to service to establish a baseline condition of the tubing. A similar position is articulated in NUREG–0800, Standard Review Plan (SRP) Section 5.4.2.2, ''Steam Generator Tube Inservice Inspection,'' Revision 1 and subsequent revisions. A PSI is important since it ensures that the steam generator tubes are acceptable for initial operation. In addition, the PSI provides the baseline condition of the tubes. This data is essential in assessing the nature of indications found in the tubes during subsequent inservice inspections.

Preservice requirements for ASME Class 1 components are provided in IWB–2200, and IWB–2200(c) currently states, ''Steam generator tube examination shall be governed by the plant Technical Specifications (TS).'' However, there are no preservice examination requirements for steam generators defined in plant TS. Preservice examination requirements for steam generators are not within any of the categories described in 50.36 for the content of TS. Because IWB–2200(c) requires the steam generator tube examinations be performed in accordance with plant TS, and TS contain no rules for PSI of steam generator tubing, the NRC is clarifying the preservice inspection requirements for steam generator tubes.

The proposed clarification is consistent with industry guidelines and the NRC staff position outlined in SRP Section 5.4.2.2, ''Steam Generator Program.'' The proposed requirement supersedes the requirements of IWB–2200(c). These inspections must be performed with the objective of finding and characterizing the types of preservice flaws that may be present in the tubes and flaws that may occur during operation.

10 CFR 50.55a(b)(2)(xxxi) Section XI Condition: Mechanical Clamping Devices

The NRC proposes to add § 50.55a(b)(2)(xxxi) to prohibit the use of mechanical clamping devices on Class 1 piping and portions of piping systems that form the containment boundary. In the 2010 Edition of the ASME BPV Code, a change was made to include mechanical clamping devices under the small items exclusion rules of IWA–4131. Currently in the 2007 Edition/2008 Addenda of Section XI under IWA–4133, ''Mechanical Clamping Devices Used as Piping Pressure Boundary,'' mechanical clamping devices may be used only if they meet the requirements of Mandatory Appendix IX of Section XI of the ASME BPV Code. Article IX–1000 (c) of Appendix IX prohibits the use of mechanical clamping devices on (1) Class 1 piping and (2) portions of a piping system that form the containment boundary.

In the 2010 Edition, IWA–4133 was modified to allow use of IWA–4131.1(c) for the installation of mechanical clamping devices. This change allowed

the use of small items exemption rules in the installation of mechanical clamps. Subparagraph IWA–4131.1(c) was added such that mechanical clamping devices installed on items classified as ''small items'' under IWA–4131, including Class 1 piping and portions of a piping system that form the containment boundary, would be allowed without a repair/replacement plan, pressure testing, services of an Authorized Inspection Agency, and completion of NIS–2 form.

The NRC, in accordance with the previously approved IWA–4133 of the 2007 Edition/2008 Addenda of the ASME BPV Code, does not believe that the ASME has provided a sufficient technical basis to support the use of mechanical clamps on Class 1 piping or portions of a piping system that form the containment boundary as a permanent repair. Furthermore, the NRC does not believe that the ASME has provided any basis for the small item exemption allowing the installation of mechanical clamps on these components. In the 2011 Addenda of the ASME BPV Code, IWA–4131.1(c) was relocated to IWA–4131.1(d).

10 CFR 50.55a(b)(2)(xxxii) Section XI Condition: Summary Report Submittal

The NRC proposes to add § 50.55a(b)(2)(xxxii) to require licensees using the 2010 Edition and later editions and addenda of Section XI to continue to submit Summary Reports as required in IWA–6240 of the 2009 Addenda.

Prior to the 2010 Edition, Section XI required the preservice summary report to be submitted prior to the date of placement of the unit into commercial service, and the inservice summary report to be submitted within 90 calendar days of the completion of each refueling outage. In the 2010 Edition, IWA–6240 was revised to state, ''Summary Reports shall be submitted to the enforcement and regulatory authorities having jurisdiction at the plant site, if required by these authorities.'' This change in the 2010 Edition could lead to confusion as to whether or not the summary reports need to be submitted to the NRC, as well as the time for submitting the reports if they were required. The NRC believes that summary reports must continue to be submitted to the NRC in a timely manner because they provide valuable information regarding examinations performed, conditions noted, corrective actions taken, and the implementation status of PSI and ISI programs. Therefore, the NRC proposes adding § 50.55a(b)(2)(xxxii) to ensure that preservice and inservice summary reports will continue to be submitted within the timeframes currently established in Section XI editions and addenda prior to the 2010 Edition.

10 CFR 50.55a(b)(2)(xxxiii) Section XI Condition: Risk-Informed Allowable Pressure

The NRC proposes to add § 50.55a(b)(2)(xxxiii) to prohibit the use of Appendix G Paragraph G–2216 in the 2011 Addenda and later editions and addenda of the ASME BPV Code, Section XI. The 2011 Addenda of the ASME BPV Code included, for the first time, a risk-informed methodology to compute allowable pressure as a function of inlet temperature for reactor heat-up and cool-down at rates not to exceed 100 degrees F/hr (56 degrees C/hr). This methodology was developed based upon probabilistic fracture mechanics (PFM) evaluations that investigated the likelihood of reactor pressure vessel (RPV) failure based on specific heat-up and cool-down scenarios.

During the ASME's consideration of this change, the NRC staff noted that additional requirements would need to be placed on the use of this alternative. For example, the NRC staff indicated that it would be important for a licensee who wishes to utilize such a risk-informed methodology for determining plant-specific pressure-temperature limits to ensure that the material condition of its facility is consistent with assumptions made in the PFM evaluations that supported the development of the methodology. One aspect of this would be evaluating plant-specific inservice inspection data to determine whether the facility's RPV flaw distribution was consistent with the flaw distribution assumed in the supporting PFM evaluations. This consideration is consistent with a similar requirement established by the NRC in § 50.61a, ''Alternative Fracture Toughness Requirements for Protection against Pressurized Thermal Shock Events.'' The PFM methodology that supports § 50.61a is very similar that which was used to support ASME BPV Code, Section XI, Appendix G, Paragraph G–2216. These concerns with the Paragraph G–2216 methodology for computing allowable pressure as a function of inlet temperature for reactor heat-up and cooldown were not addressed by the ASME. Accordingly, the NRC is proposing to prohibit the use of Paragraph G–2216 in Appendix G of the 2010 Edition. The continued use of the deterministic methodology of Section XI, Appendix G to generate P–T limits remains acceptable.

10 CFR 50.55a(b)(2)(xxxiv) Section XI Condition: Disposition of Flaws in Class 3 Components

The NRC proposes to add § 50.55a(b)(2)(xxxiv) to require that when using the 2013 Edition of the ASME BPV Code, Section XI, the licensee shall use the acceptance standards of IWD–3510 for the disposition of flaws in Category D–A components (*i.e.,* welded attachments for vessels, piping, pumps, and valves).

The 2013 Edition of the ASME BPV Code, Section XI, IWD–3510, ''Standards for Examination Category D–A, Welded Attachments for Vessels, Piping, Pumps, and Valves,'' states that the acceptance standards are: ''In the course of preparation, the requirements of IWC–3500 may be used.'' The ASME BPV Code, Section XI, IWD–3410, ''Acceptance Standards,'' states that the acceptance standards referenced in Table IWD–3410–1 shall be applied to determine acceptability for service. Table IWD–3410–1 states that the acceptance standard for Examination Category D–A is IWB–3510.

A discrepancy exists between the provisions in IWD–3410, which references Table IWD–3410–1, and the provisions in IWD–3510. The provisions in IWD–3510 require the use of the acceptance standards of IWC–3500 whereas Table IWD–3410–1 requires the use of the acceptance standards of IWB–3510 to disposition flaws detected in the Examination Category D–A components. Both IWD–3410 and IWD–3510 should reference the same subarticle and acceptance standards. The NRC believes that this discrepancy is due to an error in the publishing of the 2013 Edition because the code committee action which proposed the revised Class 3 acceptance criteria and added Table IWD–3410–1 showed the appropriate Acceptance Standard to be IWD–3510. The intent of the condition is to provide clarification and consistency in requirements between IWD–3410 and IWD–3510.

10 CFR 50.55a(b)(2)(xxxv) Section XI Condition: Use of RT_{T0} in the K_{Ia} and K_{Ic} Equations

The NRC proposes to add § 50.55a(b)(2)(xxxv) to specify that when licensees use the 2013 Edition of the ASME BPV Code, Section XI, Appendix A, paragraph A–4200, if T_0 is available, then RT_{T0} may be used in place of RT_{NDT} for applications using the K_{Ic} equation and the associated K_{Ic} curve, but not for applications using the K_{Ia} equation and the associated K_{Ia} curve.

Non-mandatory Appendix A provides a procedure based on linear elastic

fracture mechanics (LEFM) for determining the acceptability of flaws that have been detected during inservice inspections that exceed the allowable flaw indication standards of IWB–3500. Sub-article A–4200 provides a procedure for determining fracture toughness of the material used in the LEFM analysis. The NRC staff's concern is related to the proposed insertion regarding an alternative based on Master Curve methodology to determine the nil-ductility transition reference temperature RT_{NDT}, which is an important parameter in determining the fracture toughness of the material. Specifically, the insertion proposed to use Master Curve reference temperature RT_{T0}, which is defined as $RT_{T0} = T_0 + 35$ °F, where T_0 is a material-specific temperature value determined in accordance with ASTM E1921, ''Standard Test Method for Determination of Reference Temperature, T_0, for Ferritic Steels in the Transition Range,'' to index (shift) the fracture toughness K_{Ic} curve, based on the lower bound of static initiation critical stress intensity factor, as well as the K_{Ia} curve, based on the lower bound of crack arrest critical stress intensity factor.

While use of RT_{T0} to index the K_{Ic} curve is acceptable, using RT_{T0} to index the K_{Ia} curve is questionable. This NRC staff concern is based on the data analysis in ''A Physics-Based Model for the Crack Arrest Toughness of Ferritic Steels,'' written by NRC staff member Mark Kirk, and published in ''Fatigue and Fracture Mechanics, 33rd Volume, ASTM STP 1417,'' which indicated that the crack arrest data does not support using RT_{T0} as RT_{NDT} to index the K_{Ia} curve. This is also confirmed by industry data disclosed in a presentation, ''Final Results from the CARINA Project on Crack Initiation and Arrest of Irradiated German RPV Steels for Neutron Fluences in the Upper Bound,'' by AREVA at the 26th Symposium on Effects of Radiation on Nuclear Materials (June 12–13, 2013, Indianapolis, IN, USA). The NRC staff recognized that the proposed insertion is consistent with Code Case N–629, ''Use of Fracture Toughness Test Data to Establish Reference Temperature for Pressure Retaining Materials,'' which was accepted by the NRC without conditions. In addition to the current NRC effort, the appropriate ASME Code committee is in the process of correcting this issue in a future revision of Appendix A of Section XI.

With this condition, users of Appendix A can avoid using an erroneous fracture toughness K_{Ia} value in their LEFM analysis for determining the acceptability of a detected flaw in applicable components. Therefore, the NRC is proposing to add a condition which permits the use of RT_{T0} in place of RT_{NDT} in applications using the K_{Ic} equation and the associated K_{Ic} curve, but does not permit the use of RT_{T0} in place of RT_{NDT} in applications using the K_{Ia} equation and the associated K_{Ia} curve.

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

The NRC proposes to add § 50.55a(b)(2)(xxxvi) to require licensees using ASME BPV Code, Section XI, 2013 Edition, Appendix A, paragraph A–4400, to obtain NRC approval before using irradiated T_0 and the associated RT_{T0} in establishing fracture toughness of irradiated materials.

Sub-article A–4400 provides guidance for considering irradiation effects on materials. The NRC staff's concern is related to use of RT_{T0} based on measured T_0 of the irradiated materials. Specifically, the NRC staff has concerns over this sentence in the proposed insertion: ''Measurement of RT_{T0} of unirradiated or irradiated materials as defined in A–4200(b) is permitted, including use of the procedures given in ASTM E1921 to obtain direct measurement of irradiated T_0.''

Permission of measurement of RT_{T0} of irradiated materials, without providing guidelines regarding how to use the measured parameter in determining the fracture toughness of the irradiated materials, may mislead the users of Appendix A into adopting methodology not accepted by the NRC. With this condition, users of Appendix A can avoid using a fracture toughness K_{Ic} value based on the irradiated T_0 and the associated RT_{T0} in their LEFM analysis for determining the acceptability of a detected flaw in applicable components.

10 CFR 50.55a(g) Inservice and Preservice Inspection Requirements

The NRC proposes to add new paragraphs (g)(2)(i), (g)(2)(ii), and (g)(2)(iii) and to revise paragraphs (g), (g)(2), (g)(3), (g)(3)(i), (g)(3)(ii), and (g)(3)(v) to distinguish the requirements for accessibility and preservice examination from those for inservice inspection in § 50.55a(g). No substantive change to the requirements is intended by these revisions.

C. ASME OM Code

10 CFR 50.55a(b)(3) Conditions on ASME OM Code

The NRC proposes to revise § 50.55a(b)(3) to clarify that Subsections ISTA, ISTB, ISTC, ISTD, ISTE, and ISTF; Mandatory Appendices I, II, III, and V; and Non-mandatory Appendices A through H and J through M of the ASME OM Code would be incorporated by reference in § 50.55a. The NRC is clarifying that the ASME OM Code non-mandatory appendices, which are incorporated by reference into § 50.55a are approved for use, but are not mandated. The non-mandatory appendices may be used by applicants and licensees of nuclear power plants, subject to the conditions in § 50.55a(b)(3).

10 CFR 50.55a(b)(3)(i) OM Condition: Quality Assurance

The NRC proposes to revise § 50.55a(b)(3)(i) to allow use of the 1983 Edition through the 1994 Edition, 2008 Edition, and the 2009–1a Addenda of NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications.'' The NRC reviewed these Editions and Addenda after the 1983 Edition and compared them to the previously approved versions of NQA–1 and found that there were no significant differences.

The NRC is considering removing the reference in § 50.55a(b)(3)(i) to versions of NQA–1 older than the 1994 Edition. The NRC requests public comment on whether any licensee is committed to, and is using, a version of NQA–1 older than the 1994 Edition and, if so, what version the applicant or licensee is using.

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

The NRC proposes to revise § 50.55a(b)(3)(ii) to reflect the new Appendix III, ''Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants,'' of the ASME OM Code, 2009 Edition, 2011 Addenda, and 2012 Edition. Appendix III of the ASME OM Code establishes provisions for periodic verification of the design-basis capability of MOVs within the scope of the IST program. Appendix III of the ASME OM Code reflects the incorporation of ASME OM Code Cases OMN–1, ''Alternative Rules for Preservice and Inservice Testing of Active Electric Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants,'' and OMN–11, ''Risk-Informed Testing for Motor-Operated Valves.'' The NRC proposes to add four conditions in new §§ 50.55a(b)(3)(ii)(A), (B), (C), and (D) to address periodic verification of MOV design-basis capability. These conditions are discussed in the next four sections.

10 CFR 50.55a(b)(3)(ii)(A) MOV Diagnostic Test Interval

The NRC proposes to add § 50.55a(b)(3)(ii)(A) to require that licensees evaluate the adequacy of the diagnostic test interval for each MOV and adjust the interval as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of ASME OM Code, Appendix III. Paragraph III–3310(b) in Appendix III includes a provision stating that if insufficient data exist to determine the IST interval, then MOV inservice testing shall be conducted every two refueling outages or 3 years (whichever is longer) until sufficient data exist, from an applicable MOV or MOV group, to justify a longer IST interval. As discussed in 64 FR 51386 (September 22, 1999) with respect to the use of ASME OM Code Case OMN–1, the NRC considers it appropriate to include a modification requiring licensees to evaluate the information obtained for each MOV, during the first 5 years or three refueling outages (whichever is longer) of the use of Appendix III to validate assumptions made in justifying a longer test interval.

10 CFR 50.55a(b)(3)(ii)(B) MOV Testing Impact On Risk

The NRC proposes to add § 50.55a(b)(3)(ii)(B) to require that licensees ensure that the potential increase in core damage frequency (CDF) and large early release frequency (LERF) associated with the extension is acceptably small when extending exercise test intervals for high risk MOVs beyond a quarterly frequency. As discussed in 64 FR 51386 (September 22, 1999) with respect to the use of ASME OM Code Case OMN–1, the NRC considers it important for licensees to have sufficient information from the specific MOV, or similar MOVs, to demonstrate that exercising on a refueling outage frequency does not significantly affect component performance. The information may be obtained by grouping similar MOVs and establishing periodic exercising intervals of MOVs in the group over the refueling interval.

Section 50.55a(b)(3)(ii)(B) requires that the increase in the overall plant CDF and LERF resulting from the extension be acceptably small. As presented in RG 1.174, ''An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,'' the NRC considers acceptably small changes to be relative and to depend on the current plant CDF and LERF. For plants with total baseline CDF of 10^{-4} per year or less, acceptably small means CDF increases of up to 10^{-5} per year and for plants with total baseline CDF greater than 10^{-4} per year, acceptably small means CDF increases of up to 10^{-6} per year. For plants with total baseline LERF of 10^{-5} per year or less, acceptably small LERF increases are considered to be up to 10^{-6} per year, and for plants with total baseline LERF greater than 10^{-5} per year, acceptably small LERF increases are considered to be up to 10^{-7} per year.

10 CFR 50.55a(b)(3)(ii)(C) MOV Risk Categorization

The NRC proposes to add § 50.55a(b)(3)(ii)(C) to require, when applying Appendix III to the ASME OM Code, that licensees categorize MOVs according to their safety significance using the methodology described in ASME OM Code Case OMN–3, ''Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants,'' subject to the conditions discussed in RG 1.192, or using an MOV risk ranking methodology accepted by the NRC on a plant-specific or industry-wide basis in accordance with the conditions in the applicable safety evaluation. Paragraph III–3720 in Appendix III to the ASME OM Code states that when applying risk insights, each MOV shall be evaluated and categorized using a documented risk ranking methodology. Further, Appendix III only addresses risk ranking methodologies that include two risk categories. In light of the potential extension of quarterly test intervals for high risk MOVs and the relaxation of IST activities for low risk MOVs based on risk insights, the NRC has determined that the rule should specify that risk ranking methodologies must have been accepted by the NRC through RG 1.192 (which accepts ASME OM Code Case OMN–3 with the specified conditions) or safety evaluations issued to address plant-specific or industry-wide risk ranking methodologies.

Two conditions that were previously in RG 1.192 on the use of ASME OM Code Case OMN–11 related to application of the test interval criteria and grouping for low safety significant MOVs have been incorporated in an acceptable manner in Appendix III to the ASME OM Code. As noted in RG 1.192 on the use of ASME OM Code Case OMN–1, the benefits of performing a particular test should be balanced against the potential adverse effects placed on the valves or systems caused by this testing.

10 CFR 50.55a(b)(3)(ii)(D) MOV Stroke Time

The NRC proposes to add § 50.55a(b)(3)(ii)(D) to require that when a licensee applies Paragraph III–3600, ''MOV Exercising Requirements,'' of Appendix III to the OM Code, the licensee verify that the stroke time of the MOV satisfies the assumptions in the plant safety analyses. Previous editions and addenda of the ASME OM Code specified that the licensee must perform quarterly MOV stroke time measurements that could be used to verify that the MOV stroke time satisfies the assumptions in the safety analyses consistent with plant TS. The need for verification of the MOV stroke time during periodic exercising is consistent with the NRC's lessons learned from the implementation of ASME OM Code Case OMN–1. However, Paragraph III–3600 of Appendix III of the versions of the OM Code proposed to be incorporated by reference in this rulemaking no longer require the verification of MOV stroke time during periodic exercising. For this reason, the NRC is proposing to adopt the new condition which will effectively retain the need to verify MOV stroke time during periodic exercising.

10 CFR 50.55a(b)(3)(iii) OM condition: New Reactors

The NRC proposes to add § 50.55a(b)(3)(iii) to apply specific conditions for IST programs applicable to licensees of new nuclear power plants in addition to the provisions of the ASME OM Code as incorporated by reference with conditions in § 50.55a. Licensees of ''new reactors'' are, as identified in the proposed paragraph: (i) Holders of operating licenses for nuclear power reactors that received construction permits under this part on or after the date 12 months after the effective date of this rulemaking and (ii) holders of combined licenses (COLs) issued under 10 CFR part 52, whose initial fuel loading occurs on or after the date 12 months after the effective date of this rulemaking. This implementation schedule for new reactors is consistent with the NRC regulations in § 50.55a(f)(4)(i).

The NRC is evaluating COL applications to construct and operate nuclear power plants with certified designs under the process described in 10 CFR part 52. Commission Papers SECY–90–016, ''Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationship to Current Regulatory Requirements;'' SECY–93–087, ''Policy, Technical, and Licensing Issues Pertaining to Evolutionary and

Advanced Light-Water Reactor (ALWR) Designs;'' SECY–94–084, ''Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems (RTNSS) in Passive Plant Designs;'' and SECY–95–132, ''Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems (RTNSS) in Passive Plant Designs (SECY–94–084),'' discuss IST programs for new reactors licensed under 10 CFR part 52.

In recognition of new reactor designs and lessons learned from nuclear power plant operating experience, the ASME is updating the OM Code to incorporate improved IST provisions for components used in nuclear power plants that were issued (or will be issued) construction permits, or COLs, on or following January 1, 2000 (defined in the ASME OM Code as post-2000 plants). The first phase of the ASME effort incorporated IST provisions that specify full flow pump testing and other clarifications for post-2000 plants in the ASME OM Code beginning with the 2011 Addenda. The second phase of the ASME effort incorporated preservice and inservice inspection and surveillance provisions for pyrotechnic-actuated (squib) valves in the 2012 Edition of the ASME OM Code. The ASME is considering further modifications to the ASME OM Code to address additional lessons learned from valve operating experience and new reactor issues. As described in the following paragraphs, § 50.55a(b)(3)(iii) will include four specific conditions.

10 CFR 50.55a(b)(3)(iii)(A) Power-Operated Valves

The NRC proposes to add § 50.55a(b)(3)(iii)(A) to require that licensees subject to § 50.55a(b)(3)(iii) develop a program to periodically verify the capability of power-operated valves (POVs) to perform their design-basis safety functions. While Appendix III to the ASME OM Code addresses this requirement for motor-operated valves (MOVs) with applicable conditions specified in § 50.55a, nuclear power plant licensees will need to develop programs to periodically verify the design-basis capability of other POVs. The NRC's Regulatory Issue Summary (RIS) 2000–03, ''Resolution of Generic Issue 158: Performance of Safety-Related Power-Operated Valves Under Design Basis Conditions,'' provides attributes for a successful long-term periodic verification program for POVs by incorporating lessons learned from MOV performance at operating nuclear power plants and during research programs. Implementation of Appendix III to the ASME OM Code as accepted in § 50.55a(b)(3)(ii) is acceptable in satisfying § 50.55a(b)(3)(iii)(A) for MOVs.

10 CFR 50.55a(b)(3)(iii)(B) Check Valves

The NRC proposes to add § 50.55a(b)(3)(iii)(B) to require that licensees subject to § 50.55a(b)(3)(iii) perform bi-directional testing of check valves within the IST program where practicable. Nuclear power plant operating experience has revealed that testing check valves in only the flow direction can result in significant degradation, such as a missing valve disc, not being identified by the test. Nonmandatory Appendix M, ''Design Guidance for Nuclear Power Plant Systems and Component Testing,'' to ASME OM Code, 2011 Addenda and 2012 Edition, includes guidance for the design of new reactors to enable bi-directional testing of check valves. New reactor designs will provide the capability for licensees of new nuclear power plants to perform bi-directional testing of check valves within the IST program.

10 CFR 50.55a(b)(3)(iii)(C) Flow-Induced Vibration

The NRC proposes to add § 50.55a(b)(3)(iii)(C) to require that licensees subject to § 50.55a(b)(3)(iii) monitor flow-induced vibration (FIV) from hydrodynamic loads and acoustic resonance during preservice testing and inservice testing to identify potential adverse flow effects that might impact components within the scope of the IST program. Nuclear power plant operating experience has revealed the potential for adverse flow effects from vibration caused by hydrodynamic loads and acoustic resonance on components in the reactor coolant, steam, and feedwater systems. Therefore, the licensee will need to address potential adverse flow effects on safety-related pumps, valves, and dynamic restraints within the IST program in the reactor coolant, steam, and feedwater systems from hydraulic loading and acoustic resonance during plant operation to confirm that piping, components, restraints, and supports have been designed to withstand the dynamic effects of steady-state FIV and anticipated operational transient conditions. The initial test program can be used to verify that safety-related piping and components are properly installed and supported such that vibrations caused by steady-state or dynamic effects do not result in excessive stress or fatigue in safety-related plant systems.

10 CFR 50.55a(b)(3)(iii)(D) High-Risk Non-Safety Systems

The NRC proposes to add § 50.55a(b)(3)(iii)(D) to require that licensees subject to § 50.55a(b)(3)(iii) establish a program to assess the operational readiness of pumps, valves, and dynamic restraints within the scope of the Regulatory Treatment of Non-Safety Systems (RTNSS) for applicable reactor designs. In SECY–94–084 and SECY–95–132, the Commission discusses RTNSS policy and technical issues associated with passive plant designs. Some new nuclear power plants have ALWR designs that use passive safety systems that rely on natural forces, such as density differences, gravity, and stored energy, to supply safety injection water and to provide reactor core and containment cooling. Active systems in passive ALWR designs are categorized as non-safety systems with limited exceptions. Active systems in passive ALWR designs provide the first line of defense to reduce challenges to the passive systems in the event of a transient at the nuclear power plant. Active systems that provide a defense-in-depth function in passive ALWR designs need not meet all of the acceptance criteria for safety-related systems. However, there should be a high level of confidence that these active systems will be available and reliable when challenged. The combined activities to provide confidence in the capability of these active systems in passive ALWR designs to perform their functions important to safety are referred to together as the RTNSS program. In a public memorandum dated July 24, 1995, the NRC staff provided a consolidated list of the approved policy and technical positions associated with RTNSS equipment in passive plant designs discussed in SECY–94–084 and SECY–95–132 (ADAMS Accession No. ML003708048). This new paragraph will specify the need for licensees to assess the operational readiness of RTNSS pumps, valves, and dynamic restraints.

10 CFR 50.55a(b)(3)(iv) OM Condition: Check Valves (Appendix II)

The NRC proposes to revise § 50.55a(b)(3)(iv) to address Appendix II, ''Check Valve Condition Monitoring Program,'' provided in the 2003 Addenda through the 2012 Edition of the ASME OM Code. In the 2003 Addenda of the ASME OM Code, ASME revised Appendix II to address the conditions specified in § 50.55a for older versions of the appendix. Therefore, the NRC considers Appendix

II in the 2003 Addenda through the 2012 Edition of the ASME OM Code to be acceptable for use without conditions. In accepting the recent versions of Appendix II, the NRC proposes to clarify that (1) the maximum test interval allowed by Appendix II for individual check valves in a group of two valves or more must be supported by periodic testing of a sample of check valves in the group during the allowed interval and (2) the periodic testing plan must be designed to test each valve of a group at approximate equal intervals not to exceed the maximum requirement interval. The NRC notes that ASME has provided additional improvements to Appendix II since issuance of the 2003 Addenda. Therefore, where a licensee plans to voluntarily implement Appendix II to the ASME OM Code, the licensee should apply Appendix II in the most recent addenda and edition of ASME OM Code incorporated by reference in § 50.55a. The conditions currently specified for the use of Appendix II, 1995 Edition with the 1996 and 1997 Addenda, and 1998 Edition through the 2002 Addenda, of the OM Code remain the same in this proposed rule.

10 CFR 50.55a(b)(3)(vii) OM Condition: Subsection ISTB

The NRC proposes to add § 50.55a(b)(3)(vii) to prohibit the use of Subsection ISTB, ''Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants,'' in the 2011 Addenda of the ASME OM Code. In the 2011 Addenda to the ASME OM Code, the upper end of the Acceptable Range and the Required Action Range for flow and differential or discharge pressure for comprehensive pump testing in Subsection ISTB was raised to higher values. The NRC staff on the ASME OM Code committee accepted the proposed increase of the upper end of the Acceptable Range and Required Action Range with the planned addition of a requirement for a pump periodic verification test program in the ASME OM Code. However, the 2011 Addenda to the ASME OM Code did not include the requirement for a pump periodic verification test program as an oversight. Since then, the 2012 Edition to the ASME OM Code has incorporated Mandatory Appendix V, ''Pump Periodic Verification Test Program,'' that supports the changes to the acceptable and required action ranges for comprehensive pump testing in Subsection ISTB. Therefore, proposed new § 50.55a(b)(3)(vii) would prohibit the use of Subsection ISTB in the 2011 Addenda of the ASME OM Code. Licensees will be allowed to apply Subsection ISTB with the revised acceptable and required action ranges in the 2012 Edition of the ASME OM Code as incorporated by reference in § 50.55a.

10 CFR 50.55a(b)(3)(viii) OM Condition: Subsection ISTE

The NRC proposes to add § 50.55a(b)(3)(viii) to specify that licensees proposing to implement Subsection ISTE, ''Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants,'' of the ASME OM Code, 2009 Edition, 2011 Addenda, and 2012 Edition, must request and obtain NRC authorization in accordance with § 50.55a(z) to apply Subsection ISTE on a plant-specific basis as a risk-informed alternative to the applicable IST requirements in the ASME OM Code.

In the 2009 Edition of the ASME OM Code, the ASME included new Subsection ISTE that describes a voluntary risk-informed approach in developing an IST program for pumps and valves at nuclear power plants. If a licensee chooses to implement this risk-informed IST approach, Subsection ISTE indicates that all requirements in Subsection ISTA, ''General Requirements,'' Subsection ISTB, and Subsection ISTC, ''Inservice Testing of Valves in Light-Water Reactor Nuclear Power Plants,'' of the ASME OM Code continue to apply, except those identified in Subsection ISTE. The ASME selected risk-informed guidance from ASME OM Code Cases OMN–1, OMN–3, OMN–4, ''Requirements for Risk Insights for Inservice Testing of Check Valves at LWR Power Plants,'' OMN–7, ''Alternative Requirements for Pump Testing,'' OMN–11, and OMN–12, ''Alternative Requirements for Inservice Testing Using Risk Insights for Pneumatically and Hydraulically Operated Valve Assemblies in Light-Water Reactor Power Plants,'' in preparing Subsection ISTE of the ASME OM Code.

During development of Subsection ISTE, the NRC staff participating on the ASME OM Code committees indicated that the conditions specified in RG 1.192 for the use of the applicable ASME OM Code Cases need to be considered when evaluating the acceptability of the implementation of Subsection ISTE. In addition, the NRC staff noted that several aspects of Subsection ISTE will need to be addressed on a case-by-case basis when determining the acceptability of its implementation. Therefore, new § 50.55a(b)(3)(viii) requires that licensees proposing to implement Subsection ISTE of the ASME OM Code must request approval from the NRC to apply Subsection ISTE on a plant-specific basis as a risk-informed alternative to the applicable IST requirements in the ASME OM Code.

Nuclear power plant applicants for construction permits under 10 CFR part 50, or combined licenses for construction and operation under 10 CFR part 52, may describe their proposed implementation of the risk-informed IST approach specified in Subsection ISTE of the ASME OM Code for NRC review in their applications.

The NRC will evaluate § 50.55a(z) requests for approval to implement Subsection ISTE in accordance with the following considerations:

1. Scope of Risk-Informed IST Program

Subsection ISTE–1100, ''Applicability,'' establishes the component safety categorization methodology and process for dividing the population of pumps and valves, as identified in the IST Program Plan, into high safety significant component (HSSC) and low safety significant component (LSSC) categories. When establishing a risk-informed IST program, the licensee should address a wide range of components important to safety at the nuclear power plant that includes both safety-related and nonsafety-related components. These components might extend beyond the scope of the ASME OM Code.

2. Risk-Ranking Methodology

The licensee should specify in its request for authorization to implement a risk-informed IST program the methodology to be applied in risk ranking its components. ISTE–4000, ''Specific Component Categorization Requirements,'' incorporates ASME OM Code Case OMN–3 for the categorization of pumps and valves in developing a risk-informed IST program. The OMN–3 Code Case methodology for risk ranking uses two categories of safety significance. The NRC staff has also accepted other methodologies for risk ranking that use three categories of safety significance.

3. Safety Significance Categorization

The licensee should categorize components according to their safety significance based on the methodology described in Subsection ISTE with the applicable conditions on the use of ASME OM Code Case OMN–3 specified in RG 1.192, or use other risk ranking methodologies accepted by the NRC on a plant-specific or industry-wide basis with applicable conditions specified by the NRC for their acceptance. The licensee should address the seven

conditions in RG 1.192 for the use of ASME OM Code Case OMN–3 as appropriate in developing the risk-informed IST program described in Subsection ISTE. With respect to the provisions in Subsection ISTE, these conditions are:

(a) The implementation of ISTE–1100 should include within the scope of a licensee's risk-informed IST program non-ASME Code pumps and valves categorized as HSSCs that might not currently be included in the IST program at the nuclear power plant.

(b) The decision criteria discussed in ISTE–4410, ''Decision Criteria,'' and Non-mandatory Appendix L, ''Acceptance Guidelines,'' of the ASME OM Code for evaluating the acceptability of aggregate risk effects (*i.e.,* for Core Damage Frequency [CDF] and Large Early Release Frequency [LERF]) should be consistent with the guidance provided in RG 1.174, ''An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis.''

(c) The implementation of ISTE–4440, ''Defense in Depth,'' should be consistent with the guidance contained in Section 2.2.1, ''Defense-in-Depth Evaluation,'' and Section 2.2.2, ''Safety Margin Evaluation,'' of RG 1.175, ''An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing.''

(d) The implementation of ISTE–4500, ''Inservice Testing Program,'' and ISTE–6100, ''Performance Monitoring,'' should be consistent with the guidance contained in Section 3.2, ''Program Implementation,'' and Section 3.3, ''Performance Monitoring,'' of RG 1.175.

(e) The implementation of ISTE–3210, ''Plant-Specific PRA,'' should be consistent with the guidance that the Owner is responsible for demonstrating and justifying the technical adequacy of the PRA analyses used as the basis to perform component risk ranking and for estimating the aggregate risk impact. For example, RG 1.200, ''An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,'' and RG 1.201, ''Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to their Safety Significance,'' provide guidance for PRA technical adequacy and component risk ranking.

(f) The implementation of ISTE–4240, ''Reconciliation,'' should specify that the expert panel may not classify components that are ranked HSSC by the results of a qualitative or quantitative PRA evaluation (excluding the sensitivity studies) or the defense-in-depth assessment to LSSC.

(g) The implementation of ISTE–3220, ''Living PRA,'' should be consistent with the following: (i) To account for potential changes in failure rates and other changes that could affect the PRA, changes to the plant must be reviewed and, as appropriate, the PRA updated; (ii) when the PRA is updated, the categorization of structures, systems, and components must be reviewed and changed if necessary to remain consistent with the categorization process; and (iii) the review of the plant changes must be performed in a timely manner and must be performed once every two refueling outages, or as required by § 50.71(h)(2) for COL holders.

4. Pump Testing

Subsection ISTE–5100, ''Pumps,'' incorporates ASME OM Code Case OMN–7 for risk-informed testing of pumps categorized as LSSCs. Subsection ISTE–5100 allows the interval for Group A and Group B testing of LSSC pumps specified in Subsection ISTB of the ASME OM Code to be extended from the current 3-month interval to intervals of 6 months or 2 years. Subsection ISTE–5100 eliminates the requirement in Subsection ISTB to perform comprehensive pump testing for LSSC pumps. Table ISTE–5121–1, ''LSSC Pump Testing,'' specifies that pump operation may be required more frequently than the specified test frequency (6 months) to meet vendor recommendations. Subsection ISTE–4500, ''Inservice Testing Program,'' specifies in ISTE–4510, ''Maximum Testing Interval,'' that the maximum testing interval shall be based on the more limiting of (a) the results of the aggregate risk, or (b) the performance history of the component. ISTE–5130, ''Maximum Test Interval—Pre-2000 Plants,'' specifies that the most limiting interval for LSSC pump testing shall be determined from ISTE–4510 and ISTE–5120, ''Low Safety Significant Pump Testing.'' The ASME developed the comprehensive pump test requirements in the ASME OM Code to address weaknesses in the Code requirements to assess the operational readiness of pumps to perform their design-basis safety function. Therefore, the licensee should ensure that testing under Subsection ISTE will provide assurance of the operational readiness of pumps in each safety significant categorization to perform their design-basis safety function as described in RGs 1.174 and 1.175.

5. Motor-Operated Valve Testing

Subsection ISTE–5300, ''Motor Operated Valve Assemblies,'' provides a risk-informed IST approach instead of the IST requirements for MOVs in Mandatory Appendix III to the ASME OM Code. The ASME prepared Appendix III to the OM Code to replace the requirement for quarterly stroke-time testing of MOVs with a program of periodic exercising and diagnostic testing to address lessons learned from nuclear power plant operating experience and industry and regulatory research programs for MOV performance. Subsection ISTC of the ASME OM Code specifies the implementation of Appendix III for periodic exercising and diagnostic testing of MOVs to replace quarterly stroke-time testing previously required for MOVs. Appendix III incorporates provisions that allow a risk-informed IST approach for MOVs as described in ASME OM Code Cases OMN–1 and OMN–11. Subsection ISTE–5300 is not consistent with the provisions for the risk-informed IST program for MOVs specified in Appendix III to the ASME OM Code (and Code Cases OMN–1 and 11). Therefore, licensees proposing to implement Subsection ISTE should address the provisions in paragraph III–3700, ''Risk-Informed MOV Inservice Testing,'' of Appendix III to the ASME OM Code as incorporated by reference in § 50.55a with the applicable conditions instead of ISTE–5300.

6. Pneumatically and Hydraulically Operated Valve Testing

Subsection ISTE–5400, ''Pneumatically and Hydraulically Operated Valves,'' specifies that licensees test their AOVs and HOVs in accordance with Appendix IV to the ASME OM Code. Subsection ISTE–5400 indicates that Appendix IV is in the course of preparation. The NRC staff will need to review Appendix IV prior to accepting its use as part of Subsection ISTE. Therefore, licensees proposing to implement Subsection ISTE should describe the planned IST provisions for AOVs and HOVs in its request for authorization to implement Subsection ISTE.

7. Pump Periodic Verification Test

Subsection ISTE does not include a requirement to implement the pump periodic verification test program specified in Mandatory Appendix V to the ASME OM Code, 2012 Edition. The licensee should address the consideration of a pump periodic verification test program in its risk-informed IST program proposed as part

of the authorization request to implement Subsection ISTE.

10 CFR 50.55a(b)(3)(ix) OM Condition: Subsection ISTF

The NRC proposes to add § 50.55a(b)(3)(ix) for two purposes. First, the proposed condition specifies that licensees applying Subsection ISTF, ''Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants—Post-2000 Plants,'' in the 2012 Edition of the OM Code shall satisfy the requirements of Mandatory Appendix V, ''Pump Periodic Verification Test Program,'' of the OM Code, 2012 Edition. The proposed condition also states that Subsection ISTF, 2011 Addenda, is not acceptable for use. As previously discussed regarding new § 50.55a(b)(3)(vii), the upper end of the Acceptable Range and the Required Action Range for flow and differential or discharge pressure for comprehensive pump testing in Subsection ISTB in the ASME OM Code was raised to higher values in combination with the incorporation of Mandatory Appendix V, ''Pump Periodic Verification Test Program.'' However, Subsection ISTF in the 2011 Addenda and 2012 Edition to the ASME OM Code does not include a requirement for a pump periodic verification test program. Therefore, new § 50.55a(b)(3)(ix) would require that the provisions of Appendix V be applied when implementing Subsection ISTF of the 2012 Edition of the OM Code to support the application of the upper end of the Acceptable Range and the Required Action Range for flow and differential or discharge pressure for inservice pump testing in Subsection ISTF. The proposed paragraph would prohibit the use of Subsection ISTF in the 2011 Addenda of the OM Code, which does not include Appendix V.

10 CFR 50.55a(b)(3)(xi) OM Condition: Valve Position Indication

The NRC proposes to add a new paragraph, § 50.55a(b)(3)(xi), containing a new condition that would specify that when implementing ASME OM Code, Subsection ISTC–3700, ''Position Verification Testing,'' licensees shall supplement the ASME OM Code provisions as necessary to verify that valve operation is accurately indicated. Subsection ISTC–3700 of the ASME OM Code requires that valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated. Subsection ISTC–3700 states that where practicable, this local observation should be supplemented by other indications such as the use of flow meters or other suitable instrumentation to verify obturator position. Subsection ISTC–3700 also states that where local observation is not possible, other indications shall be used for verification of valve operation. Nuclear power plant operating experience has revealed that reliance on indicating lights and stem travel are not sufficient to satisfy the requirement in ISTC–3700 to verify that valve operation is accurately indicated. Appendix A, ''General Design Criteria for Nuclear Power Plants,'' to 10 CFR part 50 requires that where generally recognized codes and standards are used, they shall be identified and evaluated to determine their applicability, adequacy, and sufficiency, and shall be supplemented or modified as necessary to assure a quality product in keeping with the required safety function. This new condition specifies that when implementing ASME OM Code, Subsection ISTC–3700, licensees shall develop and implement a method to verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation, to provide assurance of proper obturator position. This is not a new requirement but rather a clarification of the intent of the existing ASME OM Code. The ASME OM Code specifies obturator movement verification in order to detect certain internal valve failure modes consistent with the definition of 'exercising' found in ISTA–2000 (*i.e.,* demonstration that the moving parts of a component function). Verification of the ability of an obturator to change or maintain position is an essential element of valve operational readiness determination which is a fundamental aspect of the ASME OM Code. The NRC's position is further elaborated in NUREG–1482 Revision 2, paragraph 4.2.7.

10 CFR 50.55a(f): Inservice Testing Requirements

The NRC proposes to revise the introductory text of § 50.55a(f) to indicate that systems and components must meet the requirements for ''preservice and inservice testing'' in the applicable ASME Codes and that both activities are referred to as ''inservice testing'' in the remainder of paragraph (f). The proposed change clarifies that the ASME OM Code includes provisions for preservice testing of components as part of its overall provisions for IST programs. No expansion of IST program scope is intended by this clarification.

10 CFR 50.55a(f)(3)(iii)(A) Class 1 Pumps and Valves: First Provision

The NRC proposes to revise § 50.55a(f)(3)(iii)(A) to ensure that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. Paragraph ISTA–1100, ''Scope,'' in Subsection ISTA, ''General Requirements,'' of the ASME OM Code states that the requirements for preservice and inservice testing and examination of components in light-water reactor nuclear power plants apply to (a) pumps and valves that are required to perform a specific function in shutting down a reactor to the safe shutdown condition, in maintaining the safe shutdown condition, or in mitigating the consequences of an accident; (b) pressure relief devices that protect systems or portions of systems that perform one or more of these three functions; and (c) dynamic restraints (snubbers) used in systems that perform one of more of these three functions, or to ensure the integrity of the reactor coolant pressure boundary. This revision will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6, ''Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints.''

10 CFR 50.55a(f)(3)(iii)(B) Class 1 Pumps and Valves: Second Provision

The NRC proposes to revise § 50.55a(f)(3)(iii)(B) to clarify that this paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This revision will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(3)(iv)(A) Class 2 and 3 Pumps and Valves: First Provision

The NRC proposes to revise § 50.55a(f)(3)(iv)(A) to clarify that this paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code and not covered by paragraph (f)(3)(iii)(A) for Class 1 pumps and valves. This revision will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(3)(iv)(B) Class 2 and 3 Pumps and Valves: Second Provision

The NRC proposes to revise § 50.55a(f)(3)(iv)(B) to clarify that this paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code and not covered by paragraph (f)(3)(iii)(B) for Class 1 pumps

and valves. This revision will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(4) Inservice Testing Standards Requirement for Operating Plants

The NRC proposes to revise § 50.55a(f)(4) to clarify that this paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This revision will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6.

D. ASME Code Cases

The NRC proposes to remove the revision number of the three RGs currently approved by the Office of the Federal Register for incorporation by reference throughout the substantive provisions of § 50.55a. The revision numbers for the RGs approved for incorporation by reference (currently, RGs 1.84, 1.147, and 1.192) would be retained in paragraph (a)(3)(i) through (a)(3)(iii) of § 50.55a, where the RGs are listed by full title, including revision number. These proposed changes would simplify the regulatory language containing cross-references to these RGs and reduce the possibility of NRC error in preparing future amendments to § 50.55a with respect to these RGs. These changes are administrative in nature and do not change substantive requirements with respect to the RGs and the Code Cases listed in the RGs.

ASME BPV Code Case N–729–4

On September 10, 2008, the NRC issued a final rule to update § 50.55a to the 2004 Edition of the ASME Code (73 FR 52730). As part of the final rule, § 50.55a(g)(6)(ii)(D) implemented an augmented inservice inspection program for the examination of reactor pressure vessel (RPV) upper head penetration nozzles and associated partial penetration welds. The program required the implementation of ASME BPV Code Case N–729–1, with certain conditions.

The application of ASME BPV Code Case N–729–1 was necessary because the inspections required by the 2004 Edition of the ASME BPV Code, Section XI were not written to address degradation of the RPV upper head penetration nozzles welds by primary water stress corrosion cracking (PWSCC). The safety consequences of inadequate inspections can be significant. The NRC's determination that the ASME Code required inspections are inadequate is based upon operating experience and analysis. The absence of an effective inspection regime could, over time, result in unacceptable circumferential cracking, or the degradation of the RPV upper head or other reactor coolant system components by leakage assisted corrosion. These degradation mechanisms increase the probability of a loss-of-coolant accident.

Examination frequencies and methods for RPV upper head penetration nozzles and welds are provided in ASME BPV Code Case N–729–1. The use of code cases is voluntary, so these provisions were developed, in part, with the expectation that the NRC would incorporate the code case by reference into the CFR. Therefore, the NRC adopted rule language in § 50.55a(g)(6)(ii)(D) requiring implementation of ASME BPV Code Case N–729–1, with conditions, in order to enhance the examination requirements in the ASME BPV Code, Section XI for RPV upper head penetration nozzles and welds. The examinations conducted in accordance with ASME BPV Code Case N–729–1 provide reasonable assurance that ASME Code allowable limits will not be exceeded and that PWSCC will not lead to failure of the RPV upper head penetration nozzles or welds. However, the NRC concluded that certain conditions were needed in implementing the examinations in ASME BPV Code Case N–729–1. These conditions are set forth in § 50.55a(g)(6)(ii)(D).

On June 22, 2012, the ASME approved the fourth revision of ASME BPV Code Case N–729, (N–729–4). This revision changed certain requirements based on a consensus review of inspection techniques and frequencies. These changes were deemed necessary by the ASME to supersede the previous requirements under N–729–1 to establish an effective long-term inspection program for the RPV upper head penetration nozzles and associated welds in pressurized water reactors. The major changes included incorporation of previous NRC conditions in the CFR. Minor changes were also made to address editorial issues, to correct figures or to add clarity.

The NRC proposes to update the requirements of § 50.55a(g)(6)(ii)(D) to require licensees to implement ASME BPV Code Case N–729–4, with conditions. The NRC conditions have been modified to address the changes in ASME BPV Code Case N–729–4. The NRC's proposed revisions to the conditions on ASME BPV Code Case N–729–1 are discussed in the next four sections.

10 CFR 50.55a(g)(6)(ii)(D)(1) Implementation

The NRC proposes to revise § 50.55a(g)(6)(ii)(D)(*1*) to change the version of ASME BPV Code Case N–729 from N–729–1 to N–729–4 for the reasons previously set forth. Due to the incorporation of N–729–4, the date to establish applicability for licensed pressurized water reactors will be changed to the effective date of the final rule.

10 CFR 50.55a(g)(6)(ii)(D)(2) Through (6)

The NRC proposes to revise § 50.55a(g)(6)(ii)(D)(*2*) through (*6*) to remove the conditions currently in § 50.55a(g)(6)(ii)(D)(*2*) through (*5*) and to redesignate the condition currently in § 50.55a(g)(6)(ii)(D)(*6*) as § 50.55a(g)(6)(ii)(D)(*2*). The conditions currently in § 50.55a(g)(6)(ii)(D)(*2*) to § 50.55a(g)(6)(ii)(D)(*5*) have all been incorporated either verbatim or more conservatively in the revisions to ASME BPV Code Case N–729, up to version N–729–4. Therefore, there is no reason to retain these conditions in § 50.55a. The NRC proposes to include new conditions in § 50.55a(g)(6)(ii)(D)(*3*) and (*4*) as described in the following discussion.

10 CFR 50.55a(g)(6)(ii)(D)(3) Bare Metal Visual Frequency

The NRC proposes to adopt a new condition (to be included in proposed § 50.55a(g)(6)(ii)(D)(*3*)) to modify the option to extend bare metal visual inspections of the reactor pressure vessel upper head surface beyond the frequency listed in Table 1 of ASME BPV Code Case N–729–4. Previously, upper heads aged with less than eight effective degradation years were considered to have a low probability of initiating PWSCC, the cracking mechanism of concern. This ranking of effective degradation years was based on a simple time at temperature correlation. All of the upper heads within this category, with the exception of new heads using Alloy 600 penetration nozzles, were considered to have lower susceptibility to cracking due to the upper heads being at or near the cold leg operating temperature of the reactor coolant system. Therefore, these plants were said to have ''cold heads.'' All of the upper heads that had experienced cracking prior to 2006 were near the hot leg operating temperature of the reactor coolant system, which validated the time at temperature model.

In 2006, one of the 21 ''cold head'' plants identified two indications within a penetration nozzle and the associated partial penetration weld. Then, between 2006 and 2013, five of the 21 ''cold head'' plants identified multiple indications within fifteen different penetration nozzles and the associated partial penetration welds. None of these indications caused leakage, and volumetric examination of the penetration nozzles showed no flaw in the nozzle material had grown through-wall; however, this increasing trend creates a reasonable safety concern.

Recent operational experience has shown that the volumetric inspection of penetration nozzles, at the current inspection frequency, is adequate to identify indications in the nozzle material prior to leakage; however, volumetric examinations cannot be performed on the partial penetration welds. Therefore, given the additional cracking identified at cold leg temperature, the NRC staff has concerns about the adequacy of the partial penetration weld examinations.

Leakage from a partial penetration weld into the annulus between the nozzle and head material can cause corrosion of the low alloy steel head. While initially limited in leak rate, due to limited surface area of the weld being in contact with the annulus region, corrosion of the vessel head material can expose more of the weld surface to the annulus, allowing a greater leak rate. Since an indication in the weld cannot be identified by a volumetric inspection, a postulated crack through the weld, just about to cause leakage, could exist as a plant performed its last volumetric and/or bare metal visual examination of the upper head material. This gives the crack years to breach the surface and leak prior to the next scheduled visual examination.

Only a surface examination of the wetted surface of the partial penetration weld can reliably detect flaws in the weld. Unfortunately, this examination cannot size the flaws in the weld, and, if performed manually, requires significant radiological dose to examine all the partial penetration welds on the upper head. As such, the available techniques are only able to detect a flaw after it has caused leakage. These techniques are a bare metal visual examination or a volumetric leak path assessment performed on the frequency of the volumetric examination.

Volumetric leak path examinations are only done on outages when a volumetric examination of the nozzle is performed. Therefore, under the current requirements allowed by Note 4 of ASME BPV Code Case N–729–4, leakage from a crack in the weld of a ''cold head'' plant could start and continue to grow for the 5 years between the required bare metal visual examinations to detect leakage through the partial penetration weld.

Given the additional cracking identified at cold leg temperature of upper head penetration nozzles and associated welds, the NRC finds limited basis to continue to categorize these ''cold head'' plants as having a low susceptibility to crack initiation. The NRC proposes to increase the frequency of the bare metal visual examinations of ''cold heads'' to identify potential leakage as soon as reasonably possible because of the volumetric examination limitations. Therefore, the NRC proposes to condition Note 4 of ASME BPV Code Case N–729–4 to require a bare metal visual exam each outage in which a volumetric exam is not performed. The NRC also proposes to allow ''cold head'' plants to extend their bare metal visual inspection frequency from once each refueling outage, as stated in Table 1 of N–729–1, to once every 5 years, but only if the licensee performed a wetted surface examination of all of the partial penetration welds during the previous volumetric examination. Applying the conditioned bare metal visual inspection frequency or a volumetric examination each outage will allow licensees to identify any potential leakage through the partial penetration welds prior to significant degradation of the low alloy steel head material, thereby providing reasonable assurance of the structural integrity of the reactor coolant pressure boundary.

These issues, including the operational experience, the fact that volumetric examination is not available to interrogate the partial penetration welds, and potential regulatory options, were discussed publicly at multiple ASME Code meetings, at the annual Materials Programs Technical Information Exchange public meeting held at the NRC Headquarters in June 2013, and at the 2013 NRC Regulatory Information Conference.

10 CFR 50.55a(g)(6)(ii)(D)(4) Surface Exam Acceptance Criteria

The NRC proposes to adopt a new condition (to be included in proposed § 50.55a(g)(6)(ii)(D)(*4*)) to define surface examination acceptance criteria. Paragraph –3132(b) of ASME BPV Code Case N–729–4 sets forth the acceptance criteria for surface examinations. In general, throughout Section XI of the ASME BPV Code, the acceptance criteria for surface examinations default to Section III, Paragraph NB–5352, ''Acceptance Standards''. Typically, for rounded indications, the indication was only unacceptable if it was greater than 3⁄16 inch in size. The NRC requested that the code case authors include a requirement that any size rounded indication causing nozzle leakage is unacceptable due to operating experience identifying PWSCC under rounded indications less than 3⁄16 inch in size.

Recently, the ASME Code Committee approved an interpretation of the language in Paragraph –3132(b) that implied any size rounded indication is acceptable unless there is relevant indication of nozzle leakage, even those greater than 3⁄16 inch. The NRC does not agree with the interpretation and maintains its original stance on rounded indications that any size rounded indication is unacceptable if there is an indication of leakage. Since the adoption of ASME BPV Code Case N–729–1 into § 50.55a(g)(6)(ii)(D), all licensees have used the NRC's stance in implementing Paragraph –3132(b), even after the recent ASME Code Committee interpretation approval over NRC objection.

Therefore, in order to ensure compliance with the previous and ongoing requirement, the NRC proposes to revise condition § 50.55a(g)(6)(ii)(D)(*4*) to include clarity within the acceptance criteria for surface examinations. The current edition requirements of NB–5352 of ASME BPV Code, Section III for the licensee's ongoing 10-year inservice inspection interval shall be met.

ASME BPV Code Case N–770–2

On June 21, 2011, the NRC issued a final rule including § 50.55a(g)(6)(ii)(F) requiring the implementation of ASME BPV Code Case N–770–1, ''Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS N86182 Weld Filler Material With or Without Application of Listed Mitigation Activities,'' with certain conditions.

On June 9, 2011, the ASME approved the second revision of ASME BPV Code Case N–770 (N–770–2). The major changes from N–770–1 to N–770–2 included establishing new ASME Code Case Table 1 inspection item classifications for optimized weld overlays and allowing alternatives when complete inspection coverage cannot be met. Minor changes were also made to address editorial issues, to correct figures, or to add clarity. The NRC finds that the updates and improvements in N–770–2 are sufficient to update § 50.55a(g)(6)(ii)(F).

The NRC therefore proposes to update the requirements of § 50.55a(g)(6)(ii)(F) to require licensees to implement ASME BPV Code Case N–770–2 with conditions. The NRC conditions have been modified to address the changes in ASME BPV Code Case N–770–2 and to ensure that this regulatory framework will provide adequate protection of public health and safety. The following sections discuss each of the NRC's proposed changes to the conditions on ASME BPV Code Case N–770–2.

10 CFR 50.55a(g)(6)(ii)(F)(1) Implementation

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*1*) to change the version of ASME BPV Code Case N–770 from N–770–1 to N–770–2 and to require its implementation (with conditions) to incorporate the updates and improvements contained in N–770–2. The NRC proposes that licensees begin using N–770–2 on the effective date of this rule.

10 CFR 50.55a(g)(6)(ii)(F)(2) Categorization

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*2*) to provide clarification regarding categorization of each Alloy 82/182 butt weld, mitigated or not, under N–770–2. This paragraph also clarifies the NRC's position that paragraph –1100(e) shall not be used to exempt welds that rely on Alloy 82/182 for structural integrity from more frequent ISI schedules until the NRC has reviewed and authorized an alternative categorization for the weld. Additionally, the NRC proposes to change the inspection item categories for full structural weld overlays from C to C–1 and F to F–1 due to reclassification under ASME BPV Code Case N–770–2.

10 CFR 50.55a(g)(6)(ii)(F)(3) Baseline Examinations

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*3*) to clarify the baseline examination requirements by stating that previously-conducted examinations, in order to count as baseline examinations, must meet the requirements of ASME BPV Code Case N–770–2, as conditioned. The 2011 rule required the use of ASME Code Section XI Appendix VIII qualifications for baseline examinations, which is stricter than N–770–2 and does not provide requirements for optimized weld overlays. The revision also updates the deadline for baseline examination requirements since the January 20, 2012, deadline from the previous rule has passed. Finally, upon implementation of this rule, if a licensee is currently in an outage, then the baseline inspection requirement can be met by performing the inspections in accordance with the current regulatory requirements of § 50.55a(g)(6)(ii)(F) in lieu of the examination requirements of paragraphs –2500(a) or –2500(b) of ASME BPV Code Case N–770–2.

10 CFR 50.55a(g)(6)(ii)(F)(4) Examination Coverage

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*4*) to define examination coverage for circumferential flaws and to prohibit the use of paragraph –2500(d) of ASME BPV Code Case N–770–2 which, in some circumstances, allows unacceptably low examination coverage. Paragraph –2500(d) of N–770–2 would allow the reduction of circumferential volumetric examination coverage with analytical evaluation. Paragraph –2500(c) was previously prohibited from use, and it continues to be prohibited. The NRC proposes to establish an essentially 100 percent volumetric examination coverage requirement for circumferential flaws to provide reasonable assurance of structural integrity of all ASME Code Class 1 butt welds susceptible to PWSCC. Therefore, the NRC proposes to adopt a condition prohibiting the use of paragraphs –2500(c) and –2500(d). A licensee may request approval for use of these paragraphs under 10 CFR 50.55a(z).

10 CFR 50.55a(g)(6)(ii)(F)(5) Inlay/Onlay Inspection Frequency

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*5*) to add the explanatory heading, ''Inlay/onlay inspection frequency,'' and to make minor editorial corrections.

10 CFR 50.55a(g)(6)(ii)(F)(6) Reporting Requirements

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*6*) to add the explanatory heading, ''Reporting requirements.''

10 CFR 50.55a(g)(6)(ii)(F)(7) Defining ''t''

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*7*) to add the explanatory heading, ''Defining 't'.''

10 CFR 50.55a(g)(6)(ii)(F)(8) Optimized Weld Overlay Examination

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*8*) to maintain the requirement for the timing of the initial inservice examination of optimized weld overlays. Uncracked welds mitigated with optimized weld overlays were re-categorized by ASME BPV Code Case N–770–2 from Inspection Item D to Inspection Item C–2; however, the initial inspection requirement was not incorporated into the Code Case for Inspection Item C–2.

The NRC has determined that uncracked welds mitigated with an optimized weld overlay must have an initial inservice examination no sooner than the third refueling outage and no later than 10 years following the application of the weld overlay to identify unacceptable crack growth. Optimized weld overlays establish compressive stress on the inner half thickness of the weld, but the outer half thickness may also be under tensile stresses. The requirement for an initial inservice examination no sooner than the third refueling outage and no later than 10 years following the application of the weld overlay is based on the design of optimized weld overlays which require the outer quarter thickness of the susceptible material to provide structural integrity for the weld. Therefore, the NRC proposes to continue adoption of the condition which requires the initial inservice examination of uncracked welds mitigated by optimized weld overlay (*i.e.,* the welds which are subject to Inspection Item C–2 of ASME BPV Code Case N–770–2) within the specified timeframe.

10 CFR 50.55a(g)(6)(ii)(F)(9) Deferral

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*9*) to address changes in ASME BPV Code Case N–770–2 which allow the deferral of the first inservice examination of uncracked welds mitigated with optimized weld overlays, Inspection Item C–2. Previously, under N–770–1, the initial inservice examination of these welds was not allowed to be deferred. Allowing deferral of the initial inservice examination in accordance with N–770–2 could, in certain circumstances, allow the initial inservice examination to be performed up to 20 years after installation. Therefore, the NRC proposes to adopt a condition which would preclude the deferral of the initial inservice examination of uncracked welds mitigated by optimized weld overlays.

10 CFR 50.55a(g)(6)(ii)(F)(10) Examination Technique

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*10*) to address changes in ASME BPV Code Case N–770–2. Note 14(a) of Table 1 of ASME BPV Code Case N–770–2 provides the previously required full examination requirement for optimized weld overlays. The language of ASME BPV Code Case N–770–2, however, does not

require the implementation of the full examination requirements of Note 14(a) of Table 1, if possible, before implementing the reduced examination coverage requirements of Note 14(b) of Table 1 or Note (b) of Figure 5(a). The full examination requirement should be implemented, if possible, before the option of reduced examination coverage is allowed. Therefore, the NRC proposes to modify the current condition in § 50.55a(g)(6)(ii)(F)(*10*) to allow the use of Note 14(b) of Table 1 and Note (b) of Figure 5(a) of ASME BPV Code Case N–770–2 only after the determination that the requirements of Note 14(a) of Table 1 of ASME BPV Code Case N–770–2 cannot be met.

10 CFR 50.55a(g)(6)(ii)(F)(11) Cast Stainless Steel

The NRC proposes to add § 50.55a(g)(6)(ii)(F)(*11*) to address examination requirements through cast stainless steel materials by requiring the use of Appendix VIII qualifications to meet the inspection requirements of paragraph –2500(a) of ASME BPV Code Case N–770–2. The requirements for volumetric examination of butt welds through cast stainless steel materials are currently being developed as Supplement 9 to the ASME BPV Code, Section XI, Appendix VIII. In accordance with Appendix VIII for supplements that have not been developed, the requirements of Appendix III apply. Appendix III requirements are not equivalent to Appendix VIII requirements. For the volumetric examination of ASME Class 1 welds, the NRC has established the requirement for examination qualification under the Appendix VIII. Thus, the NRC proposes to adopt a condition requiring the use of Appendix VIII qualifications to meet the inspection requirements of paragraph –2500(a) of ASME BPV Code Case N–770–2 by January 1, 2020.

The development of a sufficient number of mockups would be required to establish an Appendix VIII program for examination of ASME Code Class 1 piping and vessel nozzle butt welds through cast stainless steel materials. The NRC recognizes that significant time and resources are required to create mockups and to allow for qualification of equipment, procedures and personnel. Therefore, the NRC proposes that licensees be required to use these Appendix VIII qualifications no later than their first scheduled weld examinations involving cast stainless steel materials occurring after January 1, 2020.

10 CFR 50.55a(g)(6)(ii)(F)(12) Stress Improvement Inspection Coverage

The NRC proposes to add § 50.55a(g)(6)(ii)(F)(*12*) to clarify the examination coverage requirements allowed under Appendix I of ASME BPV Code Case N–770–2 for butt welds joining cast stainless steel material. Under current ASME BPV Code, Section XI, Appendix VIII requirements, the volumetric examination of butt welds through cast stainless steel materials is under Supplement 9. Supplement 9 rules are still being developed by the ASME BPV Code. Therefore, it is currently impossible to meet the requirement of Paragraph I.5.1 for butt welds joining cast stainless steel material.

The material of concern is the weld material susceptible to PWSCC adjoining the cast stainless steel material. Appendix VIII qualified procedures are available to perform the inspection of the susceptible weld material, but they are not qualified to inspect the cast stainless steel materials. Therefore, the NRC proposes to adopt a condition changing the inspection volume for stress-improved dissimilar metal welds with cast stainless steel from the ASME Code Section XI requirements to ''the maximum extent practical including 100 percent of the susceptible material volume.'' This will remain applicable until an Appendix VIII qualified procedure for the inspection through cast stainless steel materials is available in accordance with the proposed condition in § 50.55a(g)(6)(ii)(F)(*11*).

10 CFR 50.55a(g)(6)(ii)(F)(13) Encoded Ultrasonic Examination

The NRC proposes to add § 50.55a(g)(6)(ii)(F)(13) to require the encoding of ultrasonic volumetric examinations of Inspection Items A–1, A–2, B, E, F–2, J, and K in Table 1 of N–770–2. A human performance gap has been found between some ultrasonic testing procedures as demonstrated during ASME BPV Code, Section XI, Appendix VIII qualification versus as applied in the field.

The human factors that contributed to the recent examinations that failed to identify significant flaws at North Anna Power Station, Unit 1, in 2012 (Licensee Event Report 50–338/2012–001–00, ADAMS Accession No. ML12151A441) and at Diablo Canyon Nuclear Power Plant in 2013 (Relief Request REP–1 U2, Revision 2, ADAMS Accession No. ML13232A308) can be avoided by the use of encoded ultrasonic examinations. Encoded ultrasonic examinations electronically store both the positional and ultrasonic information from the inspections. Encoded examinations allow for the inspector to evaluate the data and search for indications outside of a time limiting environment to assure that the inspection was conducted properly and to allow for sufficient time to analyze the data. Additionally, the encoded examination would allow for an independent review of the data by other inspectors or an independent third party. Finally, the encoded examination could be compared to previous and/or future encoded examinations to determine if flaws are present and flaw growth rate. Therefore, the NRC proposes to adopt a condition requiring the use of encoding for ultrasonic volumetric examinations of non-mitigated or cracked mitigated dissimilar metal butt welds in the reactor coolant pressure boundary which are within the scope of ASME BPV Code Case N–770–2.

ASME BPV Code Case N–824

10 CFR 50.55a(b)(2)(xxxvii) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii) to allow licensees to use the provisions of ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1,'' subject to NRC-proposed conditions of § 50.55a(b)(2)(xxxvii)(A) through (E), when implementing inservice examinations in accordance with the ASME BPV Code, Section XI requirements.

During the construction of nuclear power plants, it was recognized that the grain structure of cast austenitic stainless steel (CASS) could prevent effective ultrasonic inspections of piping welds where one or both sides of the welds were constructed of CASS. The high strength and toughness of CASS (prior to thermal embrittlement) made it desirable as a building material despite this known inspection issue. This choice of construction materials has rendered many pressure boundary components without a means to reliably inspect them volumetrically. While there is no operational experience of a CASS component failing, as part of the reactor pressure boundary, inservice volumetric inspection of these components is necessary to provide reasonable assurance of their structural integrity.

The current regulatory requirements for the examination of CASS, provided in § 50.55a, do not provide sufficient guidance to assure that the CASS components are being inspected

adequately. To illustrate that ASME Code does not provide adequate guidance, ASME Code, Section XI, Appendix III, Supplement 1 states ''Cast materials may preclude meaningful examinations because of geometry and attenuation variables.'' For this reason, over the past several decades, licensees have been unable to perform effective inspections of welds joining CASS components. To allow for continued operation of their plants, licensees submitted hundreds of requests for relief from the ASME Code requirements for inservice inspection of CASS components to the NRC, resulting in a significant regulatory burden. Based on the improvements in ultrasonic inspection technology and techniques for CASS components, the ASME approved BPV Code Case N–824 (N–824) on October 16, 2012, which describes how to develop a procedure capable of meaningfully inspecting welds in CASS components.

The NRC commissioned a research program to determine the effectiveness of the new technologies for inspections of CASS components in an effort to resolve some of the known inspection issues. The result of this work is published in NUREG/CR–6933, ''Assessment of Crack Detection in Heavy-Walled Cast Stainless Steel Piping Welds Using Advanced Low-Frequency Ultrasonic Methods'', March 2007, and NUREG/CR–7122, ''An Evaluation of Ultrasonic Phased Array Testing for Cast Austenitic Stainless Steel Pressurizer Surge Line Piping Welds,'' March 2012. These NUREG/CR reports show that CASS materials less than 1.6 inches thick can be reliably inspected for flaws 10 percent through-wall or deeper if encoded phased-array examinations are performed using low ultrasonic frequencies and a sufficient number of inspection angles. Additionally, for thicker welds, flaws greater than 30 percent through-wall in depth can be detected using low frequency encoded phased-array ultrasonic inspections.

The NRC, using NUREG/CR–6933 and NUREG/CR–7122, has determined that inspections of CASS materials are very challenging, and sufficient technical basis exists to condition the code case to bring the code case into agreement with the NUREG/CR reports. The NUREG/CR reports also show that CASS materials produce high levels of coherent noise. The noise signals can be confusing and mask flaw indications. Use of encoded inspection data allows the inspector to mitigate this problem through the ability to electronically manipulate the data, which allows for discrimination between coherent noise and flaw indications. The NRC finds that encoding CASS inspection data provides significant detection benefits. The NRC proposes to add a condition in § 50.55a(b)(2)(xxxvii)(A) to require the use of encoded data when utilizing N–824 for the examination of CASS components. The use of dual element phased-array search units showed the most promise in obtaining meaningful responses from flaws. The NRC proposes to add a condition in § 50.55a(b)(2)(xxxvii)(B) to require the use of dual, transmit-receive, refracted longitudinal wave, multi-element phased array search units when utilizing N–824 for the examination of CASS components. The optimum inspection frequencies for examining CASS components of various thicknesses as described in NUREG/CR–6933 and NUREG/CR–7122 are reflected in proposed conditions § 50.55a(b)(2)(xxxvii)(C) and (D). The NRC proposes to add a condition in § 50.55a(b)(2)(xxxvii)(C) to require that ultrasonic examinations performed to implement ASME BPV Code Case N–824 on piping less than or equal to 1.6 inches thick shall use a phased array search unit with a center frequency of 500 kHz to 1 MHz. The NRC proposes to add a condition in § 50.55a(b)(2)(xxxvii)(D) to require that ultrasonic examinations performed to implement ASME BPV Code Case N–824 on piping greater than 1.6 inches thick shall use a phased array search unit with a center frequency of 500 kHz. As NUREG/CR–6933 shows that the grain structure of CASS can reduce the effectiveness of some inspection angles, the NRC finds sufficient technical basis to condition the code case for the use of phased-array ultrasound using angles from 30 to 70 degrees with a maximum increment of 5 degrees. The NRC proposes to add a condition in § 50.55a(b)(2)(xxxvii)(E) to require that ultrasonic examinations performed to implement ASME BPV Code Case N–824 shall use a phased array search unit which produces angles from 30 to 70 degrees with a maximum increment of 5 degrees.

Obtaining effective examination results of CASS components requires using lower frequencies and larger transducers than are typically used for ultrasonic inspections of piping welds and would require licensees to modify their inspection procedures. The NRC recognizes that requiring the use of spatial encoding will limit the full implementation of ASME BPV Code Case N–824, as spatial encoding is not practical for many weld configurations.

The recent advances in inspection technology are driving renewed work at ASME Code meetings to produce Section XI, Appendix VIII, Supplement 9 to resolve the CASS inspection issue, but it will be years before these code updates will be published, as well as additional time to qualify and approve procedures for use in the field. Until then, licensees would still use the requirements of ASME Code Section XI, Appendix III, Supplement 1 which states that inspection of CASS materials meeting the ASME Code requirements may not be meaningful. Consequently, less effective examinations would continue to be used in the field, and more relief requests would be generated between now and the implementation of Supplement 9.

At this time, the use of ASME BPV Code Case N–824, as conditioned, is the most effective known method for adequately examining welds with one or more CASS components. With the use of ASME BPV Code Case N–824, as conditioned, licensees will be able to take full credit for completion of the § 50.55a required inservice volumetric inspection of welds involving CASS components. The implementation of ASME BPV Code Case N–824, as conditioned, will have the dual effect of improving the rigor of required volumetric inspections and reducing the number of uninspectable Class 1 and Class 2 pressure retaining welds.

The NRC concludes that incorporation of ASME BPV Code Case N–824, as conditioned by § 50.55a(b)(2)(xxxvii)(A) through (E), will significantly improve the flaw detection capability of ultrasonic inspection of CASS components until Supplement 9 is implemented, thereby providing reasonable assurance of leak tightness and structural integrity. Additionally, it will reduce the regulatory burden on licensees and allow licensees to submit fewer relief requests for welds in CASS materials.

ASME OM Code Case OMN–20

10 CFR 50.55a(b)(3)(x) OM Condition: ASME OM Code Case OMN–20

The NRC proposes to add new paragraph § 50.55a(b)(3)(x) to allow the use of ASME OM Code Case OMN–20, ''Inservice Test Frequency,'' which provides inservice test frequencies for pumps and valves which a licensee may voluntarily use in place of the frequencies specified in the 2012 Edition of the ASME OM Code. Paragraph § 50.55a(a)(1)(iii)(E) would be added to incorporate ASME OM Code Case OMN–20 by reference into § 50.55a. Surveillance Requirement (SR) 3.0.3 from Technical Specification (TS) 5.5.6, ''Inservice Testing Program,''

allows licensees to apply a delay period before declaring the SR for TS equipment ''not met'' when the licensee inadvertently exceeds or misses the time limit for performing TS surveillance. Licensees have been applying SR 3.0.3 to inservice tests. The NRC has determined that licensees cannot use TS 5.5.6 to apply SR 3.0.3 to inservice tests under § 50.55a(f) that are not associated with a TS surveillance. To invoke SR 3.0.3, the licensee shall first discover that a TS surveillance was not performed at its specified frequency. Therefore, the delay period that SR 3.0.3 provides does not apply to non-TS support components tested under § 50.55a(f). The ASME OM Code does not provide for any inservice test frequency reductions or extensions. In order to provide inservice test frequency reductions or extensions that can no longer be provided by SR 3.0.3 from TS 5.5.6, the ASME has developed OM Code Case OMN–20. The NRC has reviewed OM Code Case OMN–20 and has found it acceptable for use. The NRC intends to include OM Code Case OMN–20 in the next revision of RG 1.192, at which time a conforming change will be made to delete both this paragraph and § 50.55a(a)(1)(iii)(E).

IV. Section-by-Section Analysis

The NRC proposes to remove the revision number of the three RGs currently approved by the Office of the Federal Register for incorporation by reference throughout the substantive provisions of § 50.55a. The revision numbers for the RGs approved for incorporation by reference would be retained in paragraph (a) of § 50.55a, where the RGs are listed by full title, including revision number. That paragraph identifies the specific materials which the Office of the Federal Register has approved for incorporation by reference, as required by Office of the Federal Register requirements in 1 CFR 51.9. No substantive change is intended by the NRC by this proposed amendment. Readers would need to refer to paragraph (a) of § 50.55a to determine the specific revision of the relevant RG which is approved for incorporation by reference by Office of the Federal Register.

10 CFR 50.55a(a) Documents Approved for Incorporation by Reference

The NRC proposes to revise the incorporation by reference language to update the contact information for the NRC Technical Library.

10 CFR 50.55a(a)(1)(i) ASME Boiler and Pressure Vessel Code, Section III

The NRC proposes to revise § 50.55a(a)(1)(i) to clarify that Section III Nonmandatory Appendices are not incorporated by reference. This language was originally added in a final rule published on June 21, 2011 (76 FR 36232); however, it was omitted from the final rule published on November 5, 2014 (79 FR 65776). The NRC is correcting the omission by inserting ''(excluding Nonmandatory Appendices)'' in 10 CFR 50.55a(a)(1)(i).

10 CFR 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 add ASME BPV Code, Section III 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition.

10 CFR 50.55a(a)(1)(ii) ASME Boiler and Pressure Vessel Code, Section XI

The NRC proposes to revise § 50.55a(a)(1)(ii) to include a minor editorial change and to clarify that Nonmandatory Appendix U is not incorporated by reference.

10 CFR 50.55a(a)(1)(ii)(C) ''Rules for Inservice Inspection of Nuclear Power Plant Components—Division 1''

The NRC proposes to revise § 50.55a(a)(1)(ii)(C) to add ASME BPV Code, Section XI 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition.

10 CFR 50.55a(a)(1)(iii)(B) ASME BPV Code Case N–729–4

The NRC proposes to revise § 50.55a(a)(1)(iii)(B) to add the title ''ASME BPV Code Case N–729–4,'' and include information for the standard that is being incorporated by reference.

10 CFR 50.55a(a)(1)(iii)(C) ASME BPV Code Case N–770–2

The NRC proposes to revise § 50.55a(a)(1)(iii)(C) to add the title ''ASME BPV Code Case N–770–2,'' and include information for the standard that is being incorporated by reference.

10 CFR 50.55a(a)(1)(iii)(D) ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(a)(1)(iii)(D) to add the title ''ASME BPV Code Case N–824,'' and include information for the standard that is being incorporated by reference.

10 CFR 50.55a(a)(1)(iii)(E) ASME OM Code Case OMN–20

The NRC proposes to add § 50.55a(a)(1)(iii)(E) to add the title ''ASME OM Code Case OMN–20,'' and include information for the standard that is being incorporated by reference.

10 CFR 50.55a(a)(1)(iv) ASME Operation and Maintenance Code

The NRC proposes to revise § 50.55a(a)(1)(iv) to correct the title of the OM Code.

10 CFR 50.55a(a)(1)(iv)(B) ''Operation and Maintenance of Nuclear Power Plants, Division 1: Section IST Rules for Inservice Testing of Light-Water Reactor Power Plants''

The NRC proposes to revise § 50.55a(a)(1)(iv)(B) to add ASME OM Code 2009 Edition and 2011 Addenda.

10 CFR 50.55a(a)(1)(iv)(C) ''Operation and Maintenance of Nuclear Power Plants, Division 1: OM Code: Section IST''

The NRC proposes to add § 50.55a(a)(1)(iv)(C) to add ASME OM Code 2012 Edition.

10 CFR 50.55a(a)(1)(v) ASME Quality Assurance Requirements

The NRC proposes to add § 50.55a(a)(1)(v) to add the title ''ASME Quality Assurance Requirements'' for ASME NQA–1 Code as part of NRC titling convention and include information regarding NQA–1 standards.

10 CFR 50.55a(b) Use and Conditions on the Use of Standards

The NRC proposes to revise § 50.55a(b) to correct the title of the OM Code.

10 CFR 50.55a(b)(1) Conditions on ASME BPV Code Section III

The NRC proposes to revise § 50.55a(b)(1) to reflect the latest edition incorporated by reference, the 2013 Edition.

10 CFR 50.55a(b)(1)(ii) Section III Condition: Weld Leg Dimensions

The NRC proposes to revise § 50.55a(b)(1)(ii) to clarify rule language and add Table 1, which clarifies prohibited Section III provisions in tabular form for welds with leg size less than 1.09 t_n.

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

The NRC proposes to revise § 50.55a(b)(1)(iv) to clarify that it allows, but does not require, applicants and licensees to use the 2008 Edition through the 2009–1a Addenda of NQA–1 when applying the 2010 Edition and later editions of the ASME BPV Code, Section III, up to the 2011 Addenda.

Applicants and licensees are required to meet appendix B of 10 CFR part 50, and NQA–1 is one way of meeting portions of appendix B. An applicant or licensee may select any version of NQA–1 that has been approved for use in § 50.55a, but they must also use the administrative, quality, and technical provisions contained in the version of NCA–4000 referencing that Edition or Addenda of NQA–1 selected by the applicant or licensee.

NQA–1 provides a method for establishing and implementing a QA program for the design and construction of nuclear power plants and fuel reprocessing plants; however, NQA–1, as modified and supplemented by NCA–4000, does not meet all of the requirements of appendix B to 10 CFR part 50. To meet the requirements of appendix B, when using NQA–1 during the design and construction phase, applicants and licensees must address in their quality program description those areas where NQA–1 is insufficient to meet appendix B. Regulatory Guide 1.28, ''Quality Assurance Criteria (Design and Construction),'' provides additional guidance and regulatory positions on how to meet appendix B when using NQA–1.

Section 50.55a(b)(1)(iv) clarifies that applicants and licensees are required to meet appendix B to 10 CFR part 50 and that the commitments contained in their QA program descriptions that are more stringent than those contained in NQA–1 or are not addressed in NQA–1 apply to Section III activities.

10 CFR 50.55a(b)(1)(vii) Section III Condition: Capacity Certification and Demonstration of Function of Incompressible-Fluid Pressure-Relief Valves

The NRC proposes to revise § 50.55a(b)(1)(vii) to reflect the latest edition incorporated by reference, the 2013 Edition.

10 CFR 50.55a(b)(1)(viii) Section III Condition: Use of ASME Certification Marks

The NRC proposes to add § 50.55a(b)(1)(viii) to allow licensees to use either the ASME BPV Code Symbol Stamp or ASME Certification Mark with the appropriate certification designator and class designator as specified in the 2013 Edition through the latest edition and addenda incorporated by reference in 10 CFR 50.55a.

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

The NRC proposes to revise § 50.55a(b)(2) to reflect the latest edition incorporated by reference, the 2013 Edition, and to clarify that Nonmandatory Appendix U is not incorporated by reference.

10 CFR 50.55a(b)(2)(vi) Section XI Condition: Effective Edition and Addenda of Subsection IWE and Subsection IWL

The NRC proposes to revise § 50.55a(b)(2)(vi) to clarify that the provision applies only to the class of licensees of operating reactors that were required by previous versions of § 50.55a to develop and implement a containment inservice inspection program in accordance with Subsection IWE and Subsection IWL, and complete an expedited examination of containment during the 5-year period from September 9, 1996 to September 9, 2001.

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

The NRC proposes to revise § 50.55a(b)(2)(viii) by removing the condition for using the 2009 Addenda up to and including the 2013 Edition of Subsection IWL requiring compliance with § 50.55a(b)(2)(viii)(E).

10 CFR 50.55a(b)(2)(viii)(H) Concrete Containment Examinations: Eighth Provision

The NRC proposes to add § 50.55a(b)(2)(viii)(H) to require licensees to provide the applicable information specified in paragraphs (b)(2)(viii)(E)(*1*), (b)(2)(viii)(E)(*2*), and (b)(2)(viii)(E)(*3*) of this section in the ISI Summary Report required by IWA–6000 for each inaccessible concrete surface area evaluated under the new code provision IWL–2512 of the 2009 Addenda up to and including the 2013 Edition.

10 CFR 50.55a(b)(2)(viii)(I) Concrete Containment Examinations: Ninth Provision

The NRC proposes to add § 50.55a(b)(2)(viii)(I) containing a new condition requiring the technical evaluation required by IWL–2512(b) of the 2009 Addenda up to and including the 2013 Edition of inaccessible below-grade concrete surfaces exposed to foundation soil, backfill, or groundwater be performed at periodic intervals not to exceed 5 years. In addition, the licensee must examine representative samples of the exposed portions of the below-grade concrete, when such below-grade concrete is excavated for any reason. The proposed condition would apply only to holders of renewed licenses under 10 CFR part 54 during the period of extended operation (*i.e.,* beyond the expiration date of the original 40-year license) of a renewed license when using IWL–2512(b) of the 2007 Edition with 2009 Addenda through the 2013 Edition.

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

The NRC proposes to revise § 50.55a(b)(2)(ix) to continue to apply the existing conditions in § 50.55a(b)(2)(ix)(A)(*2*), § 50.55a(b)(2)(ix)(B) and § 50.55a(b)(2)(ix)(J) with respect to the metal containment examination requirements in Subsection IWE to the 2009 Addenda up to and including the 2013 Edition and to make minor editorial corrections.

10 CFR 50.55a(b)(2)(ix)(D) Metal Containment Examinations: Fourth Provision

The NRC proposes to revise the rule text in § 50.55a(b)(2)(ix)(D) to improve clarity. Paragraphs § 50.55a(b)(2)(ix)(D) and § 50.55a(b)(2)(ix)(D)(1) are combined. The information required to be included in the ISI Summary report is now all on the same paragraph level. No substantive change to the requirements is intended by this revision.

10 CFR 50.55a(b)(2)(x) Section XI Condition: Quality Assurance

The NRC proposes to revise § 50.55a(b)(2)(x) to clarify that it allows, but does not require, licensees to use the 1994 or the 2008 Edition through the 2009–1a Addenda of NQA–1 when applying the 2009 Addenda and later editions and addenda of the ASME BPV Code, Section XI, up to the 2013 Edition. Licensees are required to meet appendix B of 10 CFR part 50, and NQA–1 is one way of meeting portions of appendix B. A licensee may select any version of NQA–1 that has been approved for use in § 50.55a.

NQA–1 provides a method for establishing and implementing a QA program for the design and construction of nuclear power plants and fuel reprocessing plants; however, NQA–1 does not meet all of the requirements of appendix B to 10 CFR part 50. To meet the requirements of appendix B, when using NQA–1 during inservice inspection phase, licensees must address in their quality program description those areas where NQA–1 is insufficient to meet appendix B. Additional guidance and regulatory positions on how to meet appendix B when using NQA–1 is provided in RG 1.28, ''Quality Assurance Criteria (Design and Construction).''

Section 50.55a(b)(2)(x) clarifies that licensees are required to meet appendix B to 10 CFR part 50 and that the commitments contained in their QA program descriptions that are more stringent than those contained in NQA–1 or are not addressed in NQA–1 apply to Section XI activities.

10 CFR 50.55a(b)(2)(xviii)(D) NDE Personnel Certification: Fourth Provision

The NRC proposes to add § 50.55a(b)(2)(xviii)(D) to provide a new condition prohibiting the use of Appendix VII and subarticle VIII–2200 of the 2011 Addenda and 2013 Edition of Section XI of the ASME BPV Code. Licensees would be required to implement Appendix VII and subarticle VIII–2200 of the 2010 Edition of Section XI.

10 CFR 50.55a(b)(2)(xxi)(A) Table IWB–2500–1 Examination Requirements: First Provision

The NRC proposes to revise § 50.55a(b)(2)(xxi)(A) to modify the standard for visual magnification resolution sensitivity and contrast for visual examinations performed on Examination Category B–D components instead of ultrasonic examinations. A visual examination with magnification that has a resolution sensitivity to resolve 0.044 inch (1.1 mm) lower case characters without an ascender or descender (*e.g.,* a, e, n, v), utilizing the allowable flaw length criteria in Table IWB–3512–1, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, with a limiting assumption on the flaw aspect ratio (*i.e.,* a/l = 0.5), may be performed instead of an ultrasonic examination. This revision removes a requirement that was in addition to ASME BPV Code that required 1-mil wires to be used in licensees' Sensitivity, Resolution and Contrast Standard targets.

10 CFR 50.55a(b)(2)(xxx) Section XI Condition: Steam Generator Preservice Examinations

The NRC proposes to add § 50.55a(b)(2)(xxx) to provide a new condition requiring that instead of the preservice inspection requirements of Section XI, IWB–2200(c), a full length examination of 100 percent of the tubing in each newly installed steam generator shall be performed prior to plant startup. These inspections shall be performed with the objective of finding the types of flaws that may potentially be present in the tubes and that may potentially occur during operation.

10 CFR 50.55a(b)(2)(xxxi) Section XI Condition: Mechanical Clamping Devices

The NRC proposes to add § 50.55a(b)(2)(xxxi) to provide a new condition prohibiting the use of mechanical clamping devices in accordance with IWA–4131.1(c) in the 2010 Edition and IWA–4131.1(d) in the 2011 Addenda through 2013 Edition on small item Class 1 piping and portions of a piping system that forms the containment boundary.

10 CFR 50.55a(b)(2)(xxxii) Section XI Condition: Summary Report Submittal

The NRC proposes to add § 50.55a(b)(2)(xxxii) to provide a new condition requiring licensees using the 2010 Edition or later editions and addenda of Section XI to follow the requirements of IWA–6240 of the 2009 addenda of Section XI for the submittal of Preservice and Inservice Summary Reports.

10 CFR 50.55a(b)(2)(xxxiii) Section XI Condition: Risk-Informed Allowable Pressure

The NRC proposes to add § 50.55a(b)(2)(xxxiii) to provide a new condition to prohibit the use of Appendix G Paragraph G–2216 in the 2011 Addenda and later editions and addenda of the ASME BPV Code, Section XI.

10 CFR 50.55a(b)(2)(xxxiv) Section XI Condition: Disposition of Flaws in Class 3 Components

The NRC proposes to add § 50.55a(b)(2)(xxxiv) to provide a new condition to require that when using the 2013 Edition of the ASME BPV Code, Section XI, the licensee shall use the acceptance standards of IWD–3510 for the disposition of flaws in Category D–A components (*i.e.,* welded attachments for vessels, piping, pumps, and valves).

10 CFR 50.55a(b)(2)(xxxv) Section XI Condition: Use of RT_{T0} in the K_{Ia} and K_{Ic} Equations

The NRC proposes to add § 50.55a(b)(2)(xxxv) to provide a new condition to specify that when licensees use ASME BPV Code, Section XI, 2013 Edition Appendix A paragraph A–4200, if T_0 is available, then RT_{T0} may be used in place of RT_{NDT} for applications using the K_{Ic} equation and the associated K_{Ic} curve, but not for applications using the K_{Ia} equation and the associated K_{Ia} curve.

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

The NRC proposes to add § 50.55a(b)(2)(xxxvi) to provide a new condition requiring licensees using ASME BPV Code, Section XI, 2013 Edition, Appendix A, paragraph A–4400, to obtain NRC approval before using irradiated T_0 and the associated RT_{T0} in establishing fracture toughness of irradiated materials.

10 CFR 50.55a(b)(2)(xxxvii) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii) with subparagraphs (A) through (E) to provide a new provision that allows licensees to implement ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1,'' as conditioned by subparagraphs (A) through (E).

10 CFR 50.55a(b)(2)(xxxvii)(A) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii)(A) to add a new condition that requires ultrasonic examinations performed to implement ASME BPV Code Case N–824 to be spatially encoded.

10 CFR 50.55a(b)(2)(xxxvii)(B) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii)(B) to add a new condition that requires that ultrasonic examinations performed to implement ASME BPV Code Case N–824 shall use dual, transmit-receive, refracted longitudinal wave, multi-element phased array search units instead of the requirements of Paragraph 1(c)(1)(–a) of N–824.

10 CFR 50.55a(b)(2)(xxxvii)(C) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii)(C) to add a new condition that requires that ultrasonic examinations performed to implement ASME BPV Code Case N–824 on piping less than or equal to 1.6 inches thick shall use a phased array search unit with a center frequency of 500 kHz to 1 MHz instead of the requirements of Paragraph 1(c)(1)(–c)(–1).

10 CFR 50.55a(b)(2)(xxxvii)(D) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii)(D) to add a new

condition that requires that ultrasonic examinations performed to implement ASME BPV Code Case N–824 on piping greater than 1.6 inches thick shall use a phased array search unit with a center frequency of 500 kHz instead of the requirements of Paragraph 1(c)(1)(–c)(–2).

10 CFR 50.55a(b)(2)(xxxvii)(E) Section XI Condition: ASME BPV Code Case N–824

The NRC proposes to add § 50.55a(b)(2)(xxxvii)(E) to add a new condition that requires that ultrasonic examinations performed to implement ASME BPV Code Case N–824 shall use a phased array search unit which produces angles from 30 to 70 degrees with a maximum increment of 5 degrees instead of the requirements of Paragraph 1(c)(1)(–d).

10 CFR 50.55a(b)(3) Conditions on ASME OM Code

The NRC proposes to revise § 50.55a(b)(3) to require that the 2012 Edition of the ASME OM Code be used during the initial 120-month inservice test interval under § 50.55a(f)(4)(i) and during mandatory 120-month IST program updates under § 50.55a(f)(4)(ii). The proposed revision would also allow users to voluntarily update their IST programs to the 2009 Edition, 2011 Addenda, or 2012 Edition of the ASME OM Code (with the exceptions and conditions specified in this notice) under § 50.55a(f)(4)(iv).

10 CFR 50.55a(b)(3)(i) OM Condition: Quality Assurance

The NRC proposes to revise § 50.55a(b)(3)(i) to allow licensees to use the 1983 Edition through the 1994 Edition, 2008 Edition, and 2009–1a Addenda of NQA–1 when using the 1995 Edition through the 2012 Edition of the ASME OM Code. Licensees are required to meet appendix B to 10 CFR part 50, and NQA–1 is one way of meeting portions of appendix B.

NQA–1 provides a method for establishing and implementing a QA program for the design and construction of nuclear power plants and fuel reprocessing plants; however, NQA–1 does not meet all of the requirements of appendix B to 10 CFR part 50. To meet the requirements of appendix B, licensees must address in their quality program description those areas where NQA–1 is insufficient to meet appendix B. Regulatory Guide 1.28, ''Quality Assurance Criteria (Design and Construction),'' provides additional guidance on how to meet appendix B when using NQA–1.

Paragraph 50.55a(b)(3)(i) clarifies that licensees are required to meet appendix B to 10 CFR part 50 and that the commitments contained in their QA program descriptions that are more stringent than those contained in NQA–1 or are not addressed in NQA–1 apply to OM Code activities.

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

The NRC proposes to revise § 50.55a(b)(3)(ii) to reflect Appendix III, ''Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants,'' in the ASME OM Code, 2009 Edition, 2011 Addenda, and 2012 Edition.

10 CFR 50.55a(b)(3)(ii)(A) MOV Diagnostic Test Interval

The NRC proposes to add § 50.55a(b)(3)(ii)(A) to require that licensees evaluate the adequacy of the diagnostic test interval for each MOV and adjust the interval as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of Appendix III of the ASME OM Code.

10 CFR 50.55a(b)(3)(ii)(B) MOV Testing Impact on Risk

The NRC proposes to add § 50.55a(b)(3)(ii)(B) to require that licensees ensure that the potential increase in core damage frequency and large early release frequency associated with the extension is acceptably small when extending exercise test intervals for high risk MOVs beyond a quarterly frequency.

10 CFR 50.55a(b)(3)(ii)(C) MOV Risk Categorization

The NRC proposes to add § 50.55a(b)(3)(ii)(C) to require, when applying Appendix III to the ASME OM Code, that licensees categorize MOVs according to their safety significance using the methodology described in ASME OM Code Case OMN–3 subject to the conditions discussed in RG 1.192, or using an MOV risk ranking methodology accepted by the NRC on a plant-specific or industry-wide basis in accordance with the conditions in the applicable safety evaluation.

10 CFR 50.55a(b)(3)(ii)(D) MOV Stroke Time

The NRC proposes to add § 50.55a(b)(3)(ii)(D) to require, when applying Paragraph III–3600, ''MOV Exercising Requirements,'' of Appendix III to the OM Code, licensees shall verify that the stroke time of the MOV satisfies the assumptions in the plant safety analyses.

10 CFR 50.55a(b)(3)(iii) OM Condition: New Reactors

The NRC proposes to add § 50.55a(b)(3)(iii) to specify that, in addition to complying with the provisions in the OM Code as required with the conditions specified in § 50.55a(b)(3), holders of operating licenses for nuclear power reactors that received construction permits under this part on or after the date 12 months after the effective date of this rulemaking and holders of COLs issued under 10 CFR part 52, whose initial fuel loading occurs on or after the date 12 months after the effective date of this rulemaking, shall also comply with specified conditions, as applicable.

10 CFR 50.55a(b)(3)(iii)(A) Power-Operated Valves

The NRC proposes to add § 50.55a(b)(3)(iii)(A) to require that licensees subject to § 50.55a(b)(3)(iii) develop a program to periodically verify the capability of power-operated valves (POVs) to perform their design-basis safety functions.

10 CFR 50.55a(b)(3)(iii)(B) Check Valves

The NRC proposes to add § 50.55a(b)(3)(iii)(B) to require that licensees subject to § 50.55a(b)(3)(iii) perform bi-directional testing of check valves within the IST program where practicable.

10 CFR 50.55a(b)(3)(iii)(C) Flow-Induced Vibration

The NRC proposes to add § 50.55a(b)(3)(iii)(C) to require that licensees subject to § 50.55a(b)(3)(iii) monitor flow-induced vibration (FIV) from hydrodynamic loads and acoustic resonance during preservice testing and inservice testing to identify potential adverse flow effects that might impact components within the scope of the IST program.

10 CFR 50.55a(b)(3)(iii)(D) High Risk Non-Safety Systems

The NRC proposes to add § 50.55a(b)(3)(iii)(D) to require that licensees subject to § 50.55a(b)(3)(iii) establish a program to assess the operational readiness of pumps, valves, and dynamic restraints within the scope of the Regulatory Treatment of Non-Safety Systems (RTNSS) for applicable reactor designs. The proposed rule language refers to such components using the term, ''high risk non-safety systems.''

10 CFR 50.55a(b)(3)(iv) OM Condition: Check Valves (Appendix II)

The NRC proposes to revise § 50.55a(b)(3)(iv) to specify that Appendix II in the 2003 Addenda through the 2012 Edition of the OM Code is acceptable for use without conditions with the clarifications that (1) the maximum test interval allowed by Appendix II for individual check valves in a group of two valves or more must be supported by periodic testing of a sample of check valves in the group during the allowed interval and (2) the periodic testing plan must be designed to test each valve of a group at approximate equal intervals not to exceed the maximum requirement interval. The conditions currently specified for the use of Appendix II, 1995 Edition with the 1996 and 1997 Addenda, and 1998 Edition through the 2002 Addenda, of the OM Code remain the same in this proposed rule.

10 CFR 50.55a(b)(3)(vii) OM Condition: Subsection ISTB

The NRC proposes to add § 50.55a(b)(3)(vii) to prohibit the use of Subsection ISTB in the 2011 Addenda to the ASME OM Code.

10 CFR 50.55a(b)(3)(viii) OM Condition: Subsection ISTE

The NRC proposes to add § 50.55a(b)(3)(viii) to specify that licensees who wish to implement Subsection ISTE, ''Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants,'' of the ASME OM Code, 2009 Edition, 2011 Addenda, and 2012 Edition, must first request and obtain NRC approval in accordance with § 50.55a(z) to apply Subsection ISTE on a plant-specific basis as a risk-informed alternative to the applicable IST requirements in the ASME OM Code.

10 CFR 50.55a(b)(3)(ix) OM Condition: Subsection ISTF

The NRC proposes to add § 50.55a(b)(3)(ix) to specify that licensees applying Subsection ISTF, ''Inservice Testing of Pumps in Light-Water Reactor Nuclear Power Plants—Post-2000 Plants,'' in the 2012 Edition of the OM Code shall satisfy the requirements of Mandatory Appendix V, ''Pump Periodic Verification Test Program,'' of the OM Code, 2012 Edition. The proposed paragraph will also state that Subsection ISTF, 2011 Addenda, is not acceptable for use.

10 CFR 50.55a(b)(3)(x) OM Condition: ASME OM Code Case OMN–20

The NRC proposes to add § 50.55a(b)(3)(x) to allow licensees to implement ASME OM Code Case OMN–20, ''Inservice Test Frequency,'' in the ASME OM Code, 2012 Edition.

10 CFR 50.55a(b)(3)(xi) OM Condition: Valve Position Indication

The NRC proposes to add § 50.55a(b)(3)(xi) to require that licensees supplement the ASME OM Code provisions in Subsection ISTC–3700, ''Position Verification Testing,'' as necessary to verify that valve operation is accurately indicated. The ASME OM Code, Subsection ISTC–3700 requires valves with remote position indicators shall be observed locally at least once every 2 years to verify that valve operation is accurately indicated.

10 CFR 50.55a(f): Inservice Testing Requirements

The NRC proposes to revise § 50.55a(f) to clarify that the ASME OM Code includes provisions for preservice testing of components as part of its overall provisions for IST programs.

10 CFR 50.55a(f)(3)(iii)(A) Class 1 Pumps and Valves: First Provision

The NRC proposes to revise § 50.55a(f)(3)(iii)(A) to state that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(3)(iii)(B) Class 1 Pumps and Valves: Second Provision

The NRC proposes to revise § 50.55a(f)(3)(iii)(B) to ensure that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(3)(iv)(A) Class 2 and 3 Pumps and Valves: First Provision

The NRC proposes to revise § 50.55a(f)(3)(iv)(A) to ensure that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code and not covered by paragraph (f)(3)(iii)(A) for Class 1 pumps and valves. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(3)(iv)(B) Class 2 and 3 Pumps and Valves: Second Provision

The NRC proposes to revise § 50.55a(f)(3)(iv)(B) to ensure that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code and not covered by paragraph (f)(3)(iii)(B) for Class 1 pumps and valves. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME Code and in SRP Section 3.9.6.

10 CFR 50.55a(f)(4) Inservice Testing Standards Requirement for Operating Plants

The NRC proposes to revise § 50.55a(f)(4) to ensure that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME Code and in SRP Section 3.9.6.

10 CFR 50.55a(g) Inservice and Preservice Inspection Requirements

The NRC proposes to add new paragraphs (g)(2)(i), (g)(2)(ii), and (g)(2)(iii) and to revise paragraphs (g), (g)(2), (g)(3), (g)(3)(i), (g)(3)(ii), and (g)(3)(v) to distinguish the requirements for accessibility and preservice examination from those for inservice inspection in § 50.55a(g). No substantive change to the requirements is intended by these revisions.

10 CFR 50.55a(g)(6)(ii)(D)(1) Implementation

The NRC proposes to revise § 50.55a(g)(6)(ii)(D)(*1*) to require licensees to implement an augmented inservice inspection program for the examination of the RPV upper head penetrations meeting ASME BPV Code Case N–729–4 instead of the previously approved requirements to use ASME BPV Code Case N–729–1, as conditioned by the NRC.

10 CFR 50.55a(g)(6)(ii)(D)(2) Through (5) of the Current Regulation

The NRC proposes to remove the conditions in existing § 50.55a(g)(6)(ii)(D)(*2*) through (*5*) of the current regulation, inasmuch as these conditions have been included in or reflected in other Code requirements. In their place, the NRC proposes to adopt new conditions in § 50.55a(g)(6)(ii)(D)(*2*) through (*4*).

10 CFR 50.55a(g)(6)(ii)(D)(2) Appendix I Use

The NRC proposes to revise § 50.55a(g)(6)(ii)(D)(*2*) to require NRC approval prior to implementing Appendix I of ASME BPV Code Case N–729–4. This requirement is currently located in § 50.55a(g)(6)(ii)(D)(*6*) for implementation of N–729–1.

10 CFR 50.55a(g)(6)(ii)(D)(3) Bare Metal Visual Frequency

The NRC proposes to revise § 50.55a(g)(6)(ii)(D)(*3*) to add a new condition which requires cold head plants (EDY<8) without PWSCC flaws to perform a bare metal visual examination (VE) each outage a volumetric exam is not performed and allows these plants to extend the bare metal visual inspection frequency from once each refueling outage, as stated in Table 1 of N–729–4, to once every 5 years only if the licensee performed a wetted surface examination of all of the partial penetration welds during the previous volumetric examination. In addition, this new condition clarifies that a bare metal visual examination is not required during refueling outages when a volumetric or surface examination is performed of the partial penetration welds. The condition that is in the current § 50.55a(g)(6)(ii)(D)(*3*) was incorporated into N–729–4 by the ASME Code committees.

10 CFR 50.55a(g)(6)(ii)(D)(4) Surface Exam Acceptance Criteria

The NRC proposes to revise § 50.55a(g)(6)(ii)(D)(*4*) to add a new condition which clarifies that rounded indications found by surface examinations of the partial-penetration or associated fillet welds in accordance with N–729–4 must meet the acceptance criteria for surface examinations of paragraph NB–5352 of ASME Section III of the current edition and addenda for the licensee's ongoing 10-year inservice inspection interval. The condition that is in the current § 50.55a(g)(6)(ii)(D)(*4*) was incorporated into N–729–4 by the ASME Code committees.

10 CFR 50.55a(g)(6)(ii)(F)(1) Implementation

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*1*) to require licensees to implement an augmented inservice inspection program for the examination of ASME Class 1 piping and nozzle butt welds meeting ASME BPV Code Case N–770–2 instead of the previously approved ASME BPV Code Case N–770–1.

Furthermore, the NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*1*) to update the date of applicability for pressurized water reactors, to note the change to implement ASME BPV Code Case N–770–2 instead of N–770–1, and to reflect the number of conditions which must be applied.

10 CFR 50.55a(g)(6)(ii)(F)(2) Categorization

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*2*) to clarify the requirements for licensees to establish the initial categorization of each weld and modify the wording to reflect the ASME BPV Code Case N–770–2 change in the inspection item category for full structural weld overlays. Additionally, the NRC proposes to add a sentence which clarifies the NRC position that paragraph -1100(e) of ASME BPV Code Case N–770–2 shall not be used to exempt welds that rely on Alloy 82/182 for structural integrity from any requirement of § 50.55a(g)(6)(ii)(F).

10 CFR 50.55a(g)(6)(ii)(F)(3) Baseline Examinations

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*3*) to clarify the current requirement in this paragraph to complete baseline examinations. Additionally, this condition clarifies that the examination coverage requirements, for a licensee to count previous inspections as baseline examinations, are the same examination coverage requirements described in paragraphs -2500(a) or -2500(b) of ASME BPV Code Case N–770–2.

10 CFR 50.55a(g)(6)(ii)(F)(4) Examination Coverage

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*4*) to clarify that licensees are required to ensure greater than 90 percent volumetric examination coverage is obtained for circumferential flaws, to continue the restriction on the licensee's use of paragraph –2500(c) and to continue the restriction that the use of new paragraph –2500(d) of ASME BPV Code Case N–770–2 is not allowed without prior NRC review and approval in accordance with § 50.55a(z), as it would permit a reduction in volumetric examination coverage for circumferential flaws.

10 CFR 50.55a(g)(6)(ii)(F)(5) Inlay/Onlay Inspection Frequency

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*5*) to add explanatory heading and to make minor editorial corrections.

10 CFR 50.55a(g)(6)(ii)(F)(6) Reporting Requirements

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*6*) to add explanatory heading.

10 CFR 50.55a(g)(6)(ii)(F)(7) Defining ''t''

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*7*) to add explanatory heading.

10 CFR 50.55a(g)(6)(ii)(F)(8) Optimized Weld Overlay Examination

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*8*) to continue the current condition located in § 50.55a(g)(6)(ii)(F)(*9*) which requires that the initial examination of optimized weld overlays (*i.e.,* Inspection Item C–2 of ASME BPV Code Case N–770–2) be performed between the third refueling outage and no later than 10 years after application of the overlay and delete the other current examination requirements for optimized weld overlay examination frequency, as these requirements were included in the revision from N–770–1 to N–770–2.

10 CFR 50.55a(g)(6)(ii)(F)(9) Deferral

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*9*) to modify the current condition to continue denial of the deferral of the initial inservice examination of uncracked welds mitigated by optimized weld overlays. These welds shall continue to have their initial inservice examinations as prescribed in N–770–1 within 10 years of the application of the optimized weld overlay and not allow deferral of this initial examination. Subsequent inservice examinations may be deferred as allowed by N–770–2. Additionally, the modified condition will delete the current condition on examination requirements for the deferral of welds mitigated by inlay, onlay, stress improvement and optimized weld overlay, as these requirements were, with one exception (*i.e.,* optimized weld overlay), included in the revision from N–770–1 to N–770–2.

10 CFR 50.55a(g)(6)(ii)(F)(10) Examination Technique

The NRC proposes to revise § 50.55a(g)(6)(ii)(F)(*10*) to modify the current condition to allow the previously prohibited alternate examination requirements of Note (b) of Figure 5(a) of ASME BPV Code Case N–770–1 and N–770–2 and the same requirements in Note 14(b) of Table 1 of ASME BPV Code Case N–770–2 for optimized weld overlays only if the full examination requirements of Note 14(a) of Table 1 of ASME BPV Code Case N–770–2 cannot be met.

10 CFR 50.55a(g)(6)(ii)(F)(11) Cast Stainless Steel

The NRC proposes to add § 50.55a(g)(6)(ii)(F)(*11*) to provide a new condition requiring licensees to establish a Section XI Appendix VIII qualification requirement for ultrasonic inspection of and through cast stainless steel to meet the examination requirements of paragraph -2500(a) of

ASME BPV Code Case N–770–2 by January 1, 2020.

10 CFR 50.55a(g)(6)(ii)(F)(12) Stress Improvement Inspection Coverage

The NRC proposes to add § 50.55a(g)(6)(ii)(F)(*12*) to provide a new condition that would allow licenses to implement a stress improvement mitigation technique for items containing cast stainless steel that would meet the requirements of Appendix I of ASME BPV Code Case N–770–2, if the required examination volume can be examined by Appendix VIII procedures to the maximum extent practical including 100 percent of the susceptible material volume.

10 CFR 50.55a(g)(6)(ii)(F)(13) Encoded Ultrasonic Examination

The NRC proposes to add § 50.55a(g)(6)(ii)(F)(*13*) to provide a new condition requiring licensees to perform encoded examinations of essentially 100 percent of the inspection surface area when required to perform volumetric examinations of all non-mitigated and cracked mitigated butt welds in accordance with N–770–2.

V. Generic Aging Lessons Learned Report

Background

In December 2010, the NRC issued ''Generic Aging Lessons Learned (GALL) Report,'' NUREG–1801, Revision 2, for applicants to use in preparing their license renewal applications. The GALL Report provides aging management programs (AMPs) that the NRC staff has concluded are sufficient for aging management in accordance with the license renewal rule, as required in 10 CFR 54.21(a)(3). In addition, ''Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants,'' NUREG–1800, Revision 2 was issued in December 2010 to ensure the quality and uniformity of NRC staff reviews of license renewal applications and to present a well-defined basis on which the NRC staff evaluates the applicant's aging management programs 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, which describes the technical bases for the changes in Revision 2 of the GALL Report and Revision 2 of the SRP for review of license renewal applications.

Revision 2 of the GALL Report, in Sections XI.M1, XI.S1, XI.S2, and XI.S3, describes the evaluation and technical bases for determining the sufficiency of ASME BPV Code Subsections IWB, IWC, IWD, IWE, IWF, and IWL for managing aging during the period of extended operation. In addition, many other aging management programs 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, and IWL, as modified and limited by § 50.55a, were found to be acceptable editions and addenda for complying with the requirements of 10 CFR 54.21(a)(3), unless specifically noted in certain sections of the GALL Report. The GALL Report further states that the future **Federal Register** notices 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, and 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.

Evaluation With Respect to Aging Management

As part of this rulemaking, the NRC evaluated whether those AMPs in Revision 2 of the GALL Report which rely upon Subsections IWB, IWC, IWD, IWE, IWF, and IWL of Section XI in the editions and addenda of the ASME BPV Code incorporated by reference into § 50.55a, continue to be acceptable if the AMP relies upon the versions of these Subsections in the 2007 Edition with the 2009 Addenda through the 2013 Edition. The NRC finds that the 2007 Edition with the 2009 Addenda through the 2013 Edition of Section XI of the ASME BPV Code, Subsections IWB, IWC, IWD, IWE, IWF, and IWL, as subject to the conditions of this rule, 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. Accordingly, an applicant for license renewal may use, in its plant-specific license renewal application, Subsections IWB, IWC, IWD, IWE, IWF, and IWL of Section XI of the 2007 Edition with the 2009 Addenda through the 2013 Edition of the ASME BPV Code, as subject to the conditions in this rule, without additional justification. Similarly, a licensee approved for license renewal that relied on the GALL AMPs may use Subsections IWB, IWC, IWD, IWE, IWF, and IWL of Section XI of the 2007 Edition with the 2009 Addenda through the 2013 Edition of the ASME BPV Code. However, a licensee must assess and follow applicable NRC requirements with regard to changes to its licensing basis.

Some of the AMPs in the GALL 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 editions or addenda from the 2007 Edition with the 2009 Addenda through the 2013 Edition of Section XI of the ASME BPV Code are used to meet the requirements of 10 CFR 54.21(a)(3). The NRC staff evaluated the changes in the 2007 Edition with the 2009 Addenda through the 2013 Edition of Section XI of the ASME BPV Code to determine if the augmentations described in the GALL Report remain necessary; the NRC staff's evaluation has concluded that the augmentations described in the GALL Report are necessary to ensure adequate aging management. For example, Table IWB–2500–1, in the 2007 Edition with the 2009 Addenda of ASME BPV Code, Section XI, Subsection IWB, requires surface examination of ASME Code Class 1 branch pipe connection welds less than nominal pipe size (NPS) 4 under Examination Category B–J. However, the NRC staff finds that volumetric or opportunistic destructive examination rather than surface examination is necessary to adequately detect and manage the aging effect due to stress corrosion cracking or thermal, mechanical and vibratory loadings in the components for the period of extended operation. Therefore, GALL Report Section XI.M35, ''One-Time Inspection of ASME Code Class 1 Small-Bore Piping,'' includes the augmentation of the requirements in ASME BPV Code, Section XI, Subsection IWB to perform a one-time inspection of a sample of ASME Code Class 1 piping less than NPS 4 and greater than or equal to NPS 1 using volumetric or opportunistic destructive examination. The GALL Report addresses this augmentation to confirm that there is no need to manage age-related degradation through periodic volumetric inspections or that an existing AMP (for example, Water

Chemistry AMP) is effective to manage the aging effect due to stress corrosion cracking or thermal, mechanical and vibratory loadings for the period of extended operation. A license renewal applicant may either augment its AMPs as described in the GALL Report, or propose alternatives for the NRC to review as part of the applicant's plant-specific justification for its AMPs.

VI. Specific Request for Comments

The NRC requests specific comments on the following questions:

NRC Question 1. *NQA–1.* The NRC is considering removing the references to versions of NQA–1 older than the 1994 Edition in § 50.55a(b)(1)(iv), § 50.55a(b)(2)(x), and § 50.55a(b)(3)(i). The NRC requests public comment on whether any applicant or licensee is committed to, and is using, a version of NQA–1 older than the 1994 Edition, and if so, what version the applicant or licensee is using.

NRC Question 2. *ASME BPV Code Case N–824.* The NRC is proposing to make ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1,'' acceptable for use with conditions. The use of N–824, as conditioned, is considered a stop-gap improvement until ASME Section XI Appendix VIII Supplement 9 is developed and implemented. The NRC is considering whether ASME BPV Code Case N–824, as conditioned, should be mandatory because of the potential that licensees may continue to use less effective ASME Code Section XI Appendix III techniques for examinations of welds next to CASS material. Should ASME BPV Code Case N–824, as conditioned, be mandatory? What are the possible advantages and disadvantages of making N–824, as conditioned, mandatory?

VII. 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.

VIII. Voluntary Consensus Standards

The National Technology Transfer and Advancement Act of 1995, Public Law 104–113 (NTTAA), and implementing guidance in U.S. Office of Management and Budget (OMB) Circular A–119 (February 10, 1998), 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. The NTTAA requires Federal agencies to use industry consensus standards to the extent practical; it does not require Federal agencies to endorse a standard in its entirety. Neither the NTTAA nor Circular A–119 prohibit an agency from adopting a voluntary consensus standard while taking exception to specific portions of the standard, if those provisions are deemed to be ''inconsistent with applicable law or otherwise impractical.'' Furthermore, taking specific exceptions furthers the Congressional intent of Federal reliance on voluntary consensus standards because it allows the adoption of substantial portions of consensus standards without the need to reject the standards in their entirety because of limited provisions that are not acceptable to the agency.

In this rulemaking, the NRC is continuing its existing practice of establishing requirements for the design, construction, operation, inservice inspection (examination) and inservice testing of nuclear power plants by approving the use of the latest editions and addenda of the ASME BPV and OM Codes (ASME Codes) in § 50.55a. The ASME Codes are voluntary consensus standards, developed by participants with broad and varied interests, in which all interested parties (including the NRC and licensees of nuclear power plants) participate. Therefore, the NRC's incorporation by reference of the ASME Codes is consistent with the overall objectives of the NTTAA and OMB Circular A–119.

As discussed in Section III of this statement of considerations, in this proposed rule the NRC is conditioning the use of certain provisions of the 2009 Addenda, 2010 Edition, 2011 Addenda, and the 2013 Edition to the ASME BPV Code, Section III, Division 1 and the ASME BPV Code, Section XI, Division 1, including NQA–1 (with conditions on its use), as well as the 2009 Edition and 2011 Addenda and 2012 Edition to the ASME OM Code and Code Cases N–770–2, N–729–4, and N–824. In addition, the proposed rule does not adopt (''excludes'') certain provisions of the ASME Codes and this statement of considerations, and in the regulatory and backfit analysis for this rulemaking. The NRC believes that this proposed rule complies with the NTTAA and OMB Circular A–119 despite these conditions and ''exclusions.''

If the NRC did not conditionally accept ASME editions, addenda, and code cases, the NRC would disapprove these entirely. The effect would be that licensees and applicants would submit a larger number of requests for use of alternatives under § 50.55a(z), requests for relief under § 50.55a(f) and (g), or requests for exemptions under § 50.12 and/or § 52.7. These requests would likely include broad-scope requests for approval to issue the full scope of the ASME Code editions and addenda which would otherwise be approved as proposed in this rulemaking (*i.e.,* the request would not be simply for approval of a specific ASME Code provision with conditions). These requests would be an unnecessary additional burden for both the licensee and the NRC, inasmuch as the NRC has already determined that the ASME Codes and Code Cases that are the subject of this rulemaking are acceptable for use (in some cases with conditions). For these reasons, the NRC concludes that this proposed rule's treatment of ASME Code editions and addenda, and code cases and any conditions placed on them does not conflict with any policy on agency use of consensus standards specified in OMB Circular A–119.

The NRC did not identify any other voluntary consensus standards developed by U.S. voluntary consensus standards bodies for use within the U.S. that the NRC could incorporate by reference instead of the ASME Codes. The NRC also did not identify any voluntary consensus standards developed by multinational voluntary consensus standards bodies for use on a multinational basis that the NRC could incorporate by reference instead of the ASME Codes. The NRC identified codes addressing the same subject as the ASME Codes for use in individual countries. At least one country, Korea, directly translated the ASME Code for use in that country. In other countries (*e.g.,* Japan), ASME Codes were the basis for development of the country's codes, but the ASME Codes were substantially modified to accommodate that country's regulatory system and reactor designs. Finally, there are countries (*e.g.,* the Russian Federation) where that country's code was developed without regard to the ASME Code. However, some of these codes may not meet the definition of a voluntary consensus standard because they were developed by the state rather than a voluntary consensus standards body. Evaluation by the NRC of the countries' codes to determine whether each code provides a comparable or enhanced level of safety

when compared against the level of safety provided under the ASME Codes would require a significant expenditure of agency resources. This expenditure does not seem justified, given that substituting another country's code for the U.S. voluntary consensus standard does not appear to substantially further the apparent underlying objectives of the NTTAA.

In summary, this proposed rulemaking satisfies the requirements of the NTTAA and OMB Circular A–119.

IX. Incorporation by Reference—Reasonable Availability to Interested Parties

The NRC proposes to incorporate by reference seven recent editions and addenda to the ASME codes for nuclear power plants and a standard for quality assurance. The NRC is also proposing to incorporate by reference four ASME code cases. As described in the ''Background'' and ''Discussion'' sections of this notice, these materials provide rules for safety governing 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 10 CFR 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 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 10 CFR 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 which do not qualify as a ''small entity'' under 10 CFR 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 10 CFR 2.315(c)).
- Federally-recognized and State-recognized [3] Indian tribes.
- Members of the general public (*i.e.,* individual, unaffiliated members of the public who are not regulated or otherwise subject to the NRC's regulatory oversight) who may wish to gain access to the materials which the NRC proposes to incorporate by reference by rulemaking in order to participate in the rulemaking.

The NRC makes the materials to be incorporated by reference available for inspection to all interested parties, by appointment, at the NRC Technical Library, which is located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852; telephone: 301–415–7000; email: *Library.Resource@nrc.gov.*

Interested parties may purchase a copy of the materials from ASME at Three Park Avenue, New York, NY 10016, or at the ASME Web site *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; *http://www.techstreet.com*). The purchase prices for individual documents range from $225 to $720 and the cost to purchase all documents is approximately $9,000.

For the class of interested parties constituting members of the general public who wish to gain access to the materials to be incorporated by reference in order to participate in the rulemaking, the NRC recognizes that the $9,000 cost may be so high that the materials could be regarded as not reasonably available for purposes of commenting on this rulemaking, despite the NRC's actions to make the materials available at the NRC's PDR. Accordingly, the NRC sent a letter to the ASME requesting that they consider enhancing public access to these materials during the public comment period (ADAMS Accession No. ML15085A206). In an April 21, 2015, letter to the NRC, the ASME agreed to make the materials available online in a read-only electronic access format during the public comment period (ADAMS Accession No. ML15112A064). Therefore, the seven editions and addenda to the ASME codes for nuclear power plants, the ASME standard for quality assurance, and the four ASME code cases which the NRC proposes to incorporate by reference in this rulemaking are available in read-only format at the ASME Web site *http://go.asme.org/NRC.*

The NRC concludes that the materials the NRC proposes to incorporate by reference in this rulemaking are reasonably available to all interested parties because the materials are available to all interested parties in multiple ways and in a manner consistent with their interest in the materials.

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

This proposed rule action is in accordance with the NRC's policy to incorporate by reference in § 50.55a new editions and addenda of the ASME BPV and OM Codes to provide updated rules for constructing 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 National Environmental Policy Act (NEPA) requires Federal agencies to study the impacts of their ''major Federal actions significantly affecting the quality of the human environment,'' and prepare detailed statements on the environmental impacts of the proposed action and alternatives to the proposed action (42 U.S.C. Sec. 4332(C); NEPA Sec. 102(C)).

The NRC has determined under NEPA, as amended, and the NRC's

[3] State-recognized Indian tribes are not within the scope of 10 CFR 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.

regulations in subpart A of 10 CFR part 51, that this proposed rule is not a major Federal action significantly affecting the quality of the human environment and, therefore, an environmental impact statement is not required. The rulemaking 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. The NRC estimates the radiological dose to plant personnel performing the inspections required by ASME BPV Code Case N–770–2 would be about 3 rem per plant over a 10-year interval, and a one-time exposure for mitigating welds of about 30 rem per plant. The NRC estimates the radiological dose to plant personnel performing the inspections required by ASME BPV Code Case N–729–4 would be about 3 rem per plant over a 10-year interval and a one-time exposure for mitigating welds of about 30 rem per plant. As required by 10 CFR part 20, and in accordance with current plant procedures and radiation protection programs, plant radiation protection staff will continue monitoring dose rates and would make adjustments in shielding, access requirements, decontamination methods, and procedures as necessary to minimize the dose to workers. The increased occupational dose to individual workers stemming from the ASME BPV Code Case N–770–2 and N–729–4 inspections must be maintained within the limits of 10 CFR part 20 and as low as reasonably achievable. Therefore, the NRC concludes that the increase in occupational exposure would not be significant. The 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 off-site impact to the public from this action.

XI. Paperwork Reduction Act Statement

This proposed rule contains new or amended collections of information subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This proposed rule has been submitted to the Office of Management and Budget for review and approval of the information collections.

Type of submission, new or revision: Revision.

The title of the information collection: Domestic Licensing of Production and Utilization Facilities: Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases.

The form number if applicable: Not applicable.

How often the collection is required or requested: On occasion.

Who will be required or asked to respond: Power reactor licensees and applicants for power reactors under construction.

An estimate of the number of annual responses: 320.

The estimated number of annual respondents: 104.

An estimate of the total number of hours needed annually to comply with the information collection requirement or request: 121,600.

Abstract: 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. The number of operating nuclear power plants has decreased and the NRC has increased its estimate of the burden associated with developing alternative requests. Overall, the reporting burden for 10 CFR 50.55a has increased.

The U.S. Nuclear Regulatory Commission is seeking public comment on the potential impact of the information collections contained in this proposed rule and on the following issues:

1. Is the proposed information collection necessary for the proper performance of the functions of the NRC, including whether the information will have practical utility?

2. Is the estimate of the burden of the proposed information collection accurate?

3. Is there a way to enhance the quality, utility, and clarity of the information to be collected?

4. How can the burden of the proposed information collection on respondents be minimized, including the use of automated collection techniques or other forms of information technology?

A copy of the OMB clearance package and proposed rule is available in ADAMS (Accession Nos. ML14141A281 and ML14258B191) or may be viewed free of charge at the NRC's PDR, One White Flint North, 11555 Rockville Pike, Room O–1 F21, Rockville, MD 20852. You may obtain information and comment submissions related to the OMB clearance package by searching on *http://www.regulations.gov* under Docket ID NRC–2011–0088.

You may submit comments on any aspect of these proposed information collection(s), including suggestions for reducing the burden and on the previously stated issues, by the following methods:

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2011–0088.
- *Mail comments to:* FOIA, Privacy, and Information Collections Branch, Office of Information Services, Mail Stop: T–5 F53, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001 or to Vlad Dorjets, Desk Officer, Office of Information and Regulatory Affairs (3150–0011), NEOB–10202, Office of Management and Budget, Washington, DC 20503; telephone 202–395–7315, email: *oira_submission@omb.eop.gov.*

Submit comments by October 19, 2015. Comments received after this date will be considered if it is practical to do so, but the NRC staff is able to ensure consideration only for comments received on or before this date.

Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

XII. Regulatory Analysis: Availability

The NRC has prepared a draft regulatory analysis on this proposed rule. The analysis examines the costs and benefits of the alternatives considered by the Commission. The NRC requests public comments on the draft regulatory analysis. Comments on the draft analysis may be submitted to the NRC by any method provided in the **ADDRESSES** section of this notice.

XIII. 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 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, valves, and dynamic restraints (snubbers) in accordance with the rules provided in the ASME OM Code.

This rulemaking proposes to incorporate by reference the 2009 Addenda, 2010 Edition, 2011 Addenda, and the 2013 Edition to the ASME BPV Code, Section III, Division 1 and ASME BPV Code, Section XI, Division 1, including NQA–1 (with conditions on its use), as well as the 2009 Edition and 2011 Addenda and 2012 Edition to the ASME OM Code and Code Cases N–770–2 and N–729–4.

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 National Technology Transfer and Advancement Act, 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. Thus, the NRC believes 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, 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. Thus, 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 and addenda 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 shall revise their ISI and IST programs every 120 months to the latest edition and addenda of Section XI of the ASME BPV Code and the ASME OM Code incorporated by reference into § 50.55a 12 months before the start of a new 120-month ISI and IST interval. Thus, 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 and addenda 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 Statement of Considerations 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 Addenda into § 50.55a.

ASME BPV Code, Section III

1. Revise § 50.55a(b)(1)(ii), ''Weld leg dimensions,'' to clarify rule language and add Table 1, which clarifies prohibited Section III provisions in tabular form for welds with leg size less than 1.09 t_n. This proposed change would not alter the original intent of this requirement and, therefore, would not impose a new requirement. Therefore, this proposed change is not a backfit.

2. Revise § 50.55a(b)(1)(iv), ''Section III condition: Quality assurance,'' to require that when applying editions and addenda later than the 1989 Edition of

Section III, the requirements of NQA–1, 1983 Edition through the 1994 Edition, 2008 Edition, and the 2009–1a Addenda are acceptable for use, provided that the edition and addenda of NQA–1 specified in either NCA–4000 or NCA–7000 is used in conjunction with the administrative, quality and technical provisions contained in the edition and addenda of Section III being used. This proposed revision clarifies the current requirements, and is considered to be consistent with the meaning and intent of the current requirements, and therefore is not considered to result in a change in requirements. Therefore, this proposed change is not a backfit.

3. Add a new proposed condition as § 50.55a(b)(1)(viii), ''Use of ASME Certification Marks,'' to allow licensees to use either the ASME BPV Code Symbol Stamp or ASME Certification Mark with the appropriate certification designator and class designator as specified in the 2013 Edition through the latest edition and addenda incorporated by reference in 10 CFR 50.55a. This proposed condition would not result in a change in requirements previously approved in the Code and, therefore, is not a backfit.

ASME BPV Code, Section XI

1. Revise § 50.55a(b)(2)(vi), ''Effective Edition and Addenda of Subsection IWE and Subsection IWL, Section XI;'' to clarify that the provision applies only to the class of licensees of operating reactors that were required by previous versions of § 50.55a to develop, implement a containment inservice inspection program in accordance with Subsection IWE and Subsection IWL, and complete an expedited examination of containment during the 5-year period from September 9, 1996, to September 9, 2001. This proposed revision clarifies the current requirements, is considered to be consistent with the meaning and intent of the current requirements, and is not considered to result in a change in requirements. Therefore, this proposed change is not a backfit.

2. Revise § 50.55a(b)(2)(viii), ''Examination of concrete containments,'' so that when using the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL, the conditions in 10 CFR 50.55a(b)(2)(viii)(E) do not apply, but the proposed conditions in new 10 CFR 50.55a(b)(2)(viii)(H) and 10 CFR 50.55a(b)(2)(viii)(I) do apply. This proposed revision would not require 10 CFR 50.55a(b)(2)(viii)(E) to be used when following the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL because most of its requirements have been included in IWL–2512, ''Inaccessible Areas.'' Therefore, this proposed change is not a backfit because the requirements have not changed. The revision to add the condition in 10 CFR 50.55a(b)(2)(viii)(H) captures the reporting requirements of the current 10 CFR 50.55a(b)(2)(viii)(E) which were not included in IWL–2512. Therefore, this proposed change is not a backfit because the requirements have not changed. The revision to add the condition in 10 CFR 50.55a(b)(2)(viii)(I) addresses a new code provision in IWL–2512(b) for evaluation of below-grade concrete surfaces during the period of extended operation of a renewed license. The condition assures consistency with the GALL Report and applies to plants going forward using the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWL. The requirements would remain unchanged from those of the GALL Report and, therefore, this change is not a backfit.

3. Revise § 50.55a(b)(2)(ix), ''Examination of metal containments,'' to extend the applicability of the existing conditions in § 50.55a(b)(2)(ix)(A)(2), § 50.55a(b)(2)(ix)(B), and § 50.55a(b)(2)(ix)(J) to the 2007 Edition with 2009 Addenda through the 2013 Edition of Subsection IWE. This proposed condition would not result in a change to current requirements, and is therefore not a backfit.

4. Revise § 50.55a(b)(2)(x), ''Section XI condition: Quality assurance,'' to require that when applying the editions and addenda later than the 1989 Edition of ASME BPV Code, Section XI, the requirements of NQA–1, 1983 Edition through the 1994 Edition, the 2008 Edition, and the 2009–1a Addenda specified in either IWA–1400 or Table IWA 1600–1, ''Referenced Standards and Specifications,'' of that edition and addenda of Section XI are acceptable for use, provided the licensee uses its appendix B to 10 CFR part 50 quality assurance program in conjunction with Section XI requirements. This proposed revision clarifies the current requirements, which the NRC considers to be consistent with the meaning and intent of the current requirements. Therefore, the NRC does not consider the clarification to be a change in requirements. Therefore, this proposed change is not a backfit.

5. Add a new proposed condition as § 50.55a(b)(2)(xviii)(D), ''NDE personnel certification: Fourth provision;'' to prohibit the use of Appendix VII and subarticle VIII–2200 of the 2011 Addenda and 2013 Edition of Section XI of the ASME BPV Code. Licensees would be required to implement Appendix VII and subarticle VIII–2200 of the 2010 Edition of Section XI. This condition does not constitute a change in NRC position because the use of the subject provisions is not currently allowed by § 50.55a. Therefore, the addition of this new proposed condition is not a backfit.

6. Revise § 50.55a(b)(2)(xxi)(A), ''Table IWB–2500–1 examination requirements; First provision,'' to modify the standard for visual magnification resolution sensitivity and contrast for visual examinations of Examination Category B–D components, making the rule conform with ASME BPV Code, Section XI requirements for VT–1 examinations. This proposed revision removes a condition that was in addition to the ASME Code requirements and does not impose a new requirement. Therefore, this change is not a backfit.

7. Add a new proposed condition as § 50.55a(b)(2)(xxx), ''Steam Generator Preservice Examinations;'' to require that instead of the preservice inspection requirements of Section XI, IWB–2200(c), a full length examination of 100 percent of the tubing in each newly installed steam generator shall be performed prior to plant startup. This proposed condition provides a clarification consistent with industry guidelines and the NRC staff position in SRP Section 5.4.2.2. Therefore, the addition of this new proposed condition is not a backfit.

8. Add a new proposed condition as § 50.55a(b)(2)(xxxi), ''Mechanical clamping devices;'' to prohibit the use of mechanical clamping devices in accordance with IWA–4131.1(c) in the 2010 Edition and IWA–4131.1(d) in the 2011 Addenda through 2013 Edition on small item Class 1 piping and portions of a piping system that forms the containment boundary. This condition does not constitute a change in NRC position and would not affect licensees because the use of the subject provisions is not currently allowed by § 50.55a. Therefore, the addition of this new proposed condition is not a backfit.

9. Add a new proposed condition as § 50.55a(b)(2)(xxxii), ''Summary Report submittal;'' to clarify that licensees using the 2010 Edition or later editions and addenda of Section XI must continue to submit to the NRC the Preservice and Inservice Summary Reports required by IWA–6240 of the 2009 addenda of Section XI. This proposed condition would not result in a change in NRC's requirements insomuch as these reports have been required in the 2009 Addenda of Section XI and all previous editions and

addenda. Therefore, the addition of this new proposed condition is not a backfit.

10. Add a new proposed condition as § 50.55a(b)(2)(xxxiii), ''Risk-Informed allowable pressure;'' to prohibit the use of ASME BPV Code, Section XI, Appendix G, Paragraph G–2216. The use of Paragraph G–2216 is not currently allowed by § 50.55a. Therefore, the proposed condition does not constitute a new or changed NRC position on the lack of acceptability of Paragraph G–2216. Therefore, the addition of this new proposed condition is not a backfit.

11. Add a new proposed condition as § 50.55a(b)(2)(xxxiv), ''Disposition of flaws in Class 3 components;'' to require that when using the 2013 Edition of the ASME BPV Code, Section XI, the licensee shall use the acceptance standards of IWD–3510 for the disposition of flaws in Category D–A components. The condition is imposed to provide clarification and consistency in requirements between IWD–3410 and IWD–3510. This proposed change would not alter the original intent of this requirement and, therefore, would not impose a new requirement. This proposed change is not a backfit.

12. Add a new proposed condition as § 50.55a(b)(2)(xxxv), ''Use of RT_{T0} in the K_{Ia} and K_{Ic} equations;'' to specify that when licensees use ASME BPV Code, Section XI 2013 Edition Nonmandatory Appendix A paragraph A–4200, if T_0 is available, then RT_{T0} may be used in place of RT_{NDT} for applications using the K_{Ic} equation and the associated K_{Ic} curve, but not for applications using the K_{Ia} equation and the associated K_{Ia} curve. Conditions on the use of ASME BPV Code, Section XI, Nonmandatory Appendices do not constitute backfitting inasmuch as those provisions apply to voluntary actions initiated by the licensee to use the ''nonmandatory compliance'' provisions in these Appendices of the proposed rule.

13. Add a new proposed condition as § 50.55a(b)(2)(xxxvi), ''Fracture toughness of irradiated materials;'' to require licensees using ASME BPV Code, Section XI 2013 Edition Nonmandatory Appendix A paragraph A–4400, to obtain NRC approval before using irradiated T_0 and the associated RT_{T0} in establishing fracture toughness of irradiated materials. Conditions on the use of ASME BPV Code, Section XI, Nonmandatory Appendices do not constitute backfitting inasmuch as those provisions apply to voluntary actions initiated by the licensee to use the ''nonmandatory compliance'' provisions in these Appendices of the proposed rule.

14. Add a new proposed condition as § 50.55a(b)(2)(xxxvii), ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1,'' to allow the use of the code case as conditioned. Conditions on the use of ASME BPV Code Case N–824 do not constitute backfitting, inasmuch as the use of this code case is not required by the NRC but instead is an alternative which may be voluntarily used by the licensee (*i.e.,* a ''voluntary alternative'').

ASME OM Code

1. Add a new proposed condition as § 50.55a(b)(3)(ii)(A) to require that licensees evaluate the adequacy of the diagnostic test interval for each MOV and adjust the interval as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of Appendix III of the ASME OM Code. This proposed condition represents an exception to a later OM Code provision but merely retains the current NRC requirement in RG 1.192, and is therefore not a backfit because the NRC is not imposing a new requirement.

2. Add a new proposed condition as § 50.55a(b)(3)(ii)(B) to require that licensees ensure that the potential increase in core damage frequency and large early release frequency associated with the extension is acceptably small when extending exercise test intervals for high risk MOVs beyond a quarterly frequency. This proposed condition represents an exception to a later OM Code provision but merely retains the current NRC requirement in RG 1.192, and is therefore not a backfit because the NRC is not imposing a new requirement.

3. Add a new proposed condition as § 50.55a(b)(3)(ii)(C) to require, when applying Appendix III to the ASME OM Code, that licensees categorize MOVs according to their safety significance using the methodology described in ASME OM Code Case OMN–3 subject to the conditions discussed in RG 1.192, or using an MOV risk ranking methodology accepted by the NRC on a plant-specific or industry-wide basis in accordance with the conditions in the applicable safety evaluation. This proposed condition represents an exception to a later OM Code provision but merely retains the current NRC requirement in RG 1.192, and is therefore not a backfit because the NRC is not imposing a new requirement.

4. Add a new proposed condition as § 50.55a(b)(3)(ii)(D) to require that, when applying Paragraph III–3600, ''MOV Exercising Requirements,'' of Appendix III to the OM Code, licensees shall verify that the stroke time of the MOV satisfies the assumptions in the plant safety analyses. This proposed condition retains the MOV stroke time requirement that was specified in previous editions and addenda of the ASME OM Code. The retention of this requirement is not a backfit.

5. Add new proposed conditions as § 50.55a(b)(3)(iii)(A) through § 50.55a(b)(3)(iii)(D), ''OM condition: New Reactors;'' to apply specific conditions for IST programs applicable to licensees of new nuclear power plants in addition to the provisions of the ASME OM Code as incorporated by reference with conditions in § 50.55a. Licensees of ''new reactors'' are, as identified in the proposed paragraph: (i) Holders of operating licenses for nuclear power reactors that received construction permits under this part on or after the date 12 months after the effective date of this rulemaking and (ii) holders of COLs issued under 10 CFR part 52, whose initial fuel loading occurs on or after the date 12 months after the effective date of this rulemaking. This implementation schedule for new reactors is consistent with the NRC regulations in § 50.55a(f)(4)(i). These proposed conditions represent an exception to a later OM Code provision but merely retain the current NRC requirement, and are therefore not a backfit because the NRC is not imposing a new requirement.

6. Revise § 50.55a(b)(3)(iv), ''OM condition: Check valves (Appendix II),'' to specify that Appendix II, ''Check Valve Condition Monitoring Program,'' of the OM Code, 2003 Addenda through the 2012 Edition, is acceptable for use without conditions with the clarifications that (1) the maximum test interval allowed by Appendix II for individual check valves in a group of two valves or more must be supported by periodic testing of a sample of check valves in the group during the allowed interval and (2) the periodic testing plan must be designed to test each valve of a group at approximate equal intervals not to exceed the maximum requirement interval. The regulation is being revised to extend the applicability of this existing NRC condition on the OM Code to the 2012 Edition of the OM Code. This does not represent a change in the NRC's position that the condition is needed with respect to the OM Code. Therefore, this proposed condition is not a backfit.

7. Add a new proposed condition as § 50.55a(b)(3)(vii), ''OM condition: Subsection ISTB;'' to prohibit the use of Subsection ISTB in the 2011 Addenda to the ASME OM Code because the complete set of planned Code

modifications to support the changes to the comprehensive pump test acceptance criteria was not made in that addenda. This proposed condition represents an exception to a later OM Code provision but merely limits the use of the later Code provision, and is therefore not a backfit because the NRC is not imposing a new requirement.

8. Add a new proposed condition as § 50.55a(b)(3)(viii), ''OM condition: Subsection ISTE;'' to allow licensees to implement Subsection ISTE, ''Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants,'' in the ASME OM Code, 2009 Edition, 2011 Addenda and 2012 Edition, where the licensee has obtained authorization to implement Subsection ISTE as an alternative to the applicable IST requirements in the ASME OM Code on a case-by-case basis in accordance with § 50.55a(z). This proposed condition represents an exception to a later OM Code provision but merely limits the use of the later Code provision, and is therefore not a backfit because the NRC is not imposing a new requirement.

9. Add a new proposed condition as § 50.55a(b)(3)(ix), ''OM Condition: Subsection ISTF;'' to specify that licensees applying Subsection ISTF, 2012 Edition, shall satisfy the requirements of Mandatory Appendix V, ''Pump Periodic Verification Test Program,'' of the ASME OM Code, 2012 Edition. The proposed condition also specifies that Subsection ISTF, 2011 Addenda, is not acceptable for use. This proposed condition represents an exception to a later OM Code provision but merely limits the use of the later Code provision, and is therefore not a backfit because the NRC is not imposing a new requirement.

10. Add a new proposed condition as § 50.55a(b)(3)(x), ''OM condition: ASME OM Code Case OMN–20,'' to allow licensees to implement ASME OM Code Case OMN–20, ''Inservice Test Frequency,'' in the ASME OM Code, 2012 Edition. This proposed condition allows voluntary action initiated by the licensee to use the code case and is, therefore, not a backfit.

11. Add a new proposed condition as § 50.55a(b)(3)(xi), ''OM condition: Valve Position Indication,'' to specify that when implementing ASME OM Code, Subsection ISTC–3700, ''Position Verification Testing,'' licensees shall supplement the ASME OM Code provisions as necessary to verify that valve operation is accurately indicated. This proposed condition clarifies the current requirements, and is considered to be consistent with the meaning and intent of the current requirements, and therefore is not considered to result in a change in requirements. As such, this proposed condition is not a backfit.

12. Revise § 50.55a(f), ''Inservice testing requirements,'' to clarify that the ASME OM Code includes provisions for preservice testing of components as part of its overall provisions for IST programs. No expansion of IST program scope is intended by this clarification. This proposed condition would not result in a change in requirements previously approved in the Code and is, therefore, not a backfit.

13. Revise § 50.55a(f)(3)(iii)(A), ''Class 1 pumps and valves: First provision,'' to state that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6. This proposed condition would not result in a change in requirements previously approved in the Code and is, therefore, not a backfit.

14. Revise § 50.55a(f)(3)(iii)(B), ''Class 1 pumps and valves: Second provision,'' to state that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6. This proposed condition would not result in a change in requirements previously approved in the Code and is, therefore, not a backfit.

15. Revise § 50.55a(f)(3)(iv)(A), ''Class 2 and 3 pumps and valves: First provision;'' to state that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code and not covered by paragraph (f)(3)(iii)(A) for Class 1 pumps and valves. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6. This proposed condition would not result in a change in requirements previously approved in the Code and is, therefore, not a backfit.

16. Revise § 50.55a(f)(3)(iv)(B), ''Class 2 and 3 pumps and valves: Second provision,'' to state that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code and not covered by paragraph (f)(3)(iii)(B) for Class 1 pumps and valves. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6. This proposed condition would not result in a change in requirements previously approved in the Code, and is therefore not a backfit.

17. Revise § 50.55a(f)(4), ''Inservice testing standards for operating plants;'' to state that the paragraph is applicable to pumps and valves that are within the scope of the ASME OM Code. This will align the scope of pumps and valves for inservice testing with the scope defined in the ASME OM Code and in SRP Section 3.9.6. This proposed condition would not result in a change in requirements previously approved in the Code, and is therefore not a backfit.

ASME BPV Code Case N–729–4

Revise § 50.55a(g)(6)(ii)(D), ''Reactor vessel head inspections'':

On June 22, 2012, the ASME approved the fourth revision of ASME BPV Code Case N–729, (N–729–4). The NRC proposes to update the requirements of § 50.55a(g)(6)(ii)(D) to require licensees to implement ASME BPV Code Case N–729–4, with conditions. The ASME BPV Code Case N–729–4 contains similar requirements as N–729–1; however, N–729–4 also contains new requirements to address previous NRC conditions, including changes to inspection frequency and qualifications. The new NRC conditions on the use of ASME BPV Code Case N–729–4 address operational experience, clarification of implementation, and the use of alternatives to the code case.

The current regulatory requirements for the examination of pressurized water reactor upper RPV heads that use nickel-alloy materials are provided in § 50.55a(g)(6)(ii)(D). This section was first created by rulemaking, dated September 10, 2008, (73 FR 52730) to require licensees to implement ASME BPV Code Case N–729–1, with conditions, instead of the inspections previously required by the ASME BPV Code, Section XI. The action did constitute a backfit; however, NRC concluded that imposition of ASME BPV Code Case N–729–1, as conditioned, constituted an adequate protection backfit.

The GDC for nuclear power plants (appendix A to 10 CFR part 50) or, as appropriate, similar requirements in the licensing basis for a reactor facility, provide bases and requirements for NRC assessment of the potential for, and consequences of, degradation of the reactor coolant pressure boundary (RCPB). The applicable GDC include GDC 14 (Reactor Coolant Pressure Boundary), GDC 31 (Fracture Prevention of Reactor Coolant Pressure Boundary), and GDC 32 (Inspection of Reactor Coolant Pressure Boundary). General Design Criterion 14 specifies that the RCPB be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of

rapidly propagating failure, and of gross rupture. General Design Criterion 31 specifies that the probability of rapidly propagating fracture of the RCPB be minimized. General Design Criterion 32 specifies that components that are part of the RCPB have the capability of being periodically inspected to assess their structural and leak tight integrity.

The NRC concludes that ASME BPV Code Case N–729–4, as conditioned, shall be mandatory in order to ensure that the requirements of the GDC are satisfied. Imposition of ASME BPV Code Case N–729–4, with conditions, ensures that the ASME Code-allowable limits will not be exceeded, leakage will likely not occur and potential flaws will be detected before they challenge the structural or leak tight integrity of the reactor pressure vessel upper head within current nondestructive examination limitations. The NRC concludes that the regulatory framework for providing adequate protection of public health and safety is accomplished by the incorporation of ASME BPV Code Case N–729–4 into § 50.55a, as conditioned. All current licensees of U.S. pressurized water reactors will be required to implement ASME BPV Code Case N–729–4, as conditioned. The Code Case provisions on examination requirements for reactor pressure vessel upper heads are essentially the same as those established under ASME BPV Code Case N–729–1, as conditioned. One exception is the condition in § 50.55a(g)(6)(ii)(D)(3), which will require, for upper heads with Alloy 600 penetration nozzles, that bare metal visual examinations be performed each outage in accordance with Table 1 of ASME BPV Code Case N–729–4. Accordingly, the NRC imposition of the ASME BPV Code Case N–729–4, as conditioned, may be deemed to be a modification of the procedures to operate a facility resulting from the imposition of the new regulation, and as such, this rulemaking provision may be considered backfitting under § 50.109(a)(1).

The NRC continues to find that inspections of reactor pressure vessel upper heads, their penetration nozzles, and associated partial penetration welds are necessary for adequate protection of public health and safety and that the requirements of ASME BPV Code Case N–729–4, as conditioned, represent an acceptable approach, developed, in part, by a voluntary consensus standards organization for performing future inspections. The NRC concludes that approval of ASME BPV Code Case N–729–4, as conditioned, by incorporation by reference of the Code Case into § 50.55a, is necessary to ensure that the facility provides adequate protection to the health and safety of the public and constitutes a redefinition of the requirements necessary to provide reasonable assurance of adequate protection of public health and safety. Therefore, a backfit analysis need not be prepared for this portion of the proposed rule in accordance with § 50.109(a)(4)(ii) and § 50.109(a)(4)(iii).

ASME BPV Code Case N–770–2

Revise § 50.55a(g)(6)(ii)(F), ''Examination requirements for Class 1 piping and nozzle dissimilar metal butt welds'':

On June 9, 2011, the ASME approved the second revision of ASME BPV Code Case N–770, (N–770–2). The NRC proposes to update the requirements of § 50.55a(g)(6)(ii)(F) to require licensees to implement ASME BPV Code Case N–770–2, with conditions. The ASME BPV Code Case N–770–2 contains similar baseline and ISI requirements for unmitigated nickel-alloy butt welds, and preservice and ISI requirements for mitigated butt welds as N–770–1. However, N–770–2 also contains new requirements for optimized weld overlays, a specific mitigation technique and volumetric inspection coverage. Further, the NRC conditions on the use of ASME BPV Code Case N–770–2 have been modified to address the changes in the code case, clarify inspection coverage requirements and require the development of inspection qualifications to allow complete weld inspection coverage in the future.

The current regulatory requirements for the examination of ASME Class 1 piping and nozzle dissimilar metal butt welds that use nickel-alloy materials is provided in § 50.55a(g)(6)(ii)(F). This section was first created by rulemaking, dated June 21, 2011 (76 FR 36232), to require licensees to implement ASME BPV Code Case N–770–1, with conditions. The NRC added § 50.55a(g)(6)(ii)(F) to require licensees to implement ASME BPV Code Case N–770–1, with conditions, instead of the inspections previously required by the ASME BPV Code, Section XI. The action did constitute a backfit; however, the NRC concluded that imposition of ASME BPV Code Case N–770–1, as conditioned, constituted an adequate protection backfit.

The GDC for nuclear power plants (appendix A to 10 CFR part 50) or, as appropriate, similar requirements in the licensing basis for a reactor facility, provide bases and requirements for NRC assessment of the potential for, and consequences of, degradation of the RCPB. The applicable GDC include GDC 14 (Reactor Coolant Pressure Boundary), GDC 31 (Fracture Prevention of Reactor Coolant Pressure Boundary) and GDC 32 (Inspection of Reactor Coolant Pressure Boundary). General Design Criterion 14 specifies that the RCPB be designed, fabricated, erected, and tested so as to have an extremely low probability of abnormal leakage, of rapidly propagating failure, and of gross rupture. General Design Criterion 31 specifies that the probability of rapidly propagating fracture of the RCPB be minimized. General Design Criterion 32 specifies that components that are part of the RCPB have the capability of being periodically inspected to assess their structural and leak tight integrity.

The NRC concludes that ASME BPV Code Case N–770–2, as conditioned, must be imposed in order to ensure that the requirements of the GDC are satisfied. Imposition of ASME BPV Code Case N–770–2, with conditions, ensures that the requirements of the GDC are met for all mitigation techniques currently in use for Alloy 82/182 butt welds because ASME Code-allowable limits will not be exceeded, leakage would likely not occur and potential flaws will be detected before they challenge the structural or leak tight integrity of piping welds. All current licensees of U.S. pressurized water reactors will be required to implement ASME BPV Code Case N–770–2, as conditioned. The Code Case provisions on examination requirements for ASME Class 1 piping and nozzle nickel-alloy dissimilar metal butt welds are somewhat different from those established under ASME BPV Code Case N–770–1, as conditioned, and will require a licensee to modify its procedures for inspection of ASME Class 1 nickel-alloy welds to meet these requirements. Accordingly, the NRC imposition of the ASME BPV Code Case N–770–2, as conditioned, may be deemed to be a modification of the procedures to operate a facility resulting from the imposition of the new regulation, and as such, this rulemaking provision may be considered backfitting under § 50.109(a)(1).

The NRC continues to find that ASME Class 1 nickel-alloy dissimilar metal weld inspections are necessary for adequate protection of public health and safety, and that the requirements of ASME BPV Code Case N–770–2, as conditioned, represent an acceptable approach developed by a voluntary consensus standards organization for performing future ASME Class 1 nickel-alloy dissimilar metal weld inspections. The NRC concludes that approval of ASME BPV Code Case N–770–2, as conditioned, by incorporation by reference of the Code Case into § 50.55a,

is necessary to ensure that the facility provides adequate protection to the health and safety of the public and constitutes a redefinition of the requirements necessary to provide reasonable assurance of adequate protection of public health and safety. Therefore, a backfit analysis need not be prepared for this portion of the proposed rule in accordance with § 50.109(a)(4)(ii) and § 50.109(a)(4)(iii).

Conclusion

The NRC finds that incorporation by reference into § 50.55a of the 2009 Addenda through 2013 Edition of Section III, Division 1, of the ASME BPV Code subject to the identified conditions; the 2009 Addenda through 2013 Edition of Section XI, Division 1, of the ASME BPV Code, subject to the identified conditions; and the 2009 Edition through the 2012 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.

The NRC finds that the incorporation by reference of Code Cases N–824 and OMN–20 does not constitute backfitting or represent an inconsistency with any issue finality provisions in 10 CFR part 52.

The NRC finds that the inclusion of a new condition on Code Case N–729–4 and a new condition on Code Case N–770–2 constitutes backfitting necessary for adequate protection.

XIV. Regulatory Flexibility Certification

Under the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the NRC certifies that this proposed rule does not impose a significant economical impact on a substantial number of small entities. This proposed rule affects only the licensing and operation of commercial nuclear power plants. A licensee who is a subsidiary of a large entity does not qualify as a small entity. The companies that own these plants are not ''small entities'' as defined in the Regulatory Flexibility Act or the size standards established by the NRC (10 CFR 2.810), as the companies:

- Provide services that are not engaged in manufacturing, and have average gross receipts of more than $6.5 million over their last 3 completed fiscal years, and have more than 500 employees;
- Are not governments of a city, county, town, township or village;
- Are not school districts or special districts with populations of less than 50; and
- Are not small educational institutions.

XV. 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 notice.

TABLE 1—AVAILABILITY OF DOCUMENTS

Document	ADAMS Accession No.
Proposed Rule Documents:	
Regulatory Analysis (includes backfitting discussion in Appendix A)	ML14170B104.
Related Documents:	
Fatigue and Fracture Mechanics: 33rd Volume, ASTM STP 1417, W.G. Reuter and R.S. Piascik, Eds., ASTM International, West Conshohocken, PA, 2002.	
''Final Results from the CARINA Project on Crack Initiation and Arrest of Irradiated German RPV Steels for Neutron Fluences in the Upper Bound,'' by AREVA at the 26th Symposium on Effects of Radiation on Nuclear Materials (June 12–13, 2013, Indianapolis, IN, USA).	
Letter from Brian Thomas, NRC, to Michael Merker, ASME; ''Public Access to Material the NRC Seeks to Incorporate by Reference into its Regulations;'' April 9, 2015.	ML15085A206.
Letter from Michael Merker, ASME, to Brian Thomas, NRC; April 21, 2015	ML15112A064.
Licensee Event Report 50–338/2012–001–00	ML12151A441.
NUREG–0800, ''Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants, LWR Edition''.	ML070660036.
NUREG–0800, Section 3.9.6, Revision 3, ''Functional Design, Qualification, and Inservice Testing Programs for Pumps, Valves, and Dynamic Restraints,'' March 2007.	ML070720041.
NUREG–0800, Section 5.4.2.2, Revision 1, ''Steam Generator Tube Inservice Inspection,'' July 1981	ML052340627.
NUREG–1482, Revision 2, ''Guidelines for Inservice Testing at Nuclear Power Plants: Inservice Testing of Pumps and Valves and Inservice Examination and Testing of Dynamic Restraints (Snubbers) at Nuclear Power Plants,'' October 2013.	ML13295A020.
NUREG–1801, Revision 2, ''Generic Aging Lessons Learned (GALL) Report,'' December 2010	ML103490041.
NUREG–1950, ''Disposition of Public Comments and Technical Bases for Changes in the License Renewal Guidance Documents NUREG–1801 and NUREG–1800,'' April 2011.	ML11116A062.
NUREG/CR–6860, ''An Assessment of Visual Testing,'' November 2004	ML043630040.
NUREG/CR–6933, ''Assessment of Crack Detection in Heavy-Walled Cast Stainless Steel Piping Welds Using Advanced Low-Frequency Ultrasonic Methods,'' March 2007.	ML071020410 and ML071020414.
NUREG/CR–7122, ''An Evaluation of Ultrasonic Phased Array Testing for Cast Austenitic Stainless Steel Pressurizer Surge Line Piping Welds,'' March 2012.	ML12087A004.
NRC Generic Letter 90–05, ''Guidance for Performing Temporary Non-Code Repair of ASME Code Class 1, 2, and 3 Piping (Generic Letter 90–05),'' June 1990.	ML031140590.
NRC Meeting Summary of June 5–7, 2013, Annual Materials Programs Technical Information Exchange Public Meeting.	ML14003A230.
NRC Memorandum, ''Consolidation of SECY–94–084 and SECY–95–132,'' July 24, 1995	ML003708048.
NRC Memorandum, ''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),'' September 10, 1999.	ML003755050.
NRC Regulatory Guide 1.28, Revision 4, ''Quality Assurance Program Criteria (Design and Construction),'' June 2010.	ML100160003.
NRC Regulatory Guide 1.83, Revision 1, ''Inservice Inspection of Pressurized Water Reactor Steam Generator Tubes,'' July 1975 (withdrawn in 2009).	ML003740256.
NRC Regulatory Guide 1.147, Revision 17, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,'' August 2014.	ML13339A689.

TABLE 1—AVAILABILITY OF DOCUMENTS—Continued

Document	ADAMS Accession No.
NRC Regulatory Guide 1.174, Revision 2, ''An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis,'' May 2011.	ML100910006.
NRC Regulatory Guide 1.175, ''An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing,'' August 1998.	ML003740149.
NRC Regulatory Guide 1.192, Revision 1, ''Operation and Maintenance Code Case Acceptability, ASME OM Code,'' August 2014.	ML13340A034.
NRC Regulatory Guide 1.200, Revision 2, ''An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,'' March 2009.	ML090410014.
NRC Regulatory Guide 1.201, Revision 1, ''Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance,'' May 2006.	ML061090627.
NRC Regulatory Information Conference, Recent Operating Reactors Materials Issues, Presentation Materials, 2013.	*http://www.nrc.gov/public-involve/conference-symposia/ric/past/2013/docs/abstracts/sessionabstract-19.html.*
Relief Request REP–1 U2, Revision 2	ML13232A308.
SECY–90–016, ''Evolutionary Light Water Reactor (LWR) Certification Issues and Their Relationship to Current Regulatory Requirements''.	ML003707849.
SECY–93–087, ''Policy, Technical, and Licensing Issues Pertaining to Evolutionary and Advanced Light-Water Reactor (ALWR) Designs''.	ML003708021.
SECY–94–084, ''Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems in Passive Plant Designs''.	ML003708068.
SECY–95–132, ''Policy and Technical Issues Associated with the Regulatory Treatment of Non-Safety Systems (RTNSS) in Passive Plant Designs (SECY–94–084)''.	ML003708005.
ASME Codes, Standards, and Code Cases:	
ASME BPV Code, Section III, Division 1: 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition.	*http://go.asme.org/NRC.*
ASME BPV Code, Section XI, Division 1: 2009 Addenda, 2010 Edition, 2011 Addenda, and 2013 Edition.	*http://go.asme.org/NRC.*
ASME OM Code, Division 1: 2009 Edition, 2011 Addenda, and 2012 Edition	*http://go.asme.org/NRC.*
ASME Standard NQA–1: 1983 Edition through 1994 Edition, 2008 Edition, and 2009–1a Addenda	*http://go.asme.org/NRC.*
ASME BPV Code Case N–729–4	*http://go.asme.org/NRC.*
ASME BPV Code Case N–770–2	*http://go.asme.org/NRC.*
ASME BPV Code Case N–824	*http://go.asme.org/NRC.*
ASME OM Code Case OMN–20	*http://go.asme.org/NRC.*

Throughout the development of this rulemaking, the NRC may post documents related to this rule, including public comments, on the Federal rulemaking Web site at *http://www.regulations.gov* under Docket ID NRC–2011–0088. The Federal rulemaking Web site allows you to receive alerts when changes or additions occur in a docket folder. To subscribe: (1) Navigate to the docket folder for NRC–2011–0088; (2) click the ''Sign up for Email Alerts'' link; and (3) enter your email address and select how frequently you would like to receive emails (daily, weekly, or monthly).

List of Subjects in 10 CFR Part 50

Administrative practice and procedure, Antitrust, Classified information, Criminal penalties, Education, 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, Public Law 96–295, 94 Stat. 783.

■ 2. In § 50.55a:

■ a. Revise paragraphs (a) introductory text, (a)(1)(i) introductory text, (a)(1)(i)(E)(*12*), (a)(1)(i)(E)(*13*) and add paragraphs (a)(1)(i)(E)(*14*) through (a)(1)(i)(E)(*17*);

■ b. Revise paragraph (a)(1)(ii) introductory text, (a)(1)(ii)(C)(*48*) and (a)(1)(ii)(C)(*49*) and add paragraphs (a)(1)(ii)(C)(*50*) through (a)(1)(ii)(C)(*53*);

■ c. Revise paragraphs (a)(1)(iii)(B) and (a)(1)(iii)(C) and add paragraphs (a)(1)(iii)(D), (a)(1)(iii)(E);

■ d. Revise paragraphs (a)(1)(iv) introductory text and add paragraphs (a)(1)(iv)(B) and (a)(1)(iv)(C);

■ e. Add paragraph (a)(1)(v);

■ f. Revise paragraphs (b) introductory text, (b)(1) introductory text, (b)(1)(ii), (b)(1)(iv), and (b)(1)(vii) and add paragraph (b)(1)(viii);

■ g. Revise paragraphs (b)(2) introductory text, (b)(2)(vi);

■ h. Revise paragraph (b)(2)(viii) introductory text and add paragraphs (b)(2)(viii)(H) and (b)(2)(viii)(I);

■ i. Revise paragraphs (b)(2)(ix) introductory text, (b)(2)(ix)(D), (b)(2)(x), add paragraph (b)(2)(xviii)(D), revise paragraph (b)(2)(xxi)(A), and add paragraphs (b)(2)(xxx) through (b)(2)(xxxvii);

■ j. Revise paragraphs (b)(3) introductory text, (b)(3)(i), and (b)(3)(ii), add paragraph (b)(3)(iii), revise paragraphs (b)(3)(iv) introductory text and (b)(3)(iv)(A) though (b)(3)(iv)(D), and add paragraphs (b)(3)(vii) through (b)(3)(xi);

■ k. Revise paragraphs (b)(4) introductory text, (b)(5), and (b)(6);
■ l. Revise paragraphs (f) introductory text, (f)(2), (f)(3)(iii)(A), (f)(3)(iii)(B), (f)(3)(iv)(A), (f)(3)(iv)(B), (f)(4) introductory text, (f)(4)(i), (f)(4)(ii);
■ m. Revise paragraphs (g) introductory text, (g)(2), (g)(3) introductory text, (g)(3)(i), (g)(3)(ii), (g)(3)(v), (g)(4)(i), (g)(4)(ii), and (g)(6)(ii)(D)(*1*) through (g)(6)(ii)(D)(*4*), remove paragraphs (g)(6)(ii)(D)(*5*) and (g)(6)(ii)(D)(*6*), revise paragraphs (g)(6)(ii)(F)(*1*) through (g)(6)(ii)(F)(*10*), and add paragraphs (g)(6)(ii)(F)(*11*) through (g)(6)(ii)(F)(*13*).

The revisions and additions read as follows:

§ 50.55a Codes and standards.

(a) *Documents approved for incorporation by reference.* The standards listed in this paragraph have been approved for incorporation by reference by the Director of the Federal Register pursuant to 5 U.S.C. 552(a) and 1 CFR part 51. The standards are available for inspection, by appointment, at the NRC Technical Library, which is located at Two White Flint North, 11545 Rockville Pike, Rockville, Maryland 20852; telephone: 301–415–7000; email: *Library.Resource@nrc.gov;* or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030 or go to *http://www.archives.gov/federal-register/cfr/ibr-locations.html.*

(1) * * *

(i) *ASME Boiler and Pressure Vessel Code, Section III.* The editions and addenda for Section III of the ASME Boiler and Pressure Vessel Code (excluding Nonmandatory Appendices) are listed below, but limited by those provisions identified in paragraph (b)(1) of this section.

* * * * *

(E) * * *

(*12*) 2007 Edition,

(*13*) 2008 Addenda,

(*14*) 2009 Addenda,

(*15*) 2010 Edition,

(*16*) 2011 Addenda, and

(*17*) 2013 Edition.

(ii) *ASME Boiler and Pressure Vessel Code, Section XI.* The editions and addenda for Section XI of the ASME Boiler and Pressure Vessel Code (excluding Nonmandatory Appendix U) are listed below, but limited by those provisions identified in paragraph (b)(2) of this section.

* * * * *

(C) * * *

(*48*) 2007 Edition,

(*49*) 2008 Addenda,

(*50*) 2009 Addenda,

(*51*) 2010 Edition,

(*52*) 2011 Addenda, and

(*53*) 2013 Edition.

(iii) * * *

(B) *ASME BPV Code Case N–729–4.* ASME BPV Code Case N–729–4, ''Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds Section XI, Division 1'' (Approval Date: June 22, 2012), with the conditions in paragraph (g)(6)(ii)(D) of this section.

(C) *ASME BPV Code Case N–770–2.* ASME BPV Code Case N–770–2, ''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: June 9, 2011), with the conditions in paragraph (g)(6)(ii)(F) of this section.

(D) *ASME BPV Code Case N–824.* ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1'' (Approval Date: October 16, 2012), with the conditions in paragraphs (b)(2)(xxxvii)(A) through (E) of this section.

(E) *ASME OM Code Case OMN–20.* ASME OM Code Case OMN–20, ''Inservice Test Frequency,'' in the 2012 Edition of the ASME OM Code. OMN–20 is referenced in paragraph (b)(3)(x).

(iv) *ASME Operation and Maintenance Code.* The editions and addenda for the ASME Operation and Maintenance of Nuclear Power Plants are listed below, but limited by those provisions identified in paragraph (b)(3) of this section.

* * * * *

(B) ''Operation and Maintenance of Nuclear Power Plants, Division 1: Section IST Rules for Inservice Testing of Light-Water Reactor Power Plants''

(*1*) 2009 Edition and

(*2*) 2011 Addenda.

(C) ''Operation and Maintenance of Nuclear Power Plants, Division 1: OM Code: Section IST.''

(*1*) 2012 Edition.

(*2*) [Reserved]

(v) *ASME Quality Assurance Requirements.*

(A) ASME NQA–1, ''Quality Assurance Program Requirements for Nuclear Facilities.''

(*1*) NQA–1–1983 Edition,

(*2*) NQA–1a–1983 Addenda,

(*3*) NQA–1b–1984 Addenda,

(*4*) NQA–1c–1985 Addenda,

(*5*) NQA–1–1986 Edition,

(*6*) NQA–1a–1986 Addenda,

(*7*) NQA–1b–1987 Addenda, and

(*8*) NQA–1c–1988 Addenda.

(*9*) NQA–1–1989 Edition,

(*10*) NQA–1a–1989 Addenda,

(*11*) NQA–1b–1991 Addenda, and

(*12*) NQA–1c–1992 Addenda.

(B) ASME NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications.''

(*1*) NQA–1–1994 Edition,

(*2*) NQA–1a–2008 Edition, and

(*3*) NQA–1a–2009 Addenda.

* * * * *

(b) *Use and conditions on the use of standards.* Systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements of the ASME Boiler and Pressure Vessel Code (BPV Code) and the ASME Operation and Maintenance of Nuclear Power Plants (OM Code) as specified in this paragraph. Each combined license for a utilization facility is subject to the following conditions.

(1) *Conditions on ASME BPV Code Section III.* Each manufacturing license, standard design approval, and design certification under part 52 of this chapter is subject to the following conditions. As used in this section, references to Section III refer to Section III of the ASME Boiler and Pressure Vessel Code and include the 1963 Edition through 1973 Winter Addenda and the 1974 Edition (Division 1) through the 2013 Edition (Division 1), subject to the following conditions:

* * * * *

(ii) *Section III condition: Weld leg dimensions.* When applying the 1989 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1) of this section, applicants and licensees may not apply the Section III provisions identified in Table 1 of this section for welds with leg size less than 1.09 t_n

TABLE 1 OF § 50.55A—PROHIBITED CODE PROVISIONS

Editions and Addenda	Code provision
1989 Addenda through 2013 Edition	Subparagraph NB–3683.4(c)(1). Subparagraph NB–3683.4(c)(2).
1989 Addenda through 2003 Addenda	Note 11 to Figure NC–3673.2(b)–1. Note 11 to Figure ND–3673.2(b)–1.
2004 Edition through 2010 Edition	Note 13 to Figure NC–3673.2(b)–1. Note 13 to Figure ND–3673.2(b)–1.
2011 Addenda through 2013 Edition	Note 11 to Table NC–3673.2(b)–1. Note 11 to Table ND–3673.2(b)–1.

* * * * *

(iv) *Section III condition: Quality assurance.* When applying editions and addenda later than the 1989 Edition of Section III, the requirements of NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications,'' 1983 Edition through the 1994 Edition, 2008 Edition, and the 2009–1a Addenda specified in either NCA–4000 or NCA–7000 of that edition and addenda of Section III may be used by an applicant or licensee 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 10 CFR part 50 quality assurance program; and that commitments contained in the applicant's or licensee's quality assurance program description which are either more stringent than those contained in NQA–1 or have no comparable provision in NQA–1 or Section III, govern the applicant's or licensee's Section III activities.

* * * * *

(vii) *Section III condition: Capacity certification and demonstration of function of incompressible-fluid pressure-relief valves.* When applying the 2006 Addenda through the 2013 Edition, applicants and licensees may use paragraph NB–7742, except that paragraph NB–7742(a)(2) may not be used. For a valve design of a single size to be certified over a range of set pressures, the demonstration of function tests under paragraph NB–7742 must be conducted as prescribed in NB–7732.2 on two valves covering the minimum set pressure for the design and the maximum set pressure that can be accommodated at the demonstration facility selected for the test.

(viii) *Section III condition: Use of ASME certification marks.* When applying editions and addenda earlier than the 2011 Addenda to the 2010 Edition, licensees may use either the ASME BPV Code Symbol Stamps or the ASME Certification Marks with the appropriate certification designators and class designators as specified in the 2013 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1) of this section.

(2) *Conditions on ASME BPV Code, Section XI.* As used in this section, references to Section XI refer to Section XI, Division 1, of the ASME Boiler and Pressure Vessel Code, and include the 1970 Edition through the 1976 Winter Addenda and the 1977 Edition through the 2013 Edition (excluding Nonmandatory Appendix U), subject to the following conditions:

* * * * *

(vi) *Section XI condition: Effective edition and addenda of Subsection IWE and Subsection IWL.* Licensees that implemented the expedited examination of containment, in accordance with Subsection IWE and Subsection IWL, during the period from September 9, 1996, to September 9, 2001, may use either the 1992 Edition with the 1992 Addenda or the 1995 Edition with the 1996 Addenda of Subsection IWE and Subsection IWL, as conditioned by the requirements in paragraphs (b)(2)(viii) and (ix) of this section, when implementing the initial 120-month inspection interval for the containment inservice inspection requirements of this section. Successive 120-month interval updates must be implemented in accordance with paragraph (g)(4)(ii) of this section.

* * * * *

(viii) *Section XI condition: Concrete containment examinations.* Applicants or licensees applying Subsection IWL, 1992 Edition with the 1992 Addenda, must apply paragraphs (b)(2)(viii)(A) through (E) of this section. Applicants or licensees applying Subsection IWL, 1995 Edition with the 1996 Addenda, must apply paragraphs (b)(2)(viii)(A), (b)(2)(viii)(D)(*3*), and (b)(2)(viii)(E) of this section. Applicants or licensees applying Subsection IWL, 1998 Edition through the 2000 Addenda, must apply paragraphs (b)(2)(viii)(E) and (F) of this section. 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 latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, must apply paragraph (b)(2)(viii)(H) and (b)(2)(viii)(I) of this section.

* * * * *

(H) *Concrete containment examinations: Eighth provision.* For each inaccessible area of concrete identified for evaluation under IWL–2512, the licensee must provide the applicable information specified in paragraphs (b)(2)(viii)(E)(1), (b)(2)(viii)(E)(2), and (b)(2)(viii)(E)(3) of this section in the ISI Summary Report required by IWA–6000.

(I) *Concrete containment examinations: Ninth provision.* During the period of extended operation of a renewed license under part 54 of this chapter, the licensee must perform the technical evaluation under IWL–2512(b) of inaccessible below-grade concrete surfaces exposed to foundation soil, backfill, or groundwater at periodic intervals not to exceed 5 years. In addition, the licensee must examine representative samples of the exposed portions of the below-grade concrete, when such below-grade concrete is excavated for any reason.

* * * * *

(ix) *Section XI condition: Metal containment examinations.* Applicants or licensees applying Subsection IWE, 1992 Edition with the 1992 Addenda, or the 1995 Edition with the 1996 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) through (E) of this section. Applicants or licensees applying Subsection IWE, 1998 Edition through the 2001 Edition with the 2003 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B) and (b)(2)(ix)(F) through (I) 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) and (b)(2)(ix)(F) through (H) 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) of this section. Applicants or licensees applying Subsection IWE, 2007 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)(A)(2) and (b)(2)(ix)(B) and (J) of this section.

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(D) *Metal containment examinations: Fourth provision.* This paragraph (b)(2)(ix)(D) may be used as an alternative to the requirements of IWE–2430. If the examinations reveal flaws or areas of degradation exceeding the acceptance standards of Table IWE–3410–1, an evaluation must be performed to determine whether additional component examinations are required. For each flaw or area of degradation identified that exceeds acceptance standards, the applicant or licensee must provide the following in the ISI Summary Report required by IWA–6000:

(*1*) A description of each flaw or area, including the extent of degradation, and the conditions that led to the degradation;

(*2*) The acceptability of each flaw or area and the need for additional examinations to verify that similar degradation does not exist in similar components;

(*3*) A description of necessary corrective actions; and

(*4*) The number and type of additional examinations to ensure detection of similar degradation in similar components.

* * * * *

(x) *Section XI condition: Quality assurance.* When applying the editions and addenda later than the 1989 Edition of ASME BPV Code, Section XI, the edition and addenda of NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications,'' 1983 Edition through the 1994 Edition, the 2008 Edition, and the 2009–1a Addenda specified in either IWA–1400 or Table IWA 1600–1 of that edition and addenda of Section XI, may be used by a licensee provided that the licensee uses its appendix B to 10 CFR part 50 quality assurance program in conjunction with Section XI requirements. Commitments contained in the licensee's quality assurance program description that are more stringent than those contained in NQA–1 must govern Section XI activities. Further, where NQA–1 and Section XI do not address the commitments contained in the licensee's appendix B quality assurance program description, the commitments must be applied to Section XI activities.

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(xviii) * * *

(D) *NDE personnel certification: Fourth provision.* The use of Appendix VII and subarticle VIII–2200 of the 2011 Addenda and 2013 Edition of Section XI of the ASME BPV Code is prohibited. When using ASME BPV Code, Section XI editions and addenda later than the 2010 Edition, licensees and applicants must use the prerequisites for ultrasonic examination personnel certifications in Table VII–4110–1 and subarticle VIII–2200, Appendix VIII in the 2010 Edition.

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(xxi) * * *

(A) *Table IWB–2500–1 examination requirements: First provision.* The provisions of Table IWB 2500–1, Examination Category B–D, Full Penetration Welded Nozzles in Vessels, Items B3.40 and B3.60 (Inspection Program A) and Items B3.120 and B3.140 (Inspection Program B) of the 1998 Edition must be applied when using the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section. A visual examination with magnification that has a resolution sensitivity to resolve 0.044 inch (1.1 mm) lower case characters without an ascender or descender (*e.g.,* a, e, n, v), utilizing the allowable flaw length criteria in Table IWB–3512–1, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, with a limiting assumption on the flaw aspect ratio (*i.e.,* a/l = 0.5), may be performed instead of an ultrasonic examination.

* * * * *

(xxx) *Section XI condition: Steam generator preservice examinations.* Prior to plant start up with a newly installed steam generator, a 100 percent full length examination will be conducted of the tubing in each new steam generator instead of the preservice inspection requirements of IWB–2200(c).

(xxxi) *Section XI condition: Mechanical clamping devices.* The use of mechanical clamping devices on Class 1 piping and portions of piping systems that form the containment boundary is prohibited.

(xxxii) *Section XI condition: Summary report submittal.* When using ASME BPV Code, Section XI, 2010 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, Summary Reports described in IWA–6000 must be submitted to the NRC. Preservice inspection summary reports shall be submitted prior to the date of placement of the unit into commercial service and inservice inspection summary reports shall be submitted within 90 calendar days of the completion of each refueling outage.

(xxxiii) *Section XI condition: Risk-Informed allowable pressure.* The use of Paragraph G–2216 in Appendix G in the 2011 Addenda and later editions and addenda of the ASME BPV Code, Section XI is prohibited.

(xxxiv) *Section XI condition: Disposition of flaws in Class 3 components.* When using the 2013 Edition of the ASME BPV Code, Section XI, to disposition flaws in Examination Category D–A components (*i.e.,* welded attachments for vessels, piping, pumps, and valves), the acceptance standards of IWD–3510 must be used.

(xxxv) *Section XI condition: Use of RT_{T0} in the K_{Ia} and K_{Ic} equations.* When using the 2013 Edition of the ASME BPV Code, Section XI, Appendix A, paragraph A–4200, if T_0 is available, then RT_{T0} may be used in place of RT_{NDT} for applications using the K_{Ic} equation and the associated K_{Ic} curve, but not for applications using the K_{Ia} equation and the associated K_{Ia} curve.

(xxxvi) *Section XI condition: Fracture toughness of irradiated materials.* When using the 2013 Edition of the ASME BPV Code, Section XI, Appendix A paragraph A–4400, the licensee shall obtain NRC approval before using irradiated T_0 and the associated RT_{T0} in establishing fracture toughness of irradiated materials.

(xxxvii) *Section XI condition: ASME BPV Code Case N–824.* Licensees may use the provisions of ASME BPV Code Case N–824, ''Ultrasonic Examination of Cast Austenitic Piping Welds From the Outside Surface Section XI, Division 1,'' subject to the following conditions.

(A) Ultrasonic examinations must be spatially encoded.

(B) Instead of Paragraph 1(c)(1)(–a) licensees shall use dual, transmit-receive, refracted longitudinal wave, multi-element phased array search units.

(C) Instead of Paragraph 1(c)(1)(–c)(–1), licensees shall use a phased array search unit with a center frequency between 500 kHz and 1 MHz.

(D) Instead of Paragraph 1(c)(1)(–c)(–2), licensees shall use a phased array search unit with a center frequency of 500 kHz.

(E) Instead of Paragraph 1(c)(1)(–d), the phased array search unit must

produce angles from 30 to 70 degrees with a maximum increment of 5 degrees.

(3) *Conditions on ASME OM Code.* As used in this section, references to the OM Code are to the ASME OM Code, Subsections ISTA, ISTB, ISTC, ISTD, ISTE, and ISTF; Mandatory Appendices I, II, III, and V; and Nonmandatory Appendices A through H and J through M, in the 1995 Edition through the 2012 Edition as specified in paragraph (a)(1)(iv). The following conditions are applicable when implementing the ASME OM Code:

(i) *OM condition: Quality assurance.* When applying editions and addenda of the OM Code, the requirements of ASME Standard NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications,'' 1983 Edition through the 1994 Edition, 2008 Edition, and 2009–1a Addenda, are acceptable as permitted by either ISTA 1.4 of the 1995 Edition through 1997 Addenda or ISTA–1500 of the 1998 Edition through the latest edition and addenda of the OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, provided the licensee uses its appendix B to 10 CFR part 50 quality assurance program in conjunction with the OM Code requirements. Commitments contained in the licensee's quality assurance program description that are more stringent than those contained in NQA–1 govern OM Code activities. If NQA–1 and the OM Code do not address the commitments contained in the licensee's appendix B quality assurance program description, the commitments must be applied to OM Code activities.

(ii) *OM condition: Motor-Operated Valve (MOV) testing.* Licensees must comply with the provisions for testing MOVs in 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 OM Code, Mandatory Appendix III, ''Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants,'' of the 2009 Edition, 2011 Addenda, and 2012 Edition shall comply with the following conditions:

(A) *MOV diagnostic test interval.* Licensees shall evaluate the adequacy of the diagnostic test interval for each MOV and adjust the interval as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OM Code, Appendix III.

(B) *MOV testing impact on risk.* Licensees shall ensure that the potential increase in core damage frequency and large early release frequency associated with the extension is acceptably small when extending exercise test intervals for high risk MOVs beyond a quarterly frequency.

(C) *MOV risk categorization.* When applying Appendix III to the OM Code, licensees shall categorize MOVs according to their safety significance using the methodology described in ASME OM Code Case OMN–3, ''Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants,'' subject to the conditions applicable to OMN–3 which are set forth in Regulatory Guide 1.192, or using an MOV risk ranking methodology accepted by the NRC on a plant-specific or industry-wide basis in accordance with the conditions in the applicable safety evaluation.

(D) *MOV stroke time.* When applying Paragraph III–3600, ''MOV Exercising Requirements,'' of Appendix III to the OM Code, licensees shall verify that the stroke time of the MOV satisfies the assumptions in the plant safety analyses.

(iii) *OM condition: New Reactors.* In addition to complying with the provisions in the OM Code with the conditions specified in paragraph (b)(3) of this section, holders of operating licenses for nuclear power reactors that received construction permits under this part on or after the date 12 months after [the effective date of the final rule], and holders of combined licenses issued under 10 CFR part 52, whose initial fuel loading occurs on or after the date 12 months after [the effective date of the final rule] shall also comply with the following conditions, as applicable:

(A) *Power-operated valves.* Licensees shall periodically verify the capability of power-operated valves to perform their design-basis safety functions.

(B) *Check valves.* Licensees must perform bi-directional testing of check valves within the IST program where practicable.

(C) *Flow-induced vibration.* Licensees shall monitor flow-induced vibration from hydrodynamic loads and acoustic resonance during preservice testing and inservice testing to identify potential adverse flow effects on components within the scope of the IST program.

(D) *High risk non-safety systems.* Licensees shall assess the operational readiness of pumps, valves, and dynamic restraints within the scope of the Regulatory Treatment of Non-Safety Systems for applicable reactor designs.

(iv) *OM condition: Check valves (Appendix II).* Appendix II, ''Check Valve Condition Monitoring Program,'' of the OM Code, 2003 Addenda through the 2012 Edition, is acceptable for use without conditions with the clarifications that (1) the maximum test interval allowed by Appendix II for individual check valves in a group of two valves or more must be supported by periodic testing of a sample of check valves in the group during the allowed interval and (2) the periodic testing plan must be designed to test each valve of a group at approximate equal intervals not to exceed the maximum requirement interval. Licensees applying Appendix II of the OM Code, 1995 Edition with the 1996 and 1997 Addenda, shall satisfy the requirements of paragraphs (b)(3)(iv)(A) through (C) of this section. Licensees applying Appendix II, 1998 Edition through the 2012 Edition, shall satisfy the requirements of paragraphs (b)(3)(iv)(A), (B), and (D) of this section.

* * * * *

(vii) *OM condition: Subsection ISTB.* Subsection ISTB, 2011 Addenda, is prohibited for use.

(viii) *OM condition: Subsection ISTE.* Licensees may not implement the risk-informed approach for inservice testing (IST) of pumps and valves specified in Subsection ISTE, ''Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants,'' in the OM Code, 2009 Edition, 2011 Addenda, or 2012 Edition, without first obtaining NRC authorization to use Subsection ISTE as an alternative to the applicable IST requirements in the OM Code pursuant to § 50.55a(z).

(ix) *OM condition: Subsection ISTF.* Licensees applying Subsection ISTF, 2012 Edition, shall satisfy the requirements of Mandatory Appendix V, ''Pump Periodic Verification Test Program,'' of the ASME OM Code, 2012 Edition. Subsection ISTF, 2011 Addenda, is not acceptable for use.

(x) *OM condition: ASME OM Code Case OMN–20.* Licensees may implement ASME OM Code Case OMN–20, ''Inservice Test Frequency,'' which is incorporated by reference in paragraph (a)(1)(iii)(E) of this section.

(xi) *OM condition: Valve Position Indication.* When implementing ASME OM Code, Subsection ISTC–3700, ''Position Verification Testing,'' licensees shall develop and implement a method to verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable

instrumentation, to provide assurance of proper obturator position.

(4) *Conditions on Design, Fabrication, and Materials Code Cases.* Each manufacturing license, standard design approval, and design certification application under part 52 of this chapter is subject to the following conditions. Licensees may apply the ASME BPV Code Cases listed in NRC Regulatory Guide 1.84, as incorporated by reference in paragraph (a)(3)(i) of this section, without prior NRC approval, subject to the following conditions:

* * * * *

(5) *Conditions on inservice inspection Code Cases.* Licensees may apply the ASME BPV Code Cases listed in NRC Regulatory Guide 1.147, as incorporate by reference in paragraph (a)(3)(ii) of this section, without prior NRC approval, subject to the following:

(i) *ISI Code Case condition: Applying Code Cases.* When a licensee initially applies a listed Code Case, the licensee must apply the most recent version of that Code Case incorporated by reference in paragraph (a) of this section.

(ii) *ISI Code Case condition: Applying different revisions of Code Cases.* If a licensee has previously applied a Code Case and a later version of the Code Case is incorporated by reference in paragraph (a) of this section, the licensee may continue to apply, to the end of the current 120-month interval, the previous version of the Code Case, as authorized, or may apply the later version of the Code Case, including any NRC-specified conditions placed on its use. Licensees who choose to continue use of the Code Case during subsequent 120-month ISI program intervals will be required to implement the latest version incorporated by reference into 10 CFR 50.55a as listed in Tables 1 and 2 of NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section.

(iii) *ISI Code Case condition: Applying annulled Code Cases.* Application of an annulled Code Case is prohibited unless a licensee previously applied the listed Code Case prior to it being listed as annulled in NRC Regulatory Guide 1.147. If a licensee has applied a listed Code Case that is later listed as annulled in NRC Regulatory Guide 1.147, the licensee may continue to apply the Code Case to the end of the current 120-month interval.

(6) *Conditions on Operation and Maintenance of Nuclear Power Plants Code Cases.* Licensees may apply the ASME Operation and Maintenance Code Cases listed in NRC Regulatory Guide 1.192, as incorporated by reference in paragraph (a)(3)(iii), without prior NRC approval, subject to the following:

(i) *OM Code Case condition: Applying Code Cases.* When a licensee initially applies a listed Code Case, the licensee must apply the most recent version of that Code Case incorporated by reference in paragraph (a) of this section.

(ii) *OM Code Case condition: Applying different revisions of Code Cases.* If a licensee has previously applied a Code Case and a later version of the Code Case is incorporated by reference in paragraph (a) of this section, the licensee may continue to apply, to the end of the current 120-month interval, the previous version of the Code Case, as authorized, or may apply the later version of the Code Case, including any NRC-specified conditions placed on its use. Licensees who choose to continue use of the Code Case during subsequent 120-month ISI program intervals will be required to implement the latest version incorporated by reference into 10 CFR 50.55a as listed in Tables 1 and 2 of NRC Regulatory Guide 1.192, as incorporated by reference in paragraph (a)(3)(iii) of this section.

(iii) *OM Code Case condition: Applying annulled Code Cases.* Application of an annulled Code Case is prohibited unless a licensee previously applied the listed Code Case prior to it being listed as annulled in NRC Regulatory Guide 1.192. If a licensee has applied a listed Code Case that is later listed as annulled in NRC Regulatory Guide 1.192, the licensee may continue to apply the Code Case to the end of the current 120-month interval.

* * * * *

(f) *Inservice testing requirements.* Systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements for preservice and inservice testing (referred to in this paragraph collectively as inservice testing) of the ASME BPV Code and ASME OM Code as specified in this paragraph. Each operating license for a boiling or pressurized water-cooled nuclear facility is subject to the following conditions. Each combined license for a boiling or pressurized water-cooled nuclear facility is subject to the following conditions, but the conditions in paragraphs (f)(4) through (6) of this section must be met only after the Commission makes the finding under § 52.103(g) of this chapter. Requirements for inservice inspection of Class 1, Class 2, Class 3, Class MC, and Class CC components (including their supports) are located in § 50.55a(g).

* * * * *

(2) *Design and accessibility requirements for performing inservice testing in plants with CPs issued between 1971 and 1974.* For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued on or after January 1, 1971, but before July 1, 1974, pumps and valves that are classified as ASME Code Class 1 and Class 2 must be designed and provided with access to enable the performance of inservice tests for operational readiness set forth in editions and addenda of Section XI of the ASME BPV incorporated by reference in paragraph (a)(1)(ii) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147 or NRC Regulatory Guide 1.192, as incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively) in effect 6 months before the date of issuance of the construction permit. The pumps and valves may meet the inservice test requirements set forth in subsequent editions of this Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147 or NRC Regulatory Guide 1.192, as incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively), subject to the applicable conditions listed therein.

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(3) * * *

(iii) * * *

(A) *Class 1 pumps and valves: First provision.* In facilities whose construction permit was issued before November 22, 1999, pumps and valves that are classified as ASME Code Class 1 must be designed and provided with access to enable the performance of inservice testing of those pumps and valves within the scope of the ASME OM Code for assessing operational readiness, as set forth in either the editions and addenda of Section XI of the ASME BPV Code incorporated by reference in paragraph (a)(1)(ii) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147 or NRC Regulatory Guide 1.192, as incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively) which are applied to the construction of the particular pump or valve or the summer 1973 Addenda, whichever is later.

(B) *Class 1 pumps and valves: Second provision.* In facilities whose construction permit under this part, or design certification, design approval, combined license, or manufacturing license under part 52 of this chapter, issued on or after November 22, 1999,

pumps and valves that are classified as ASME Code Class 1 must be designed and provided with access to enable the performance of inservice testing of those pumps and valves within the scope of the ASME OM Code for assessing operational readiness, as set forth in editions and addenda of the ASME OM Code (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.192, as incorporated by reference in paragraph (a)(3)(iii) of this section), incorporated by reference in paragraph (a)(1)(iv) of this section at the time the construction permit, combined license, manufacturing license, design certification, or design approval is issued.

(iv) * * *

(A) *Class 2 and 3 pumps and valves: First provision.* In facilities whose construction permit was issued before November 22, 1999, pumps and valves that are classified as ASME Code Class 2 and Class 3 that are within the scope of the ASME OM Code and are not covered by paragraph (f)(3)(iii)(A) of this section must be designed and be provided with access to enable the performance of inservice testing of the pumps and valves for assessing operational readiness set forth in the editions and addenda of Section XI of the ASME BPV Code incorporated by reference in paragraph (a)(1)(ii) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section) applied to the construction of the particular pump or valve or the Summer 1973 Addenda, whichever is later.

(B) *Class 2 and 3 pumps and valves: Second provision.* In facilities whose construction permit under this part, or design certification, design approval, combined license, or manufacturing license under part 52 of this chapter, issued on or after November 22, 1999, pumps and valves that are classified as ASME Code Class 2 and 3 that are within the scope of the ASME OM Code and are not covered by paragraph (f)(3)(iii)(B) of this section must be designed and provided with access to enable the performance of inservice testing of the pumps and valves for assessing operational readiness set forth in editions and addenda of the ASME OM Code (or the optional ASME OM Code Cases listed in NRC Regulatory Guide 1.192, as incorporated by reference in paragraph (a)(3)(iii) of this section), incorporated by reference in paragraph (a)(1)(iv) of this section at the time the construction permit, combined license, or design certification is issued.

* * * * *

(4) *Inservice testing standards requirement for operating plants.* Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the inservice test requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in paragraphs (f)(2) and (3) of this section and that are incorporated by reference in paragraph (a)(1)(iv) of this section, to the extent practical within the limitations of design, geometry, and materials of construction of the components.

(i) *Applicable IST Code: Initial 120-month interval.* Inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, conducted during the initial 120-month interval must comply with the requirements in the latest edition and addenda of the OM Code incorporated by reference in paragraph (a)(1)(iv) of this section on the date 12 months before the date of issuance of the operating license under this part, or 12 months before the date scheduled for initial loading of fuel under a combined license under part 52 of this chapter (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.192, as incorporated by reference in paragraph (a)(3)(iii) of this section, subject to the conditions listed in paragraph (b) of this section).

(ii) *Applicable IST Code: Successive 120-month intervals.* Inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the OM Code incorporated by reference in paragraph (a)(1)(iv) of this section 12 months before the start of the 120-month interval (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147 or NRC Regulatory Guide 1.192 as incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively), subject to the conditions listed in paragraph (b) of this section.

* * * * *

(g) *Preservice and inservice inspection requirements.* Systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements of the ASME BPV Code as specified in this paragraph. Each operating license for a boiling or pressurized water-cooled nuclear facility is subject to the following conditions. Each combined license for a boiling or pressurized water-cooled nuclear facility is subject to the following conditions, but the conditions in paragraphs (g)(4) through (6) of this section must be met only after the Commission makes the finding under § 52.103(g) of this chapter. Requirements for inservice testing of Class 1, Class 2, and Class 3 pumps and valves are located in § 50.55a(f).

* * * * *

(2) *Accessibility requirements*—(i) *Accessibility requirements for plants with CPs issued between 1971 and 1974.* For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued on or after January 1, 1971, but before July 1, 1974, components that are classified as ASME Code Class 1 and Class 2 and supports for components that are classified as ASME Code Class 1 and Class 2 must be designed and be provided with the access necessary to perform the required preservice and inservice examinations set forth in editions and addenda of Section III or Section XI of the ASME BPV Code incorporated by reference in paragraph (a)(1) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section) in effect 6 months before the date of issuance of the construction permit.

(ii) *Accessibility requirements for plants with CPs issued after 1974.* For a boiling or pressurized water-cooled nuclear power facility, whose construction permit under this part, or design certification, design approval, combined license, or manufacturing license under part 52 of this chapter, was issued on or after July 1, 1974, components that are classified as ASME Code Class 1, Class 2, and Class 3 and supports for components that are classified as ASME Code Class 1, Class 2, and Class 3 must be designed and provided with the access necessary to perform the required preservice and inservice examinations set forth in editions and addenda of Section III or Section XI of the ASME BPV Code incorporated by reference in paragraph (a)(1) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section) applied to the construction of the particular component.

(iii) *Accessibility requirements: Meeting later Code requirements.* All components (including supports) may meet the requirements set forth in subsequent editions of codes and addenda or portions thereof that are

incorporated by reference in paragraph (a) of this section, subject to the conditions listed therein.

(3) *Preservice examination requirements*—(i) *Preservice examination requirements for plants with CPs issued between 1971 and 1974.* For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued on or after January 1, 1971, but before July 1, 1974, components that are classified as ASME Code Class 1 and Class 2 and supports for components that are classified as ASME Code Class 1 and Class 2 must meet the preservice examination requirements set forth in editions and addenda of Section III or Section XI of the ASME BPV Code incorporated by reference in paragraph (a)(1) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section) in effect 6 months before the date of issuance of the construction permit.

(ii) *Preservice examination requirements for plants with CPs issued after 1974.* For a boiling or pressurized water-cooled nuclear power facility, whose construction permit under this part, or design certification, design approval, combined license, or manufacturing license under part 52 of this chapter, was issued on or after July 1, 1974, components that are classified as ASME Code Class 1, Class 2, and Class 3 and supports for components that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the preservice examination requirements set forth in the editions and addenda of Section III or Section XI of the ASME BPV Code incorporated by reference in paragraph (a)(1) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section) applied to the construction of the particular component.

* * * * *

(v) *Preservice examination requirements: Meeting later Code requirements.* All components (including supports) may meet the requirements set forth in subsequent editions of codes and addenda or portions thereof that are incorporated by reference in paragraph (a) of this section, subject to the conditions listed therein.

* * * * *

(4) * * *

(i) *Applicable ISI Code: Initial 120-month interval.* Inservice examination of components and system pressure tests conducted during the initial 120-month inspection interval must comply with the requirements in the latest edition and addenda of the Code incorporated by reference in paragraph (a) of this section on the date 12 months before the date of issuance of the operating license under this part, or 12 months before the date scheduled for initial loading of fuel under a combined license under part 52 of this chapter (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, when using Section XI, or NRC Regulatory Guide 1.192, when using the OM Code, as incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively), subject to the conditions listed in paragraph (b) of this section.

(ii) *Applicable ISI Code: Successive 120-month intervals.* Inservice examination of components and system pressure tests conducted during successive 120-month inspection intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph (a) of this section 12 months before the start of the 120-month inspection interval (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, when using Section XI, or NRC Regulatory Guide 1.192, when using the OM Code, as incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section), subject to the conditions listed in paragraph (b) of this section. However, a licensee whose inservice inspection interval commences during the 12 through 18-month period after July 21, 2011, may delay the update of their Appendix VIII program by up to 18 months after July 21, 2011.

* * * * *

(6) * * *

(ii) * * *

(D) * * *

(*1*) *Implementation:* Holders of operating licenses or combined licenses for pressurized-water reactors as of or after [the effective date of the final rule] shall implement the requirements of ASME BPV Code Case N–729–4 instead of ASME BPV Code Case N–729–1, subject to the conditions specified in paragraphs (g)(6)(ii)(D)(*2*) through (*4*) of this section, by the first refueling outage starting after [the effective date of the final rule].

(*2*) *Appendix I use:* Appendix I of ASME BPV Code Case N–729–4 shall not be implemented without prior NRC approval.

(*3*) *Bare metal visual frequency:* Instead of Note 4 of ASME BPV Code Case N–729–4, the following shall be implemented; If EDY<8 and if no flaws are found that are attributed to PWSCC; (a) A bare metal visual examination is not required during refueling outages when a volumetric or surface examination is performed, (b) If a wetted surface examination has been performed of all of the partial penetration welds during the previous non-visual examination, the reexamination frequency may be extended to every third refueling outage or 5 calendar years, whichever is less, provided an IWA–2212 VT–2 visual examination of the head is performed under the insulation through multiple access points in outages that the VE is not completed. This IWA–2212 VT–2 visual examination may be performed with the reactor vessel depressurized.

(*4*) *Surface exam acceptance criteria:* In addition to the requirements of paragraph-3132.1(b) of ASME BPV Code Case N–729–4, a component whose surface examination detects rounded indications greater than allowed in Paragraph NB–5352 in size on the partial-penetration or associated fillet weld shall be classified as having an unacceptable indication and corrected in accordance with the provisions of paragraph-3132.2 of ASME BPV Code Case N–729–4.

* * * * *

(F) * * *

(*1*) *Implementation:* Holders of operating licenses or combined licenses for pressurized-water reactors as of or after [the effective date of the final rule] shall implement the requirements of ASME BPV Code Case N–770–2 instead of ASME BPV Code Case N–770–1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(*2*) through (*13*) of this section, by the first refueling outage starting after [the effective date of the final rule].

(*2*) *Categorization:* Full structural weld overlays, authorized by the NRC staff in accordance with the alternatives approval process of this section, may be categorized as Inspection Items C–1 or F–1, as appropriate. Welds that have been mitigated by the Mechanical Stress Improvement Process (MSIP™) may be categorized as Inspection Items D or E, as appropriate, provided the criteria in Appendix I of the code case have been met. For the purpose of determining ISI frequencies, all other butt welds that rely on Alloy 82/182 for structural integrity shall be categorized as Inspection Items A–1, A–2, or B until the NRC staff has reviewed the mitigation and authorized an alternative code case Inspection Item for the mitigated weld, or an alternative code case Inspection Item is used based on

conformance with an ASME mitigation code case endorsed in NRC Regulatory Guide 1.147 with any applying conditions specified in NRC Regulatory Guide 1.147, as incorporated by reference in paragraph (a)(3)(ii) of this section. Paragraph-1100(e) of ASME BPV Code Case N–770–2 shall not be used to exempt welds that rely on Alloy 82/182 for structural integrity from any requirement of paragraph (g)(6)(ii)(F) of this section.

(*3*) *Baseline examinations:* Baseline examinations for welds in Table 1 of ASME BPV Code Case N–770–2, Inspection Items A–1, A–2, and B, if not previously performed or currently scheduled to be performed in an ongoing refueling outage at the time this rule becomes effective, in accordance with paragraph (g)(6)(ii)(F) of this section, shall be completed by the end of the next refueling outage. Previous examinations of these welds can be credited for baseline examinations only if they were performed within the re-inspection period for the weld item in Table 1 of ASME BPV Code Case N–770–2 and the examination of each weld meets the examination requirements of paragraphs -2500(a) or -2500(b) of ASME BPV Code Case N–770–2. Other previous examinations that do not meet these requirements can be used to meet the baseline examination requirement, provided NRC approval in accordance with paragraphs (z)(1) or (2) of this section, is granted prior to the end of the next refueling outage.

(*4*) *Examination coverage:* When implementing paragraph-2500(a) of ASME Code Case N–770–2, essentially 100 percent volumetric examination coverage shall be obtained, including greater than 90 percent volumetric examination coverage for circumferential flaws. Licensees are prohibited from using Paragraph-2500(c) and -2500(d) of ASME BPV Code Case N–770–2 to meet examination requirements.

(*5*) *Inlay/onlay inspection frequency:* All hot-leg operating temperature welds in Inspection Items G, H, J, and K shall be inspected each inspection interval. A 25 percent sample of Inspection Items G, H, J, and K cold-leg operating temperature welds shall be inspected whenever the core barrel is removed (unless it has already been inspected within the past 10 years) or within 20 years, whichever is less.

(*6*) *Reporting requirements:* For any mitigated weld whose volumetric examination detects growth of existing flaws in the required examination volume that exceed the previous IWB–3600 flaw evaluations or new flaws, a report summarizing the evaluation, along with inputs, methodologies, assumptions, and causes of the new flaw or flaw growth is to be provided to the NRC prior to the weld being placed in service other than modes 5 or 6.

(*7*) *Defining ''t'':* For Inspection Items G, H, J, and K, when applying the acceptance standards of ASME BPV Code, Section XI, IWB–3514, for planar flaws contained within the inlay or onlay, the thickness ''t'' in IWB–3514 is the thickness of the inlay or onlay. For planar flaws in the balance of the dissimilar metal weld examination volume, the thickness ''t'' in IWB–3514 is the combined thickness of the inlay or onlay and the dissimilar metal weld.

(*8*) *Optimized weld overlay examination:* Initial inservice examination of Inspection Item C–2 welds, shall be performed between the third refueling outage and no later than 10 years after application of the overlay.

(*9*) *Deferral:* Note (11)(b)(1) in ASME BPV Code Case N–770–2 shall not be used to defer the initial inservice examination of optimized weld overlays (*i.e.,* Inspection Item C–2 of ASME BPV Code Case N–770–2).

(*10*) *Examination technique:* Note 14(b) of Table 1 and Note (b) of Figure 5(a) of ASME BPV Code Case N–770–2 may only be implemented if the requirements of Note 14(a) of Table 1 of ASME BPV Code Case N–770–2 cannot be met.

(*11*) *Cast stainless steel:* Examination of ASME Code Class 1 piping and vessel nozzle butt welds involving cast stainless steel materials, shall be performed with Appendix VIII, Supplement 9 qualifications, or qualifications similar to Appendix VIII, Supplement 2 or 10 using cast stainless steel mockups no later than the next scheduled weld examination after January 1, 2020, in accordance with the requirements of paragraph-2500(a).

(*12*) *Stress improvement inspection coverage:* Under Paragraph I.5.1, for cast stainless steel items, the required examination volume shall be examined by Appendix VIII procedures to the maximum extent practical including 100 percent of the susceptible material volume.

(*13*) *Encoded ultrasonic examination:* Ultrasonic examinations performed in accordance with the requirements of Table 1 for Inspection Item A–1, A–2, B, E, F–2, J, and K shall be performed for essentially 100 percent of the inspection surface area using an encoded method.

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Dated at Rockville, Maryland, this 21st day of August 2015.

For the Nuclear Regulatory Commission.

Michele G. Evans,

Acting Director, Office of Nuclear Reactor Regulation.

[FR Doc. 2015–23193 Filed 9–17–15; 8:45 am]

BILLING CODE 7590–01–P