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10 CFR Part 50
Approval of American Society of Mechanical Engineers' Code Cases; Final Rule

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

[NRC–2009–0359; NRC–2013–0133]

RIN 3150–AI72

Approval of American Society of Mechanical Engineers' Code Cases

AGENCY: Nuclear Regulatory Commission.

ACTION: Final rule.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to incorporate by reference the latest revisions of three NRC Regulatory Guides (RGs) approving new and revised Code Cases published by the American Society of Mechanical Engineers. This action allows nuclear power plant licensees, and applicants for construction permits, operating licenses, combined licenses, standard design certifications, standard design approvals, and manufacturing licenses, to use the Code Cases listed in these RGs, as alternatives to engineering standards for the construction, inservice inspection, and inservice testing of nuclear power plant components. This final rule changes NRC's regulations to address a petition for rulemaking (PRM), PRM–50–89, submitted by Mr. Raymond West. The final rule also restructures the NRC's requirements governing Codes and standards to align with the Office of the Federal Register's guidelines for incorporating documents by reference.

This final rule announces the availability of the final versions of the three RGs that are being incorporated by reference, and a related RG, not incorporated by reference into the NRC's regulations, that lists Code Cases that the NRC has not a*pproved for use.* For additional information on these RGs, see Section XVII, Availability of Regulatory Guides, of this document.

DATES: This final rule is effective on December 5, 2014. The incorporation by reference of RG 1.84, ''Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,'' Revision 36 (May 2014); RG 1.147, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,'' Revision 17 (May 2014); and RG 1.192, ''Operation and Maintenance Code Case Acceptability, ASME OM Code,'' Revision 1 (May 2014) is approved by the Director of the Office of the Federal Register as of December 5, 2014.

ADDRESSES: Please refer to Docket ID NRC–2009–0359 when contacting the NRC about the availability of information for this final rule and RGs 1.84, 1.147 and 1.192. Please refer to Docket ID NRC–2013–0133 when contacting the NRC about the availability of information for RG 1.193. You may obtain publicly-available information related to this final rule by any of the following methods:

- *Federal Rulemaking Web site:* Go to *http://www.regulations.gov* and search for Docket ID NRC–2009–0359. Address questions about NRC dockets to Carol Gallagher; telephone: 301–287–3422; email: *Carol.Gallagher@nrc.gov.* For technical questions, contact the individuals listed in the **FOR FURTHER INFORMATION CONTACT** section of this final rule.
- *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, the ADAMS accession numbers are provided in a table in the ''Availability of Documents'' section of this document.
- *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.

FOR FURTHER INFORMATION CONTACT: Jenny Tobin, Office of Nuclear Reactor Regulation; telephone: 301–415–2328, email: *Jennifer.Tobin@nrc.gov;* or Wallace Norris, Office of Nuclear Regulatory Research, telephone: 301–251–7650; email: *Wallace.Norris@nrc.gov;* both are staff of the U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001.

Executive Summary

The U.S. Nuclear Regulatory Commission (NRC) is amending its regulations to incorporate by reference the latest revisions of three NRC Regulatory Guides (RGs) approving new and revised Code Cases published by the American Society of Mechanical Engineers (ASME). The three RGs incorporated by reference are RG 1.84, Revision 36; RG 1.147, Revision 17; and RG 1.192, Revision 1. This action allows nuclear power plant licensees, and applicants for construction permits, operating licenses, combined licenses, standard design certifications, standard design approvals, and manufacturing licenses, to use the Code Cases listed in these RGs as alternatives to engineering standards for the construction, inservice inspection, and inservice testing of nuclear power plant components.

The NRC is announcing the availability of the final versions of the three RGs that are being incorporated by reference, and a final version of RG 1.193, Revision 4, not incorporated by reference into the NRC's regulations, that lists Code Cases that the NRC has not approved for generic use.

This final rule also includes changes to the NRC's regulations that address a petition for rulemaking (PRM), PRM–50–89, submitted by Mr. Raymond West. Mr. West requested that the NRC amend its regulations to allow consideration of alternatives to NRC-approved ASME Boiler and Pressure Vessel and Operation and Maintenance of Nuclear Power Plants Code Cases. This final rule resolves Mr. West's petition and represents the NRC's final action on PRM–50–89.

Lastly, this final rule resequences the NRC's requirements in § 50.55a of Title 10 of the *Code of Federal Regulations* (10 CFR), governing Codes and standards to align with Office of the Federal Register's guidelines for incorporating published standards by reference.

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I. Background

The American Society of Mechanical Engineers (ASME) develops and publishes the ASME Boiler and Pressure Vessel (BPV) Code, which contains requirements for the design, construction, and inservice inspection (ISI) and examination of nuclear power plant components, and the ASME Code for Operation and Maintenance of Nuclear Power Plants (OM) Code, which contains requirements for inservice testing (IST) of nuclear power plant components. In response to BPV and OM Code user requests, the ASME develops ASME Code Cases that provide alternatives to BPV and OM Code requirements under special circumstances.

The NRC approves and/or mandates the use of the ASME BPV and OM Codes in § 50.55a of Title 10 of the *Code of Federal Regulations* (10 CFR) through the process of incorporation by reference (IBR). As such, each provision of the ASME Codes incorporated by reference into, and mandated by, § 50.55a, ''Codes and standards,'' constitutes a legally-binding NRC requirement imposed by rule. As noted previously, ASME Code Cases, for the most part, represent alternative approaches for complying with provisions of the ASME BPV and OM Codes. Accordingly, the NRC periodically amends § 50.55a to incorporate by reference NRC Regulatory Guides (RGs) listing approved ASME Code Cases that may be used as alternatives to the BPV and OM Codes. See **Federal Register** notice (FRN), ''Incorporation by Reference of ASME BPV and OM Code Cases'' (68 FR 40469; July 8, 2003).

This rulemaking is the latest in a series of rulemakings that incorporate by reference new versions of several RGs identifying new and revised [1] unconditionally or conditionally acceptable ASME Code Cases that are approved for use. In developing these RGs, the NRC staff reviews ASME BPV and OM Code Cases, determines the acceptability of each Code Case, and publishes its findings in the RGs. The RGs are revised periodically as new Code Cases are published by the ASME. The NRC incorporates by reference the RGs listing acceptable and conditionally acceptable ASME Code Cases into § 50.55a. Currently, NRC RG 1.84, Revision 35, ''Design, Fabrication, and Materials Code Case Acceptability, ASME Section III''; RG 1.147, Revision 16, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1''; and RG 1.192, Revision 0, ''Operation and Maintenance Code Case Acceptability, ASME OM Code,'' are incorporated into the NRC's regulations at 10 CFR 50.55a, ''Codes and standards.''

This final rule adds provisions that allow the NRC to authorize alternatives to NRC-approved ASME BPV and OM Code Cases, as requested in a petition for rulemaking (PRM) that was submitted to the NRC on December 14, 2007, and revised on December 19, 2007, by Mr. Raymond West (ADAMS Accession No. ML073600974). A detailed discussion of the PRM is provided in Section V, ''Petition for Rulemaking (PRM–50–89),'' of this document.

II. Opportunity for Public Participation

On June 24, 2013 (78 FR 37886), the NRC published a proposed rule in the **Federal Register** that would incorporate by reference RG 1.84, Revision 36; RG 1.147, Revision 17; and RG 1.192, Revision 1. On the same date, the NRC published a parallel FRN announcing the availability of the three draft RGs and opportunity for public comment (78 FR 37721; June 24, 2013). The NRC provided a 75-day public comment period for both the proposed rule and the draft RGs, which ended on September 9, 2013.

A. Overview of Public Comments

The NRC received a total of 10 comment submissions. The submissions were received from three private citizens, four utility organizations, and three industry groups that provide engineering and inspection services to the utilities. Table I lists the commenter's name and affiliation, ADAMS accession number for the comment submission, and the Code Case or subject of each comment.

TABLE I—COMMENT SUBMISSIONS RECEIVED ON THE PROPOSED RULE AND DRAFT REGULATORY GUIDES

Commenter name	Affiliation	Comment submission ADAMS Accession No.	Affected code cases/subject
William Culp	Private Citizen	ML13210A143	Proposed Rule.
Saige Stephens	Private Citizen	ML13210A151	General.
Richard Swayne	ASME	ML13253A076	N–60–5.
		ML13252A286 **	N–416–4.
			N–561–2.
			N–562–2.
			N–597–2.
			N–606–1.
			N–619.
			N–648–1.
			N–661–2.
			N–702.
			N–739–1.
			N–798.
			N–800.
			N–659–2.
			Proposed Rule.
Mark Richter	Nuclear Energy Institute	ML13259A040	Proposed Rule.
		ML13254A080 **	

[1] ASME Code Cases can be categorized as one of two types: New or revised. A new Code Case provides for a new alternative to specific ASME Code provisions or addresses a new need. A revised Code Case is a revision (modification) to an existing Code Case to address, for example, technological advancements in examination techniques or to address NRC conditions imposed in one of the regulatory guides that have been incorporated by reference into 10 CFR 50.55a.

TABLE I—COMMENT SUBMISSIONS RECEIVED ON THE PROPOSED RULE AND DRAFT REGULATORY GUIDES—Continued

Commenter name	Affiliation	Comment submission ADAMS Accession No.	Affected code cases/subject
Edward Colie	South Carolina Electric and Gas	ML13254A082	Proposed Rule.
Patricia Campbell	GE Hitachi Nuclear Energy	ML13259A038	1332–6.
Devin Kelley	AREVA	ML13259A039	N–71–18.
David Helker	Exelon Generation Company, LLC	ML13269A371	N–60–5. N–798. N–800. N–702.
Shawn Comstock	Private Citizen	ML13182A081	OMN–1 (2006 Addenda). OMN–11 (2006 Addenda). OMN–12 (2004 Edition).
Roy Hall	Inservice Inspection Program Owners Group.	ML13197A239	N–805.

** There are two ADAMS accession numbers for the submissions from ASME and the Nuclear Energy Institute because each submission contained comments on the proposed rule and the drafts RGs. Both accession numbers are for the same incoming submission, but one accession number is identified in ADAMS as a response to the **Federal Register** notice soliciting comments on the proposed rule and the other is identified as a response for the draft RGs.

III. Public Comment Analysis

The NRC has reviewed every comment submission and has identified 42 unique comments requiring NRC consideration and response. Comment summaries and the NRC responses are presented in this section. Comment responses have been organized in two categories: (A) NRC Responses to Public Comments on Proposed Rule and (B) NRC Responses to Public Comments on Draft RGs, further delineated by individual RG (i.e., RG 1.84, RG 1.147, and RG 1.192).

A. NRC Reponses to Public Comments on Proposed Rule

Proposed Rule

Comment: The commenter developed a proposed one-page revision to the overall Codes and standards rule in § 50.55a that reflects the commenter's view of the current regulatory process and suggested parsing the details of § 50.55a to the appropriate RGs. The commenter provided the background and bases for his proposed rule structure, and stated that the purpose of his proposal is to simplify the overall structure of § 50.55a. (Culp–3)

NRC Response: The main purpose of this rulemaking is to amend § 50.55a to incorporate by reference the latest revisions of three RGs approving new and revised Code Cases published by ASME. This rulemaking also proposes to: (1) Resolve a petition for rulemaking (PRM–50–89) submitted by Mr. Raymond West, (2) resequence the NRC's requirements governing Codes and standards in order to align with the latest guidelines of the OFR for IBR, and (3) add headings (explanatory titles) to paragraphs and lower-level subparagraphs of § 50.55a.

The NRC is not proposing a major restructuring or simplification of the requirements in § 50.55a. As explained in the statement of considerations in the proposed rule, the proposed editorial, non-substantive changes were made to align with the IBR guidance for multiple standards that is included in Chapter 6 of the OFR's, ''Federal Register Document Drafting Handbook,'' January 2011 Revision. These changes will structure NRC's regulations consistent with other Federal regulations that incorporate by reference multiple standards. Although NRC welcomes public comments on the revised structure of § 50.55a, the NRC is limited in the types of changes it can make in response to public comments on the revised structure and must align with the OFR's guidance.

Adding headings at the paragraph and subparagraph levels of § 50.55a will enhance the reader's ability to identify the subject matter of each paragraph and subparagraph. These headings are a first step toward addressing longstanding complaints about the readability and complex structure of § 50.55a. The NRC is not making significant structural changes to the rule at this time, but may, in the future, consider doing so in a separate rulemaking. The NRC would consider the commenter's suggestions and proposed rule language if and when NRC conducts that rulemaking. At this time, however, the NRC considers the commenter's suggestion to be outside the scope of this proposed rulemaking.

No change was made to the final rule as a result of this comment.

Comment: The purpose and scope of the rule has changed over time, and no longer reflects the actual regulatory process for review of consensus industry Codes and standards that have been found acceptable to the NRC staff on a generic basis or as part of a plant-specific review process that covers more than the Codes and standards mentioned. It does not seem appropriate for § 50.55a to reference Codes and standards that have been withdrawn (e.g., IEEE 279). The content of § 50.55a represents an archive of once-upon-a-time requirements, not contemporary Codes and standards. It is not necessary to recapitulate what Codes and standards were approved on individual applications; applicants retain design and safety responsibility (including identification of unreviewed safety questions) that might arise from new regulatory guides, Codes and standards, and operating experience. The following Codes, standards, and Code Cases in the proposed regulation are not the latest and conditions are imposed on the use of superseded documents which would preferably not be used for new design or ISI activities (the conditions are most likely fully documented in the licenses, safety analyses, and ISI programs for individual nuclear power plants as approved by the NRC): (Culp–3.1, 3.3, 3.9)

a. ASME III and Code Case N–729–1 (N–729–4 Is Approved by ASME)

b. ASME XI

c. IEEE 279

NRC Response: The NRC disagrees with the assertion that the proposed rule does not reflect the actual regulatory process for review of consensus industry Codes and standards that have been found acceptable to the NRC staff. Section II, ''Discussion,'' of the proposed rule described the three-step process that the NRC follows to determine the acceptability of new and revised Code Cases and the need for regulatory positions on the uses of these

Code Cases. The fundamental process has not changed over time. Also, the Code of Record for design and construction does not change over time unless there is a voluntary update by the licensee. As such, these codes and standards must be referenced in § 50.55a as long as they are in use.

Any Code or standard still in use must continue to be listed in the regulation, or licensees would have to discontinue their use when the rule becomes effective and immediately implement the latest version. These Codes and Code Cases are still in use and, therefore, may not be removed from § 50.55a without unacceptably changing their legal status from mandatory requirements or approved for use, to guidance.

No change was made to the final rule as a result of this comment.

Comment: The current language and structure of § 50.55a blurs the lines between the requirements for a quality program and for safety. (Culp–3.2)

NRC Response: The NRC believes this is an out of scope comment because it addresses the clarity of the requirements in § 50.55a in this rulemaking. The scope of this rulemaking is to: (1) Incorporate by reference the three Regulatory Guides identifying NRC-approved ASME Code Cases; and (2) to reorganize the section to address Office of the Federal Register requirements for incorporation by reference.

However, the NRC provides the following response to the out of scope comment. The NRC notes that the commenter did not provide any rationale why the rulemaking blurs the distinction between quality assurance and safety. In addition, the NRC notes that the reorganization of § 50.55a fundamentally addressed the paragraph identifying the ASME and IEEE codes that are incorporated by reference. The reorganization did not change any of the NRC requirements with respect to quality assurance or safety.

No change was made to the final rule as a result of this comment.

Comment: The proposed reorganization of § 50.55a uses the unconventional numbering hierarchy (a), (1), (i), (A). This is difficult to follow in the existing rule which is very long. It is even more difficult to follow in the proposed regulation with or without added introductory statements. (Culp–3.4)

NRC Response: The NRC has added headings to the paragraph and subparagraph levels of § 50.55a to aid the reader of this regulation. The hierarchy used in § 50.55a is that which is used throughout the *Code of Federal Regulations* and is dictated by the OFR. The NRC is also considering developing additional user aides.

No change was made to the final rule as a result of this comment.

Comment: The proposed regulation states that the regulation is consistent with a policy to review and accept industry standards instead of writing regulations; this is not achieved in practice due to delays in endorsing new Code editions and addenda. In at least some cases, the unendorsed newer Code revisions have been specifically made to incorporate the conditions, exceptions, and limitations in § 50.55a. (Culp–3.5)

NRC Response: The NRC appreciates the ASME's efforts to consider the NRC's concerns as addressed in conditions to § 50.55a. The NRC agrees that delays in approving new ASME Code editions and Code Cases can be counterproductive with respect to implementation of improvements in ASME Code requirements. The NRC continues to assess ways to improve the rulemaking process to find schedule efficiencies.

No change was made to the final rule as a result of this comment.

Comment: There is too much detail in the proposed regulation; NRC concerns should be more appropriately organized and put into consensus Code and Code Case work and topical regulatory guides. The proposed regulation is excessively detailed and covers an extraordinary range of subjects; the diverse NRC conditions ranging from grease caps to relief valve testing facility capabilities could be better organized and documented in regulatory guides on the specific topic (e.g., RG 1.90). (Culp–3.6)

NRC Response: The NRC agrees that there are many conditions in § 50.55a. It should be noted, that certain conditions are necessary because applicants and licensees continue to use many different Code editions and addenda. Accordingly, it is necessary to continue to list conditions that may have been addressed by a later Code edition because the earlier Code edition is still in use. The NRC determined that other conditions, such as those addressing grease caps, are necessary to ensure that safety-related concerns are adequately addressed.

With respect to the suggestion to use RGs, the NRC notes that RGs normally provide guidance and describe approaches that would be acceptable to the NRC for implementing a rule. Under the approach suggested in the comment, the RG would have to be incorporated by reference into § 50.55a in order for the provisions in the regulatory guides to continue to be legally-binding. In enclosure 5 to the comments submitted by the ASME, the ASME encouraged the NRC to consider alternative methods for endorsing ASME Codes and standards, such as moving many of the requirements currently specified in § 50.55a into a suitable regulatory guide that can be referenced within the regulation. The NRC agrees that the format and organization of § 50.55a could be improved, and the NRC may, in the future, conduct a rulemaking to restructure and simplify § 50.55a. The public would be given opportunity to comment before implementation.

No change was made to the final rule as a result of this comment.

Comment: There are multiple reviews and opportunities for staff review and public comment without necessarily also requiring comment on the proposed regulations to ''incorporate by reference'' what started as a simple reference to ASME III. The process of a comment in Code committee, comment on proposed regulatory guides, and comment on Code Cases seems adequate. Yet, comments from NRC representatives in Code meetings do not, according to their own words, ''carry the weight of the NRC staff endorsement,'' and some conditions have arisen after Code committees have finished reviews and published revisions. (Culp–3.7)

NRC Response: The NRC staff representatives on ASME Code committees have the opportunity to participate during the consideration of the Code cases during the ASME standards process. These individuals can provide input to the cases both before and after ASME endorsement. However, this participation is not a substitute for the technical, legal, and management reviews that must be conducted with respect to a complete rulemaking prior to issuance.

The second issue in this comment concerns public involvement in the rulemaking process involved in incorporating by reference those Code cases that the NRC has reviewed and approved. In accordance with the Administrative Procedures Act, the public is afforded an opportunity for review and comment, unless there is reasonable likelihood that there will be no ''significant adverse comment'' on a proposed rule. Past NRC experience suggests that the NRC will receive at least one ''significant adverse comment'' on each § 50.55a proposed rule.

No change was made to the final rule as a result of this comment.

Comment: The proposed revision to § 50.55a is very complicated and seems to be contrary to multiple claims in the discussion points in the proposed rule regarding: (Culp–3.8)

a. Paperwork reduction

b. Regulatory flexibility
c. Plain writing
d. Backfitting and issue finality

NRC Response: The NRC does not agree with the comment. The comment did not explain why the proposed Paperwork Reduction Act statement, Regulatory Flexibility Certification, Plain Writing discussion, or Backfitting and Issue Finality discussion is contrary to the proposed regulation. Complexity by itself does not mean that the NRC's proposed discussions on the four areas are inadequate or in error. Furthermore, the bulk of the changes in this rulemaking involve the reorganization of the rule. Therefore, the comment incorrectly implies that this rulemaking is the reason for the ''complexity'' of § 50.55a.

No change was made to the final rule as a result of this comment.

Comment: Should Mechanical Engineers become the new regulated embodiment of manufacturing arms? Change administration using international standards. (Stephens–4.1)

NRC Response: The NRC is unable to respond to this comment because of its ambiguous nature.

No change was made to the final rule as a result of this comment.

Comment: The NRC should amend its regulations to allow consideration of alternatives to the ASME BPV and OM Code Cases, as requested in a petition for rulemaking submitted by Mr. Raymond West (PRM–50–89) (ADAMS Accession No. ML073600974). The possibility of implementing an alternative to a Code Case approved by the Director of the Office of Nuclear Reactor Regulation will reduce the administrative burden on licensees and significantly reduce the lengthy process of proposing and gaining acceptance for a change or modification to a Code Case. The ASME supports the proposed changes in § 50.55a(z) to address PRM–50–89. (NEI–6.2, ASME–5.5.1)

NRC Response: The NRC agrees. Authorizing an alternative to an NRC-approved ASME Code Case reduces the administrative burden on the NRC and licensees. A complete discussion of the bases is set forth in Section V, ''Petition for Rulemaking (PRM–50–89).''

The final rule includes a provision in 50.55a(z) allowing the NRC to authorize alternatives to NRC-approved ASME Code Cases.

Comment: The ASME believes changes for **Federal Register** guidelines have been crafted to minimize administrative burden. (ASME–5.5.2)

NRC Response: No response is necessary.

Comment: Paragraph headings will improve readability. (ASME–5.5.3)

NRC Response: No response is necessary.

Comment: In general, the proposed RGs and related documents are written in a clear and effective manner, consistent with the Plain Writing Act and the Presidential Memorandum, ''Plain Language in Government Writing.'' Well-written regulatory guidance documents support their correct interpretation and implementation (NEI–6.2).

NRC Response: No response necessary.

Comment: The proposed changes to 10 CFR 50.55a would place a large burden on licensees. As discussed in Section VI, these changes would ''require substantial rewriting of these procedures and documents to correct the references to the old (superseded) sections, paragraphs and subparagraphs.'' For licensees, these revisions would include licensing documentation. None of the proposed organizational changes to 10 CFR 50.55a pertain to any of the provisions of 10 CFR 50.109(a)(4), since no information is changing and is merely reorganized. This means that in order to reorganize 10 CFR 50.55a, backfit analysis would have to be performed in accordance with 10 CFR 50.109. There is no need to change the location of the content in 10 CFR 50.55a (South Carolina Electric and Gas–7.1).

NRC Response: As indicated in Section V, ''Changes Addressing Office of the Federal Register's Guidelines on Incorporation by Reference,'' of the proposed rule, the reorganization of content was made in accordance with the revised guidance for incorporation by reference of multiple standards that is included in Chapter 6 of the OFR's, ''Federal Register Document Drafting Handbook,'' January 2011 Revision. All Federal agencies were directed to align with the guidelines. The OFR's guidance provided several options for incorporating by reference multiple standards into regulations. The NRC found moving the incorporation by reference of multiple standards into the first paragraph of § 50.55a(a) to be the least disruptive option. These changes, which are required by the OFR, are not within the purview of the backfit rule, and no further consideration of backfitting is needed to address the OFR-mandated reorganization.

No change was made to the final rule as a result of this comment.

Comment: The NRC should consider adding hyperlinks and indentation to § 50.55a because it would aid readers in navigating the rule. (South Carolina Electric and Gas–7.2)

NRC Response: The NRC appreciates these practical suggestions and agrees that adding hyperlinks or indentation would aid the readers in navigating § 50.55a. However, the NRC is unable to add hyperlinks or indentation to a rule published in the *Code of Federal Regulations.* Format requirements for the *Code of Federal Regulations* are established and enforced by the OFR, and do not permit inclusion of hyperlinks or a different indentation scheme. Please note that the NRC has prepared two documents to aid the reader in navigating § 50.55a: ''Final Reorganization of Paragraphs and Subparagraphs in 10 CFR 50.55a, 'Codes and standards' '' (ADAMS Accession No. ML14015A191) and ''Cross-Reference Tables'' (ADAMS Accession No. ML14211A050—package with two tables). The NRC is currently considering developing several alternatives to improve the format and organization of § 50.55a in a potential future rulemaking. The NRC plans to seek public interaction as part of the rulemaking process.

No change was made to the final rule as a result of this comment.

B. NRC Responses to Public Comments on Draft Regulatory Guides

Regulatory Guide 1.84, Revision 36 (DG–1230)

Code Case N–60–5

Comment: Text in the proposed condition should be corrected to change ''stain-hardened'' to ''strain-hardened.'' (ASME–5.1.1, Exelon–10.1)

NRC Response: The NRC agrees with the comment.

RG 1.84, Revision 36 has been corrected in accordance with the comment.

Code Case 1332–6

Comment: Appendix C of DG–1230 states that Code Case 1332–6 is contained in Table 5. However, Code Case 1332–6 does not appear in Table 5. (GE Hitachi Nuclear Energy–8.1)

NRC Response: The NRC agrees with this comment. Code Case 1332–6 has been added to Table 5 in RG 1.84, Revision 36, which lists those Section III Code Cases that have been superseded by revised Code Cases.

Code Case N–71–18

Comment: The American Welding Society (AWS) Code D1.1 was reformatted, and the provisions in paragraph 4.5.2.2 were relocated to paragraph 5.3.2.3 in the AWS Code. The paragraph references for AWS D1.1 in condition No. 3 to Code Case N–71–18

should be revised accordingly. (AREVA–9.1)

NRC Response: The NRC agrees with this comment. The reference in condition 3 to Code Case N–71–18 has been corrected in RG 1.84, Revision 36 by referring to paragraph ''5.3.2.3.''

Regulatory Guide 1.147, Revision 17 (DG–1231)

Code Case N–416–4

Comment: The NRC condition on this Code Case requiring nondestructive examination of welded or brazed repairs, and fabricated and installed joints, in accordance with the construction code of record, imposes an unnecessary burden on licensees and is not necessary to ensure safe operation. The BPV Code has long relied on a specified relationship between NDE and allowable stresses, i.e., vintage codes, such as American National Standards Institute (ANSI) B31.1 or Section III, have lower allowable stresses, due to the fact that NDE is generally not required, whereas nuclear codes (ASME Section III and B31.7) have higher allowable stress intensities for Class 1 components relative to Class 2 and 3 components (due mostly to the additional examinations required for Class 1 components).

The NRC stated that ''A system pressure test or hydrostatic pressure test does not verify the structural integrity of the repaired piping components.'' The ASME has never established any relationship between the test pressure to which a component is subjected and any other material or design characteristic. The primary technical consideration in development of the required test pressure is to ensure that it is low enough to prevent yielding of the material. Hydrostatic testing does not prove structural integrity; it proves only leak tightness. Similarly, NDE alone does not ensure structural integrity. The ASME Code ensures structural integrity through a combination of many factors, including material testing, design formulas, design factors, and qualification of personnel. Adding more NDE than required by the Construction Code (be it ASME Section III or B31.1) is not required to ensure structural integrity. (ASME–5.2.1)

NRC Response: The NRC disagrees with the comment that the additional NDE requirements imposed when using Code Case N–416–4 are unnecessary and imply that existing components are unsuitable. The NRC does agree that hydrostatic pressure testing or NDE alone does not ensure structural integrity. The original Construction Codes ensured structural integrity through a combination of many factors including material testing, design formulas, design factors, qualification of procedures, qualification of personnel, NDE, and hydrostatic testing. Code Case N–416–4 would allow a system leakage test to be performed in lieu of (1) a hydrostatic pressure test prior to return to service of Class 1, 2, and 3 welded or brazed repairs; (2) fabrication welds or brazed joints for replacement parts and piping subassemblies; or (3) installation of replacement items by welding or brazing.

The NRC believes that the rigorous NDE requirements of Section III should be performed when the hydrostatic pressure test is not performed. The reason for this condition is that some earlier Construction Codes have less stringent NDE requirements than Section III; however, they require a greater pressure for the Code Case N–416–4 required hydrostatic test. Section III NDE requirements for Class 1, 2, and 3 components generally require either surface or volumetric examinations or possibly both. The NRC believes that these NDE requirements along with a system leakage test provide the same level of quality and safety as the higher pressure hydrostatic test and reduced NDE requirements of earlier Construction Codes.

No changes were made to RG 1.147, Revision 17, as a result of this comment.

Code Case N–561–2

Comment: Proposed Conditions (1) and (3) should be eliminated. Proposed Conditions (1) and (3) limit the life of the repair ''until the next refueling outage'' for repairs performed on a wet surface or if the cause of the degradation has not been determined. The Code Case already limits the life of the repair to ''one fuel cycle'' for these same situations. The ASME Code committee considered both phrases when revising this Code Case to add these restrictions, and intentionally chose ''one fuel cycle'' instead of ''next refueling outage'' so as not to imply that such weld overlays could not be performed while a plant is shut down for a refueling outage. In such a case, literal application of ''next refueling outage'' could mean the current refueling outage, which could be an extreme hardship, depending on the timing of the discovery of the need for a weld overlay. Use of the term ''one fuel cycle'' clearly requires that the overlay be removed during the subsequent fuel cycle no later than the same point in the cycle at which the overlay was applied. In the vast majority of cases, this will happen during the next refueling outage; otherwise, a special outage or a special limiting condition of operation would be required mid-cycle in order to effect its removal. (ASME–5.2.2.a)

NRC Response: The NRC disagrees with the comment on the ''next refueling outage.'' The NRC finds that the suggested phrase, ''next fuel cycle,'' is not as conservative as ''the next refueling outage'' phrase because the ''next fuel cycle'' condition would permit longer service time to the repair that is performed on a wet surface, or the cause of the degradation has not been determined.

To clarify the difference between the ''next refueling outage'' vs. ''one fuel cycle,'' the NRC staff uses the following example. Assume fuel cycle No. 1 is followed by refueling outage No. 1, fuel cycle No. 2, and refueling outage No. 2. Under the ''next refueling outage'' condition, if a repair is performed during fuel cycle No. 1, regardless whether on the first day or last day of fuel cycle No. 1, the ''next refueling outage'' would be refueling outage No. 1 during which time the repair needs to be removed. If the repair is performed during refueling outage No. 1, the next refueling outage would be refueling outage No. 2 during which time the repair needs to be removed. Under the ''next fuel cycle'' condition, if a repair is performed in the middle of fuel cycle No. 1, the next fuel cycle would mean fuel cycle No. 2 during which time the repair needs to be removed. However, this condition does not specify exactly when in the next fuel cycle (fuel cycle No. 2) the repair must be removed. A licensee could interpret the next fuel cycle as the entire fuel cycle No. 2 and remove the repair after fuel cycle No. 2 is completed. This means that the licensee could remove the repair during refueling outage No. 2. Some licensees may choose to remove the overlay during refueling outage No. 1 as the comment stated, but based on the interpretation described earlier, the repair does not need to be removed during refueling outage No. 1.

No changes were made to RG 1.147, Revision 17, as a result of this comment.

Code Case N–561–2

Comment: Proposed Condition (2) on Code Case N–561–2 should be eliminated. Proposed Condition (2) prohibits the use of the exemption listed in paragraph 6(c)(1) of this case. The provisions in paragraph 6(c)(1) are identical to existing, approved provisions of IWA 4520, Examination, in the 2001 Edition of ASME Section XI.

Weld overlays are base metal repairs, and are therefore already exempt by Section XI, IWA–4520 (2001 and later editions and addenda). This exemption

was only included in revision 2 of Code Cases N–561 and N–562; and also in Revision 1 of Code Case N–661–2 which was approved by Regulatory Guide 1.147, Rev. 16, without this condition, to enable plants not yet implementing the 2001 or later edition and addenda to apply the exemption which had been accepted by the NRC in § 50.55a.

Paragraph 6(a) of the case requires a surface examination of the completed weld overlay to provide additional assurance of the quality of the repair weld. ASME believes that this requirement is sufficient for Class 3 applications in locations where the Construction Code would not require volumetric examination of full penetration butt welds in that location. Further, with the added condition of ultrasonically examining the base metal to verify absence of cracking, the benefit of/need for volumetric examination is significantly reduced. (ASME–5.2.2.b)

NRC Response: The NRC agrees that proposed condition (2) can be eliminated. Paragraph 6(c)(1) of the Code Case states that ''Class 3 weld overlays are exempt from volumetric examination when the Construction Code does not require the full penetration butt welds in the same location be volumetrically examined.'' Section XI, paragraph IWA–4520(a)(1), 2001 Edition and later, states that ''Base metal repairs on Class 3 items are not required to be volumetrically examined when the Construction Code does not require that full-penetration butt welds in the same location be volumetrically examined.'' As indicated in the comment, the exemptions are identical. The NRC unconditionally approved paragraph IWA–4520(a)(1) in the 2001 Edition through 2008 Addenda. Therefore, it would be inconsistent to retain the condition on the Code Case.

The NRC has removed proposed Condition (2) on Code Case N–561–2 from the final RG 1.147, Revision 17.

Code Case N–561–2 and N–661.2

Comment: Proposed Condition (5) on Code Case N–561–2 is unwarranted and should be removed or modified.

The rationale for this condition is to reduce the chances of producing a suspect weld (i.e., one made on a wet surface). Additionally, proposed Conditions (1), (2), (3), and (5) are unwarranted for reasons listed in comments provided on Code Case N 561–2.

Footnote 6 in Code Cases N–561–2 and N–661–2 (and footnote 5 in N–562–2) states: ''Testing has shown that piping with areas of wall thickness less than the diameter of the electrode may burn-through during application of a water-backed weld overlay.'' Testing performed by the Electric Power Research Institute (EPRI) and described in EPRI Report TR–108131, ''Weld Repair of Class 2 and 3 Ferritic Piping,'' demonstrated that this criteria applies to application of weld overlays under both pressurized (up to 500 psi during the testing) and non-pressurized conditions (during this testing, specimens that burned-through were successfully welded-up using the shielded metal arc welding process with water leaking from the pipe; and those specimens passed the subsequent burst testing at pressures beyond the minimum burst pressure of new pipe). The results were the same in both situations—if the electrode diameter exceeded the thickness being welded, burn-through was likely—irrespective of internal pressure. If the thickness of the base metal equaled the thickness of the electrode, burn through would not occur, regardless of internal pressure. To require depressurization in such cases—in order to reduce the chances of producing a suspect weld—would cause extreme hardships, with no technical justification.

Code Cases N–561–1, N–562–1, and N–661–1 each contained the statement: ''4(b) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.'' This was changed to a footnote for editorial purposes in revision 2 of each Code Case. If the NRC believes that Condition (5) must be retained in Table 2 of RG 1.147, the ASME recommends that this condition be revised to read ''Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.'' This wording is consistent with that specified in paragraph 4(b) of Code Case N–661–1, which is currently listed in Table 2 of RG 1.147. (ASME–5.2.2.c and ASME–5.2.7)

NRC Response: The NRC agrees with the comment.

The NRC staff has reviewed the EPRI report and finds that the ASME recommendation has merit because it is supported by experimental data. The results of the research shows that if the thickness of the base metal equals the thickness of the electrode then burn through will not occur regardless of internal pressure. There were five conditions in the draft regulatory guide issued for public comment. The NRC agreed in a response to a separate comment (follows below) to remove condition (2) regarding the exemption from volumetric examination of Class 3 weld overlays. Condition (5) in the draft regulatory guide has therefore been renumbered as condition (4) in the final regulatory guide, and the NRC has revised it consistent with the ASME recommendation.

Comment: Proposed Conditions (1), (2), (3), and (5) are unwarranted for reasons listed in comments provided on Code Case N–561–2. However, if the NRC believes that Condition (5) must be retained in Table 2 of RG 1.147, this condition be revised to read ''Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.'' This wording is consistent with that specified in paragraph 4(b) of Code Case N–661–1, which is currently listed in Table 2 of RG 1.147. (ASME–5.2.3)

NRC Response: Code Case N–562–2 is similar to Code Case N–561–2. Therefore, the NRC's position on conditions in Code Case N–561–2 are also applicable to Code Case N–562–2. Therefore, the NRC has determined to retain Conditions (1) and (3) as proposed. Proposed Condition (2) has been removed; paragraph 6(c)(1) of the Code Case states that ''Class 3 weld overlays are exempt from volumetric examination when the Construction Code does not require the full penetration butt welds in the same location be volumetrically examined.'' Section XI, paragraph IWA–4520(a)(1), 2001 Edition and later, states that ''Base metal repairs on Class 3 items are not required to be volumetrically examined when the Construction Code does not require that full-penetration butt welds in the same location be volumetrically examined.'' As indicated in the comment, the exemptions are identical. The NRC unconditionally approved paragraph IWA–4520(a)(1) in the 2001 Edition through 2008 Addenda. Therefore, it would be inconsistent to retain the condition on the Code Case.

Due to the removal of Condition (2), proposed Conditions (3), (4), and (5) have been renumbered as Conditions (2), (3), and (4). Proposed Condition (5) has been revised as recommended in the comment.

Code Case N–597–2

Comment: It is unclear whether proposed Condition (6) prohibits the use of the Code Case for moderate-energy Class 2 and 3 piping. If the intent of this condition is to allow the use of this case only until the next refueling outage for moderate-energy Class 2 and 3 piping, this condition should be clarified. In addition, the reference to Code Case N–513–2 should be removed from the proposed condition since Code Case N–513–3 is listed in Table 2 of RG 1.147. Because the condition imposed on the use of Code Case N–513–3 already restricts the use of N–513–3 until a

repair/replacement activity can be performed during the next refueling outage, the proposed condition is not needed for Code Case N–597–2. Proposed Condition (6) should, therefore, be removed or revised to clarify the intent. (ASME–5.2.4)

NRC Response: The NRC disagrees with this comment. As discussed in the statement of considerations for the proposed rule (78 FR 37886; June 24, 2013), the NRC had received a comment in a previous rulemaking (74 FR 26303; June 2, 2009), suggesting that the method described in Code Case N–513–2 for the temporary acceptance of flaws in moderate energy piping be added to Code Case N–597–2. The NRC agreed that it should be permissible under certain circumstances for licensees to evaluate local pipe wall thinning under Code Case N–597–2 without the NRC review and acceptance. The intent of Condition (6) was to reference the method in Code Case N–513–2 so that all of the provisions, formulas, graphs, and figures would not have to be duplicated in conditions to Code Case N–597–2.

As also discussed in the statement of considerations for the proposed rule, the circumstances under which such an evaluation is conducted must be limited, because Code Case N–597–2 is applicable to all the ASME Code class piping (including high energy piping), whereas Code Case N–513–2 is limited to Class 2 and 3 moderate energy piping. The NRC has only approved temporary acceptance of flaws for moderate energy Class 2 or 3 piping (maximum operating temperature does not exceed 200 °F (93 °C) and maximum operating pressure does not exceed 275 psig (1.9 MPa)). In addition, it is not appropriate to apply the method under Code Case N–597–2 to evaluate through-wall leakage conditions.

Condition (6) in the proposed rule stated, ''For moderate-energy Class 2 and 3 piping, wall thinning acceptance criteria may be determined on a temporary basis (until the next refueling outage) based on the provisions of Code Case N–513–2. Moderate-energy piping is defined as Class 2 and 3 piping whose maximum operating temperature does not exceed 200 °F (93 °C) and whose maximum operating pressure does not exceed 275 psig (1.9 MPa). Code Case N–597–2 shall not be used to evaluate through-wall leakage conditions.''

This condition has been revised in RG 1.147, Revision 17, to read as follows: ''The evaluation criteria in Code Case N–513–2 may be applied to Code Case N–597–2 for the temporary acceptance of wall thinning (until the next refueling outage) for moderate-energy Class 2 and 3 piping. Moderate-energy piping is defined as Class 2 and 3 piping whose maximum operating temperature does not exceed 200 °F (93 °C) and whose maximum operating pressure does not exceed 275 psig (1.9 MPa). Code Case N–597–2 shall not be used to evaluate through-wall leakage conditions.''

Code Case N–606–1

Comment: The proposed condition to Code Case N–606–1 is already inherently required.

The surface preparation and cleaning prior to welding are considered to be standard requirements by Welding Programs complying with § 50.55a specified Codes and 10 CFR part 50, appendix B Quality Assurance Programs. Furthermore, these requirements are already required/implied by the reference to the ASME Section IX and paragraph 3(e) of the Case. Many other instances where welding is performed, even temper bead welding, can be found in Code Cases and in Code that do not explicitly specify this level of detail since such details are included in the Owner's or the Owner's Repair Organization's Welding Procedure Specification/Welding Program. Therefore, this condition should be removed from the regulatory guide. (ASME–5.2.5)

NRC Response: The NRC agrees that, the second sentence of the proposed condition is redundant with requirements in Section III NB–4412. The NRC removed the second sentence of the condition.

The NRC disagrees with the comment's suggestion to remove the first and third sentences of the condition. The original version of Code Case N–606, and other temper bead Code Cases (such as N–638–5), require that prior to welding base metal, a surface examination shall be performed on the area to be welded, so there is precedent for this level of detail in temper bead Code Cases. This verification is not required by Section IX of the ASME Code. The NRC has determined that this verification is necessary to assure the necessary quality level for temper bead welding. Therefore, the condition is necessary. No change was made to the first and third sentences of the condition in response to this comment.

Code Case N–619 and N–648–1

Comment: The NRC should not include the condition to Code Case N–619 and N–648–1 which requires the 1-mil wire standard for qualification of visual examinations for components within the scope of these code cases. Research has shown that characters on a printed chart are a better resolution standard than the use of 1-mil wire.

The use of printed characters for qualification will improve the resolution of visual examinations, thus improving the capability of the technique in detecting indications for which the examinations are performed. (ASME–5.2.6.a, ASME–5.2.6.b)

NRC Response: Visual resolution sensitivity techniques are used to ensure the capabilities of the examiner, and that a camera, when used, is operating properly. The NRC conducted a preliminary assessment of remote visual testing at Pacific Northwest National Laboratory. The results were published in NUREG/CR–6860, ''An Assessment of Visual Testing,'' which is available on the NRC's public Web site at *http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/*. The 1-mil wire standard had been implemented in response to the requirement in the condition for a resolution sensitivity of 1-mil. The preliminary assessment identified issues with respect to the accuracy of using a wire as a performance demonstration standard. Other issues were also identified. This led to the development of a cooperative research program between the NRC and the EPRI. This is the research effort referenced in ASME's comment. While issues had been identified with the use of a wire standard, the NRC decided to not consider changes in the condition to Code Case N–619 until the cooperative research had progressed, and it could be determined if there were other issues that should be considered regarding visual examination.

The research has not identified any issues calling into question the use of characters as a resolution standard. In addition as described in NUREG/CR–6860, the research demonstrated that the character resolution standard was superior to the wire standard. The NRC finds the ASME's suggestion to remove the requirement for a 1-mil wire for VT–1 procedure demonstration acceptable.

The condition has been revised to remove the 1-mil wire standard and to allow the use of printed characters.

Code Case N–702

Comment: The proposed condition for Code Case N–702 should be modified to reference BWRVIP–241: BWR Vessel and Internals Project, ''Probabilistic Fracture Mechanics Evaluation for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii,'' EPRI Technical Report 1021005, October 2010 (ADAMS Accession No. ML11119A041). The proposed condition should be revised to read as follows: (ASME–5.2.8)

The technical basis supporting the implementation of this Code Case is addressed by BWRVIP–108, and BWRVIP–241. The applicability of Code Case N–702 must be shown by demonstrating that the criteria in Section 5.0 of NRC Safety Evaluation regarding BWRVIP–108 dated December 18, 2007 (ADAMS Accession No. ML073600374), or Section 5.0 of NRC Safety Evaluation regarding BWRVIP–241 dated April 19, 2013 (ADAMS Accession No. ML13071A240), are met. The evaluation demonstrating the applicability of the Code Case shall be reviewed and approved by the NRC prior to the application of the Code Case.

NRC Response: The NRC agrees with the suggestion to reference BWRVIP–241 in the condition. By letter dated April 19, 2013 (ADAMS Accession No. ML13071A233), to the Chairman of the BWR Vessel and Internals Project, the NRC stated that BWRVIP–241 was acceptable for referencing subject to the limitations specified in the technical report and in the NRC Safety Evaluation. The BWRVIP–241 was not referenced in the proposed condition to ASME Code Case N–702 because the draft RG was already in the review process when the NRC Safety Evaluation for BWRVIP–241 was released. The basis for including BWRVIP–241 in the reference is as follows.

The BWRVIP–108 provides the technical basis document for ASME Code Case N–702 regarding reduction of the inspection of reactor pressure vessel (RPV) nozzle-to-vessel shell welds and nozzle inner radius areas from 100 percent to 25 percent for each nozzle type every 10 years. The BWRVIP–241 provides additional probabilistic fracture mechanics (PFM) analyses to support its proposed changes to the NRC staff's criteria specified in the Safety Evaluation on BWRVIP–108. Based on the additional PFM results supporting the revised criteria, along with BWR RPV inspection results which show no indications of inservice degradation, the NRC staff determined that the inspection of 25 percent of each RPV nozzle type each 10-year interval is justified.

Licensees who plan to request relief from the ASME Code, Section XI requirements for RPV nozzle-to-vessel shell welds and nozzle inner radius sections may reference the BWRVIP–241 report as the technical basis for the use of ASME Code Case N–702 as an alternative. However, licensees should demonstrate the plant-specific applicability of the BWRVIP–241 report to their units in the relief request by addressing the conditions and limitations specified in Section 5.0 of the NRC Safety Evaluation for BWRVIP–241. The suggested condition is identical to the proposed condition in the draft RG other than adding the reference to BWRVIP–241 in two places. Therefore, the NRC finds the comment's proposal to be acceptable.

The condition on ASME Code Case N–702 has been revised to reference BWRVIP–241.

Code Case N–739–1

Comment: The American Concrete Institute (ACI) report referenced in the condition to Code Case N–739–1 should be clarified to reference ACI 201.1R. Note that the ASME has taken action to issue an erratum to correct this error in the Code Case and Section XI. The reference to ACI 201.1 R is correctly shown in Table IWA–1600–1. (ASME–5.2.9)

NRC Response: The NRC agrees with the comment. The letter ''R'' was missing in the reference in Code Case N–739–1. The ACI uses the letter ''R'' to distinguish reports from standards. With the ASME approval of an erratum to the Code Case restoring the letter ''R,'' the NRC can remove the condition in final RG 1.147, Revision 17.

The NRC has unconditionally approved Code Case N–739–1 in RG 1.147, Revision 17.

Code Cases N–798 and N–800

Comment: Although Code Cases N–798 and N–800 have not been included in DG–1231, the NRC should include both of these cases in the next draft revision to RG 1.147. Until such time that N–798 and N–800 are included in RG 1.147, owners will continue to seek relief pursuant to § 50.55a(a)(3) [§ 50.55a(z) in the draft rule] to use provisions of these cases or similar alternatives. (ASME–5.2.10)

NRC Response: The NRC agrees with the comment and plans to address these code cases in Supplement 11 to the 2007 Edition through Supplement 10 to the 2010 Edition in draft Revision 18 to RG 1.147. Code Cases N–798 and N–800 were not included in the draft regulatory guide because they were issued in Supplement 4 to the 2010 Edition, which was not considered for this regulatory guide.

No change was made to this final rule as a result of this comment.

Regulatory Guide 1.192, Revision 1 (DG–1232)

Code Case OMN–1

Comment: DG–1232 incorrectly identifies ASME Code Case OMN–1 (2006 Addenda) as ''Revision 0.'' The version of OMN–1 published with the 2006 Addenda does not include the identifier, ''Revision 0.'' (Comstock-2.1)

NRC Response: The NRC agrees with this comment. The ASME OMN–1 Code Case published with the 2006 Addenda did not include the identifier ''Revision 0.'' Accordingly, RG 1.192, Revision 1, has been revised to remove the words ''Revision 0'' from the first sentence of the first paragraph in Table 2, under OMN–1 conditions.

Comment: The descriptions in the first and second sentence say OMN–1 may be used in lieu of the provisions for stroke time testing. However, OMN–1 says it may be used in place of all provisions with the exception of leak testing. The conditions placed on the use of OMN–1 restrict its use in place of existing other ISTC requirements, such as position indication verification and periodic (quarterly, cold shutdown, refueling outage) exercising. All provisions of ISTC are implemented in OMN–1 with the exception of leak testing. The leak testing requirement of ISTC is referenced as a necessary requirement by the Code Case. Strike out the words ''stroke-time'' in the first and second sentences of Table 2 in DG–1232 to resolve this problem. (Comstock-2.2)

NRC Response: The NRC disagrees with this comment. The general discrepancy noted in the comment is that draft RG 1.192 (DG–1232) states OMN–1 ''may be used in lieu of the provisions for stroke time testing'' versus OMN–1, which states ''it may be used in place of all provisions.'' After evaluating the comment, the NRC believes both statements are correct and the same for the following reasons.

The requirements of the ASME OM Code, Subsection ISTC, can be simplified as having three test requirements:

1. ISTC–3500—''Valve Testing Requirements''
2. ISTC–3600—''Leak Testing Requirements''
3. ISTC–3700—''Position Verification Testing''

Section ISTC–3500 of the ASME OM Code describes valve test requirements, such as exercise test frequency and obturator movement verification. Specific instructions for the different valve types can be found in Section ISTC–5000, ''Specific Testing Requirements,'' of the ASME OM Code. The ASME OM Code section for specific test requirements for motor-operated valves (MOVs) is ISTC–5120. The first specific instruction for an MOV test is ISTC–5121(a), ''Valve Stroke Testing,'' which states, ''Active valves shall have their stroke times measured when exercised in accordance with ISTC–3500.'' The specific instruction for the

stroke-time test encompasses all the requirements of ISTC–3500. Leak testing requirement ISTC–3600 remains the same. The position verification test is not specifically spelled out in the ASME OM Code Case OMN–1, but credit is given on the basis that OMN–1 requires diagnostic testing of MOVs to verify that they are set up correctly and will meet their design basis function.

The comment also stated that all provisions of ISTC are implemented in OMN–1. This statement is not fully accurate. After a recent industry valve failure, it has been noted by the ASME OM Code Subgroup committee on MOVs that the ASME OM Code Case OMN–1 does not directly address the issue of verifying obturator movement, which is required in Section ISTC–3530. The subgroup committees for ISTC and MOVs are currently working on addressing this issue. Also, a review of past NRC documents, regulatory guides, and safety evaluations were completed. The majority of the NRC correspondence refers to ASME OM Code requirements for MOVs as being ''stroke time testing.''

No change has been made to RG 1.192, Revision 1, as a result of this comment.

Code Case OMN–11

Comment: In DG–1232, delete the first sentence in Condition (2) on OMN–11 (2006 Addenda). It exceeds the NRC's authority.

In DG–1232, the conditions on OMN–11 (2006 addenda) add an unnecessary administrative burden.

In DG–1232, in the discussion of OMN–11 (2006 addenda), Condition (1) should be deleted. This defeats the purpose of alternate requirements.

In DG–1232, in the discussion of OMN–11 (2006 addenda), Condition (2) should be deleted. The OMN–11 3(b) rule requires the same treatment to be applied as OMN–1 3.5(b) by requiring an evaluation of all test results for every MOV in the group. The OMN–11 3(d) rule requires all low safety significant components (LSSC) to be tested over a 10-year period. This requires the same treatment to be applied as OMN–1 3.5(d) over a 10-year period, which requires testing for all valves in the group. The OMN–1 3.5(e) simply says the test results for a representative MOV from the group shall be applied to all MOVs in the group when doing the section 6 analyses and evaluation. This is the same rule described within the OMN–11 3(b) requirement that requires test results from an individual valve within a group to be applied to all MOVs within the group.

In DG–1232, in the discussion of OMN–11 (2006 addenda), Condition (3) should be deleted. It is already imposed for OMN–1 (required for OMN–11).

In DG–1232, in the discussion of OMN–11 (2006 addenda), note 1 should be deleted because it is circular and provides no guidance or information.

In DG–1232, in the discussion of OMN–11 (2006 addenda), note 2 directs the reader to the wrong edition (2004) for OMN–1. If it referenced 2006, it would not provide any new information.

In DG–1232, in the discussion of OMN–11 (2006 addenda), note 3 should be incorporated into Table 2 OMN–1 note 2 or deleted. (Comstock-2.3)

NRC Response: The NRC agrees that the specification of conditions in Table 2 of RG 1.192 on Code Case OMN–11 in the 2006 Addenda of the ASME OM Code is not necessary because OMN–1 in the 2006 Addenda has incorporated the provisions from OMN–11. Therefore, OMN–11 has been deleted from Table 2 of RG 1.192. A new Note 2 has been included for OMN–1 in Table 2 of RG 1.192 explaining the incorporation of OMN–11 into OMN–1 such that the use of OMN–11 in the 2006 Addenda is no longer appropriate. Table 3 of RG 1.192 continues to specify conditions for the use of OMN–11 in the 2001 Edition, 2003 Addenda, and 2004 Edition of the OM Code for those superseded versions of OMN–11. In particular, Condition (1) on OMN–11 indicates that all provisions in OMN–1 must be satisfied, except those allowed to be relaxed by the risk-informed provisions in OMN–11. Condition (2) on OMN–11 indicates that only specific provisions for grouping of MOVs in OMN–1 may be relaxed through the use of OMN–11. Condition (3) on OMN–11 is repeated from a similar condition on OMN–1 because OMN–11 has a specific section on high risk MOVs. Note 1 on OMN–11 in Table 3 of RG 1.192 indicates that the permission to use allowable risk ranking methodologies applies to both OMN–1 and OMN–11. There are no additional notes on OMN–11 in Table 3 of RG 1.192.

Code Case OMN–12

Comment: Code Case OMN–12 should be removed from DG–1232 since its application will always require NRC permission to implement due to the ASME OM Code for which it applies. The conditions described for the use of ASME Code Case OMN–12 do not allow it to be applied to any other ASME OM Code for which it was written (ASME OM Code 1998). In light of the current 10 CFR 50.55a regulations, this renders the Code Case unusable for anyone in the USA through the application of RG 1.192. The extra conditions also make the application of OMN–12 so burdensome, that no one would be willing to incur the extra expense and administrative burden associated with implementing this process under the Inservice Testing Program. (Comstock-2.4)

NRC Response: The NRC disagrees with this comment. The comment seems to be interpreting that the NRC is endorsing the use of OMN–12 only if the licensee's IST Program is based on the 1998 Code. That is not the case. The NRC accepts with conditions the use of OMN–12 with any Code from 1998 up to and including the 2006 Addenda.

No change has been made to the final rule as a result of this comment.

Table 3—Code Cases That Have Been Superseded by Revised Code Cases

Comment: Table 3 of DG–1232 should be deleted. It serves no useful purpose. The information is available via other sources. It delays the rule. (Comstock–2.5)

NRC Response: The NRC disagrees with this comment. Table 3 in RG 1.192 lists those OM Code Cases that have been superseded by revised Code Cases. Similar tables exist in RGs 1.84 and 1.147 addressing Section III and Section XI Code Cases respectively. Section 50.55a allows applicants and licensees to continue to apply superseded Code Cases for the remainder of an inservice inspection or testing interval. The ASME procedures require that the latest version of a Code Case be implemented. If not for the provision in the regulation, licensees would be required to update their inservice inspection and testing programs for every Code Case that is revised (i.e., that the licensee or applicant had previously implemented). Accordingly, any Code and standard that has been incorporated by reference into § 50.55a and is still in use must continue to be listed in the regulation.

No change has been made to RG 1.192, Revision 1, as a result of this comment.

Regulatory Guide 1.193, Revision 4 (DG–1233)

Code Case N–659–2

Comment: In DG–1233, in the discussion of N–659–2, there is a typographical error on page 7. It should say ''radiography,'' not ''radiology.'' (ASME–5.4.1)

NRC Response: The NRC agrees with this comment.

The NRC corrected the title of Code Case N–659–2 in RG 1.193, Revision 4.

N–805

Comment: The U.S. Nuclear Regulatory Commission (NRC) should consider including in this rulemaking Code Case N–805, ''Alternative to Class 1 Extended Boundary End of lnterval or Class 2 System Leakage Testing of the Reactor Vessel Head Flange O-Ring Leak-Detection System Section XI, Division 1.'' (Inservice Inspection Program Owners Group–1.1)

NRC Response: The NRC declines to adopt the suggestion to adopt Code Case N–805 in the final rulemaking and final regulatory guide. Code Case N–805 was published by the ASME in Supplement 6 to the 2010 Edition which was not considered for inclusion in this rulemaking and draft regulatory guide. The NRC plans to include Code Case N–805 in draft Revision 18 to RG 1.147 which is scheduled for public comment in spring 2015.

No change was made to the final rule as a result of this comment.

IV. NRC Approval of New and Amended ASME Code Cases

This final rule incorporates by reference the latest revisions of the NRC's RGs that list ASME BPV and OM Code Cases the NRC finds to be acceptable or ''conditionally acceptable'' (i.e., NRC-specified conditions). Regulatory Guide 1.84, Revision 36 (ADAMS Accession No. ML13339A515), supersedes the incorporation by reference of Revision 35; RG 1.147, Revision 17 (ADAMS Accession No. ML13339A689), supersedes the incorporation by reference of Revision 16; and RG 1.192, Revision 1 (ADAMS Accession No. ML13340A034), supersedes the incorporation by reference of Revision 0.

This final rule addresses two categories of ASME Code Cases. The first category of Code Cases are the new and revised Section III and Section XI Code Cases listed in Supplements 1 through 10 to the 2007 Edition of the BPV Code, and the OM Code Cases published with the 2002 Addenda through the 2006 Addenda. The second category is the Code Cases that were not addressed in the final rule published in the **Federal Register** on October 5, 2010 (75 FR 61321). The 2010 final rule addressed the new and revised Section III and Section XI Code Cases listed in Supplements 2 through 11 to the 2004 Edition and Supplement 0 to the 2007 Edition of BPV Code. Public comments were received during the proposed rule stage (June 2, 2009; 74 FR 26303) on (Code Cases N–508–4, N–597–2, N–619, N–648, N–702, and N–748) requesting that the NRC include certain revised Code Cases in the final guides that were not listed in the draft guides. The NRC determined that the revised Code Cases represented changes significant enough to warrant broader public participation prior to the NRC making a final determination of them. Accordingly, the NRC requested comment on these Code Cases in the proposed rule (June 24, 2013; 78 FR 37886). The comment responses shown earlier include responses to those Code Cases.

The latest editions and addenda of the ASME BPV and OM Codes that the NRC has approved for use are referenced in § 50.55a. The ASME also publishes Code Cases that provide alternatives to existing Code requirements developed and approved by ASME. The final rule incorporated by reference RGs 1.84, 1.147, and 1.192. The NRC, by incorporating by reference these three RGs, allows nuclear power plant licensees and applicants for standard design certifications, standard design approvals, manufacturing licenses, applicants for OLs, CPs, and COLs under the regulations that govern license certifications, to use the Code Cases listed in these RGs as suitable alternatives to the ASME BPV and OM Codes for the construction, ISI, and IST of nuclear power plant components. This action is consistent with the provisions of the National Technology Transfer and Advancement Act of 1995, Public Law 104–113, which encourages Federal regulatory agencies to consider adopting industry consensus standards as an alternative to *de novo* agency development of standards affecting an industry. This action is also consistent with the NRC's policy of evaluating the latest versions of consensus standards in terms of their suitability for endorsement by regulations or regulatory guides.

The NRC follows a three-step process to determine the acceptability of new and revised Code Cases and the need for regulatory positions on the uses of these Code Cases. This process was employed in the review of the Code Cases in Supplements 1 through 10 to the 2007 Edition of the BPV Code and the 2002 Addenda through the 2006 Addenda of the OM Code. The Code Cases in these supplements are the subject of this final rule. First, the ASME develops Code Cases through a consensus development process, as administered by ANSI, which ensures that the various technical interests (e.g., utility, manufacturing, insurance, regulatory) are represented on standards development committees and that their viewpoints are addressed fairly. This process includes development of a technical justification in support of each new or revised Code Case. The ASME committee meetings are open to the public, and attendees are encouraged to participate. Task groups, working groups, and subgroups report to a standards committee. The standards committee is the decisive consensus committee and ensures that the development process fully complies with the ANSI consensus process. The NRC actively participates through full involvement in discussions and technical debates of the task groups, working groups, subgroups, and standards committee regarding the development of new and revised standards.

Second, the standards committee transmits to its members a first consideration letter ballot requesting comment or approval of new and revised Code Cases. To be approved, Code Cases from the first consideration letter ballot must receive the following: (1) Approval votes from at least two thirds of the eligible consensus committee membership, (2) no disapprovals from the standards committee, and (3) no substantive comments from ASME oversight committees such as the Technical Oversight Management Committee (TOMC). The TOMC's duties, in part, are to oversee various standards committees to ensure technical adequacy and provide recommendations in the development of Codes and standards, as required. The Code Cases that are disapproved or receive substantive comments from the first consideration ballot are reviewed by the working level group(s) responsible for their development to consider the comments received. These Code Cases may be approved by the standards committee on second consideration with an approval vote by at least two thirds of the eligible consensus committee membership, with no more than three disapprovals from the consensus committee.

Third, the NRC reviews new and revised Code Cases to determine their acceptability for incorporation by reference in § 50.55a through the subject RGs. This rulemaking process, when considered together with the ANSI process for developing and approving ASME codes and standards and ASME Code Cases, constitutes the NRC's basis that the Code Cases (with conditions as necessary) provide reasonable assurance of adequate protection to public health and safety.

The NRC reviewed the new and revised Code Cases identified in this final rule and concluded, in accordance with the process previously described, that the Code Cases are technically

adequate (with conditions as necessary) and consistent with current NRC regulations. Therefore, the new and revised Code Cases listed in the subject RGs are approved for use subject to any specified conditions.

A. ASME Code Cases Approved for Unconditional Use

The NRC determined, in accordance with the process previously described for review of ASME Code Cases, that each ASME Code Case listed in Table II is appropriate for incorporation by reference and has been newly added to the RGs

TABLE II—UNCONDITIONALLY APPROVED CODE CASES

Code case No.	Code supplement	Code case title
ASME BPV Code Case, Section III		
N–4–13	5	Special Type 403 Modified Forgings or Bars, Section III, Division 1, Class 1 and CS.
N–570–2	7	Alternative Rules for Linear Piping and Linear Standard Supports for Classes 1, 2, 3, and MC, Section III, Division 1.
N–580–2	4	Use of Alloy 600 With Columbium Added, Section III, Division 1.
N–655–1	2	Use of SA–738, Grade B, for Metal Containment Vessels, Class MC, Section III, Division 1.
N–708	2	Use of JIS G–4303, Grades SUS304, SUS304L, SUS316, and SUS316L, Section III, Division 1.
N–759–2	4	Alternative Rules for Determining Allowable External Pressure and Comprehensive Stress for Cylinders, Cones, Spheres, and Formed Heads, Section III, Division 1.
N–760–2	7	Welding of Valve Plugs to Valve Stem Retainers, Classes 1, 2, and 3, Section III, Division 1.
N–767	4	Use of 21 Cr-6Ni-9Mn (Alloy UNS S21904) Grade GXM–11 (Conforming to SA 182/SA–182M and SA–336/SA–336M), Grade TPXM–11 (Conforming to SA 312/SA–312M) and Type XM–11 (Conforming to SA–666) Material, for Class 1 Construction, Section III, Division 1.
N–774	7	Use of 13Cr-4Ni (Alloy UNS S41500) Grade F6NM Forgings Weighing in Excess of 10,000 lb (4,540 kg) and Otherwise conforming to the Requirements of SA–336/SA–336M for Class 1, 2, and 3 Construction, Section III, Division 1.
N–782	9	Use of Editions, Addenda, and Cases, Section III, Division 1.
N–801	4 (2010 Edition)	Rules for Repair of N-Stamped Class 1, 2, and 3 Components by Organization Other Than the N Certificate Holder That Originally Stamped the Component Being Repaired, Section III, Division 1.
N–802	4 (2010 Edition)	Rules for Repair of Stamped Components by the N Certificate Holder That Originally Stamped the Component, Section III, Division 1.
ASME BPV Code Case, Section XI		
N–532–5	5	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA–4000 and IWA–6000, Section XI, Division 1.
N–716–1	1 (2013 Edition)	Alternative Piping Classification and Examination Requirements, Section XI, Division 1.
N–739–1	1	Alternative Qualification Requirements for Personnel Performing Class CC Concrete and Post-Tensioning System Visual Examinations, Section XI, Division 1.
N–747	9	Reactor Vessel Head-to-Flange Weld Examinations, Section XI, Division 1.
N–762	1	Temper Bead Procedure Qualification Requirements for Repair/Replacement Activities Without Post Weld Heat Treatment, Section XI, Division 1.
N–765	8	Alternative to Inspection Interval Scheduling Requirements of IWA–2430, Section XI, Division 1.
N–769	8	Roll Expansion of Class 1 In-Core Housing Bottom Head Penetrations in BWRs, Section XI, Division 1.
N–773	8	Alternative Qualification Criteria for Eddy Current Examinations of Piping Inside Surfaces, Section XI, Division 1.
ASME OM Code Case		
OMN–6	2006 Addenda	Alternate Rules for Digital Instruments.
OMN–8	2006 Addenda	Alternative Rules for Preservice and Inservice Testing of Power-Operated Valves That Are Used for System Control and Have a Safety Function per OM–10, ISTC–1.1, or ISTA–1100.
OMN–14	2004 Addenda	Alternative Rules for Valve Testing Operations and Maintenance, Appendix I: BWR CRD Rupture Disk Exclusion.
OMN–16	2006 Addenda	Use of a Pump Curve for Testing.

B. ASME Code Cases Approved for Use With Conditions

The NRC has determined that certain Code Cases, as issued by ASME, are generally acceptable for use, but that the alternative requirements specified in those Code Cases must be supplemented to provide an acceptable level of quality and safety. Accordingly, the NRC proposes to impose conditions on the use of these Code Cases to modify, limit or clarify their requirements. For each applicable Code Case, the conditions would specify the additional activities that must be performed, the limits on the activities specified in the Code Case, and/or the supplemental information needed to provide clarity. These ASME Code Cases are included in Table III of the following: RG 1.84 (DG–1230), RG 1.147 (DG–1231), and RG 1.192 (DG–1232). The NRC's evaluation of the Code Cases and the reasons for the NRC's conditions are discussed in the following paragraphs.

TABLE III—CONDITIONALLY APPROVED CODE CASES

Code case No.	Code supplement	Code case title	Conditions
ASME BPV Code Case, Section III			
N–60–5	Reinstating condition	Material for Core Support Structures, Section III, Division I, Class 1.	The maximum yield strength of strain-hardened austenitic stainless steel shall not exceed 90,000 psi in view of the susceptibility of this material to environmental cracking.
N–208–2	4	Fatigue Analysis for Precipitation Hardening Nickel Alloy Bolting Material to Specification SB–637 N07718 for Class 1 Construction, Section III, Division 1.	(1) In Figure A, the words ''No mean stress'' shall be implemented with the understanding that it denotes ''Maximum mean stress.'' (2) In Figure A, σ_y shall be implemented with the understanding that it denotes σ_{max}.
N–520–2	4	Alternative Rules for Renewal of Active or Expired N-type Certificates for Plants Not in Active Construction, Section III, Division 1.	The Code Case is considered acceptable with one clarification: an AIA is an Authorized Inspection Agency and the AIA employs the Authorized Nuclear Inspector (ANI).
N–757–1	2	Alternative Rules for Acceptability for Class 2 and 3 Valves (DN 25) and Smaller with Welded and Nonwelded End Connections Other than Flanges, Section III, Division 1.	The design provisions of ASME Section III, Division 1, Appendix XIII, shall not be used for Class 3 valves.
ASME BPV Code Case, Section XI			
N–508–4	8	Rotation of Serviced Snubbers and Pressure Retaining Items for the Purpose of Testing, Section XI, Division 1.	When Section XI requirements are used to govern the examination and testing of snubbers and the ISI Code of Record is earlier than Section XI, 2006 Addenda, Footnote 1 shall not be applied.
N–561–2	1	Alternative Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping, Section XI, Division 1.	(1) Paragraph 5(b): for repairs performed on a wet surface, the overlay is only acceptable until the next refueling outage. (2) Paragraph 7(c): if the cause of the degradation has not been determined, the repair is only acceptable until the next refueling outage. (3) The area where the weld overlay is to be applied must be examined using ultrasonic methods to demonstrate that no crack-like defects exist. (4) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.
N–562–2	1	Alternative Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping, Section XI, Division 1.	(1) Paragraph 5(b): for repairs performed on a wet surface, the overlay is only acceptable until the next refueling outage. (2) Paragraph 7(c): if the cause of the degradation has not been determined, the repair is only acceptable until the next refueling outage. (3) The area where the weld overlay is to be applied must be examined using ultrasonic methods to demonstrate that no crack-like defects exist. (4) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.
N–597–2	Previously approved Code Case. NRC had proposed one new condition in response to public comment on last rulemaking.	Requirements for Analytical Evaluation of Pipe Wall Thinning, Section XI, Division 1.	New condition (6): The evaluation criteria in Code Case N–513–2 may be applied to Code Case N–597–2 for temporary acceptance of wall thinning (until the next refueling outage) for moderate-energy Class 2 and 3 piping. Moderate-energy piping is defined as Class 2 and 3 piping whose maximum operating temperature does not exceed 200 °F (93 °C) and whose maximum operating pressure does not exceed 275 psig (1.9MPa). Code Case N-597–2 shall not be used to evaluate through-wall leakage conditions.
N–606–1	Public comment received on previously approved rule requesting revision to condition. Condition was revised.	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique for BWR CRD Housing/Stub Tube Repairs, Section XI, Division 1.	Prior to welding, an examination or verification must be performed to ensure proper preparation of the base metal, and that the surface is properly contoured so that an acceptable weld can be produced. This verification is to be required in the welding procedures.
N–619	Responding to comment on previously approved Code Case.	Alternative Requirements for Nozzle Inner Radius Inspections for Class 1 Pressurizer and Steam Generator Nozzles, Section XI, Division 1.	In lieu of a UT examination, licensees may perform a VT–1 examination in accordance with the code of record for the Inservice Inspection Program utilizing the allowable flaw length criteria of Table IWB–3512–1 with limiting assumptions on the flaw aspect ratio.
N–648–1	Responding to comment on previously approved Code Case.	Alternative Requirements for Inner Radius Inspections for Class 1 Reactor Vessel Nozzles, Section XI, Division 1.	In lieu of a UT examination, licensees may perform a VT–1 examination in accordance with the code of record for the Inservice Inspection Program utilizing the allowable flaw length criteria of Table IWB–3512–1 with limiting assumptions on the flaw aspect ratio.
N–661–2	1	Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service, Section XI, Division 1.	(1) Paragraph 5(b): for repairs performed on a wet surface, the overlay is only acceptable until the next refueling outage. (2) Paragraph 7(c): if the cause of the degradation has not been determined, the repair is only acceptable until the next refueling outage. (3) The area where the weld overlay is to be applied must be examined using ultrasonic methods to demonstrate that no crack-like defects exist. (4) Piping with wall thickness less than the diameter of the electrode shall be depressurized before welding.

TABLE III—CONDITIONALLY APPROVED CODE CASES—Continued

Code case No.	Code supplement	Code case title	Conditions
N–702	Responding to comment on previously approved Code Case.	Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds, Section XI, Division 1.	The technical basis supporting the implementation of this Code Case is addressed by BWRVIP–108: BWR Vessel and Internals Project, ''Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii,'' EPRI Technical Report 1003557, October 2002 (ADAMS Accession No. ML023330203); and BWRVIP–241: BWR Vessels and Internals Project, ''Probabilistic Fracture Mechanics Evaluation for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Blend Radii,'' EPRI Technical Report 1021005, October 2010 (ADAMS Accession No. ML11119A041). The applicability of Code Case N–702 must be shown by demonstrating that the criteria in Section 5.0 of NRC Safety Evaluation regarding BWRVIP–108 dated December 18, 2007 (ADAMS Accession No. ML073600374), or Section 5.0 of NRC Safety Evaluation regarding BWRVIP–241 dated April 19, 2013 (ADAMS Accession No. ML13071A240), are met. The evaluation demonstrating the applicability of the Code Case shall be reviewed and approved by the NRC prior to the application of the Code Case.
ASME OM Code Cases			
OMN–1	2006 Addenda	Alternative Rules for Preservice and Inservice Testing of Active Electric Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants.	Licensees may use Code Case OMN–1, ''Alternative Rules for Preservice and Inservice Testing of Certain Electric Motor-Operated Valve Assemblies in Light-Water Reactor Power Plants,'' in lieu of the provisions for stroke-time testing in Subsection ISTC of the 1995 Edition up to and including the 2006 Addenda of the ASME OM Code when applied in conjunction with the provisions for leakage rate testing in, as applicable, ISTC 4.3 (1995 Edition with the 1996 and 1997 Addenda) and ISTC–3600 (1998 Edition through the 2006 Addenda). In addition, licensees who continue to implement Section XI of the ASME BPV Code as their Code of Record may use OMN–1 in lieu of the provisions for stroke-time testing specified in Paragraph 4.2.1 of ASME/ANSI OM Part 10 as required by 10 CFR 50.55a(b)(2)(vii) subject to the conditions in this regulatory guide. Licensees who choose to apply OMN–1 must apply all its provisions. (1) The adequacy of the diagnostic test interval for each motor-operated valve (MOV) must be evaluated and adjusted as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OMN–1. (2) When extending exercise test intervals for high risk MOVs beyond a quarterly frequency, licensees must ensure that the potential increase in Core Damage Frequency (CDF) and risk associated with the extension is small and consistent with the intent of the Commission's Safety Goal Policy Statement. (3) When applying risk insights as part of the implementation of OMN–1, licensees must categorize MOVs according to their safety significance using the methodology described in Code Case OMN–3, ''Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants,'' with the conditions discussed in this regulatory guide or use other MOV risk ranking methodologies accepted by the NRC on a plant specific or industry-wide basis with the conditions in the applicable safety evaluations. Note 1: As indicated at 64 FR 51370–51386, licensees are cautioned that, when implementing 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. Note 2: RG 1.192, Rev. 0, conditionally accepted Code Case OMN–11 for use in conjunction with Code Case OMN–1. The provisions of Code Case OMN–11 were acceptably incorporated into Code Case OMN–1, 2006 Addenda, including the conditions in the RG on the use of Code Case OMN–11. Code Case OMN–11, 2006 Addenda, is therefore no longer appropriate for use. Accordingly, applicants and licensees choosing to perform risk-informed testing of motor-operated valves (MOVs) as allowed by RG 1.192 must do so in accordance with the applicable provisions of Code Case OMN–1 together with the conditions specified for its use in Table 2 of this regulatory guide. In accordance with 10 CFR 50.55a(b)(6)(ii), applicants and licensees that have implemented versions of Code Cases OMN–1 and OMN–11 earlier than the 2006 Addenda (i.e., with the conditions as specified in Table 3 of this RG) may continue to use those versions through the end of the current IST interval. If that applicant or licensee plans to continue to implement a risk-informed IST program for its MOVs in the subsequent IST interval, then OMN–1, 2006 Addenda, with the conditions specified in Table 2 of this RG will need to be implemented.

TABLE III—CONDITIONALLY APPROVED CODE CASES—Continued

Code case No.	Code supplement	Code case title	Conditions
OMN–3	2004 Edition	Requirements for Safety Significance Categorization of Components Using Risk Insights for Inservice Testing of LWR Power Plants.	In addition to those components identified in ASME IST Program Plan, implementation of Section 1, ''Applicability,'' of the Code Case must include within the scope of a licensee's risk-informed IST Program non-ASME Code Components categorized as high safety significant components (HSSCs) that might not currently be included in the IST Program Plan. (2) The decision criteria discussed in Section 4.4.1, ''Decision Criteria,'' of the Code Case for evaluating the acceptability of aggregate risk effects (i.e., for Core Damage Frequency [CDF] and Large Early Release Frequency [LERF]) must be consistent with the guidance provided in Regulatory Guide 1.174, ''An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis.'' (3) Section 4.4.4, ''Defense in Depth,'' of the Code Case must be consistent with the guidance contained in Sections 2.2.1, ''Defense-in-Depth Evaluation''; and 2.2.2, ''Safety Margin Evaluation,'' of Regulatory Guide 1.175, ''An Approach for Plant-Specific, Risk-Informed Decisionmaking: Inservice Testing.'' (4) Implementation of Sections 4.5, ''Inservice Testing Program''; and 4.6, ''Performance Monitoring,'' of the Code Case must be consistent with the guidance pertaining to inservice testing of pumps and valves provided in Section 3.2, ''Program Implementation''; and Section 3.3, ''Performance Monitoring,'' of Regulatory Guide 1.175. Testing and performance monitoring of individual components must be performed as specified in the risk-informed components Code Cases (e.g., OMN–1, OMN–4, OMN–7, and OMN–12, as modified by the conditions discussed in this regulatory guide). (5) Implementation of Section 3.2, ''Plant Specific PRA,'' of the Code Case must be consistent with the guidance that the Owner is responsible for demonstrating and justifying the technical adequacy of the probabilistic risk assessment (PRA) analyses used as the basis to perform component risk ranking and for estimating the aggregate risk impact. Regulatory Guide 1.200, ''An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities,'' provides guidance for determining the technical adequacy of the PRA used in a risk-informed regulatory activity. Regulatory Guide 1.201, ''Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to their Safety Significance,'' describes one acceptable method to categorize the safety significance of an active component, including methods to use when a plant-specific PRA that meets the appropriate Regulatory Guide 1.200 capability for specific hazard group(s) (e.g., seismic and fire) is not available. (6) Section 4.2.4, ''Reconciliation,'' paragraph (b), is not endorsed. 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 low safety significant component (LSSC). (7) Implementation of Section 3.3, ''Living PRA,'' must be consistent with the following: (1) 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; (2) 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 (3) The review of plant changes must be performed in a timely manner and must be performed once every two refueling outages or as required by 10 CFR 50.71(h)(2) for combined license holders. Note 1: The Code Case methodology for risk ranking uses two categories of safety significance. The NRC staff has determined that this is acceptable for ranking all component types. However, the NRC staff has accepted other methodologies for risk ranking MOVs, with certain conditions that use three categories of safety significance.
OMN–4	2004 Edition	Requirements for Risk Insights for Inservice Testing of Check Valves at LWR Power Plants.	(1) Valve opening and closing functions must be demonstrated when flow testing or examination methods (nonintrusive, or disassembly and inspection) are used. (2) The initial interval for tests and associated examinations may not exceed two fuel cycles or 3 years, whichever is longer; any extension of this interval may not exceed one fuel cycle per extension with the maximum interval not to exceed 10 years. Trending and evaluation of existing data must be used to reduce or extend the time interval between tests. (3) If the Appendix II condition monitoring program is discontinued, the requirements of ISTC 4.5.1, ''Exercising Test Frequency,'' through ISTC 4.5.4, ''Valve Obturator Movement,'' (1996 and 1997 Addenda) or ISTC 3510, 3520, 3540, and 5221 (1998 Edition with the 1999 and 2000 Addenda), as applicable, must be implemented. Note 1: The conditions with respect to allowable methodologies for OMN–3 risk ranking specified for the use of OMN–1 also apply to OMN–4.
OMN–9	2004 Edition	Use of a Pump Curve for Testing	(1) When a reference curve may have been affected by repair, replacement, or routine servicing of a pump, a new reference curve must be determined, or an existing reference curve must be reconfirmed, in accordance with Section 3 of this Code Case. (2) If it is necessary or desirable, for some reason other than that stated in Section 4 of this Code Case, to establish an additional reference curve or set of curves, these new curves must be determined in accordance with Section 3.

TABLE III—CONDITIONALLY APPROVED CODE CASES—Continued

Code case No.	Code supplement	Code case title	Conditions
OMN–12	2004 Edition	Alternative Requirements for Inservice Testing Using Risk Insights for Pneumatically and Hydraulically Operated Valve Assemblies in Light-Water Reactor Power Plants (OM-Code 1998, Subsection ISTC).	(1) Paragraph 4.2, ''Inservice Test Requirements,'' of OMN–12 specifies inservice test requirements for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the Code Case. The inservice testing program must include a mix of static and dynamic valve assembly performance testing. The mix of valve assembly performance testing may be altered when justified by an engineering evaluation of test data. (2) Paragraph 4.2.2.3 of OMN 12 specifies the periodic test requirements for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the code case. The adequacy of the diagnostic test interval for each high safety significant valve assembly must be evaluated and adjusted as necessary, but not later than 5 years or three refueling outages (whichever is longer) from initial implementation of OMN–12. (3) Paragraph 4.2.3, ''Periodic Valve Assembly Exercising,'' of OMN 12 specifies periodic exercising for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the code case. Consistent with the requirement in OMN 3 to evaluate the aggregate change in risk associated with changes in test strategies, when extending exercise test intervals for high safety significant valve assemblies beyond a quarterly frequency, the potential increase in Core Damage Frequency (CDF) and risk associated with the extension must be evaluated and determined to be small and consistent with the intent of the Commission's Safety Goal Policy Statement. (4) Paragraph 4.4.1, ''Acceptance Criteria,'' of OMN 12 specifies that acceptance criteria must be established for the analysis of test data for pneumatically and hydraulically operated valve assemblies categorized as high safety significant within the scope of the code case. When establishing these acceptance criteria, the potential degradation rate and available capability margin for each valve assembly must be evaluated and determined to provide assurance that the valve assemblies are capable of performing their design basis functions until the next scheduled test. (5) Paragraph 5, ''Low Safety Significant Valve Assemblies,'' of OMN 12 specifies that the purpose of its provisions is to provide a high degree of confidence that pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the code case will perform their intended safety function if called upon. The licensee must have reasonable confidence that low safety significant valve assemblies remain capable of performing their intended design-basis safety functions until the next scheduled test. The test and evaluation methods may be less rigorous than those applied to high safety significant valve assemblies. (6) Paragraph 5.1, ''Set Points and/or Critical Parameters,'' of OMN 12 specifies requirements and guidance for establishing set points and critical parameters of pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the code case. Setpoints for these valve assemblies must be based on direct dynamic test information, a test based methodology, or grouping with dynamically tested valves, and documented according to Paragraph 5.1.4. The setpoint justification methods may be less rigorous than provided for high risk significant valve assemblies. (7) Paragraph 5.4, ''Evaluations,'' of OMN–12, specifies evaluations to be performed of pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the Code Case. Initial and periodic diagnostic testing must be performed to establish and verify the setpoints of these valve assemblies to ensure that they are capable of performing their design-basis safety functions. Methods for testing and establishing test frequencies may be less rigorous than applied to high risk significant valve assemblies. (8) Paragraph 5.6, ''Corrective Action,'' of OMN–12 specifies that corrective action must be initiated if the parameters monitored and evaluated for pneumatically and hydraulically operated valve assemblies categorized as low safety significant within the scope of the code case do not meet the established criteria. Further, if the valve assembly does not satisfy its acceptance criteria, the operability of the valve assembly must be evaluated. Note 1: Licensees are cautioned that, when implementing OMN–12, 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. Note 2: Paragraph 3.1 of OMN–12 states that ''Valve assemblies shall be classified as either high safety significant or low safety significant in accordance with Code Case OMN–3.'' This note as well as Note 2 to OMN–4 have been added to ensure the consistent consideration of risk insights.

C. ASME Code Cases Not Approved for Use

The ASME Code Cases which are currently issued by ASME but not approved for generic use by the NRC are listed in RG 1.193, ''ASME Code Cases Not Approved for Use.'' The Code Cases which are not approved for use include Code Cases on high-temperature gas cooled reactors; certain requirements in Section III, Division 2, not endorsed by the NRC, liquid metal; and submerged spent fuel waste casks. Regulatory Guide 1.193 is not incorporated by reference into § 50.55a. Regulatory Guide 1.193 is prepared by the NRC as a resource for stakeholders, allowing

them to easily identify Code Cases which the NRC has not approved for use as a generic matter. Listing of a Code Case in RG 1.193 does not preclude an application or licensee for seeking individual, case-by-case NRC approval to use a listed Code Case.

V. Petition for Rulemaking (PRM–50–89)

On December 14, 2007, Mr. Raymond West (the petitioner) submitted a PRM requesting the NRC to amend § 50.55a to allow consideration of alternatives to the NRC-approved ASME BPV and OM Code Cases. The petitioner submitted an amended petition on December 19, 2007 (ADAMS Accession No. ML073600974). The petition was docketed by the NRC as PRM–50–89. The petitioner requested that the regulations be amended to provide applicants and licensees a process for requesting NRC approval of changes or modifications to ASME Code Cases that are listed in the relevant NRC-approved RGs cited in the current regulations. The petitioner stated that the current requirements do not allow changes or modifications to be proposed as alternatives to NRC-approved ASME Code Cases, and asserted that such changes or modifications should be allowed as alternatives to NRC Code Cases. Overall, the petitioner requested that the regulations be amended to allow applicants and licensees to request authorization of NRC-approved Code Cases with proposed modifications directly through § 50.55a(a)(3).

The NRC determined that the issues raised in this PRM should be considered in the NRC's rulemaking process, and the NRC published a FRN with this determination on April 22, 2009 (74 FR 18303).

The NRC believes that Code Cases often provide alternatives that have technical merit and, in many instances, are incorporated into future ASME Code editions. The ASME Code Case process itself constitutes a method of how an applicant or licensee can seek to obtain ASME approval for a variation of a previously-approved Code provision. Section 50.55a(a)(3) currently provides specific approaches for obtaining NRC authorization of alternatives to ASME Code provisions. Inasmuch as ASME Code Cases are analogous to ASME Code provisions, it is not unreasonable to provide an analogous regulatory approach for obtaining NRC authorization of alternatives to ASME Code Cases. Therefore, the NRC has included language in § 50.55a(z) (previously § 50.55a(a)(3)) that would allow applicants and licensees to request authorization of alternatives for changes to conditions on NRC-approved ASME Code Cases in current paragraphs (b)(4), (b)(5), and (b)(6) of § 50.55a. In addition, the NRC is extending the scope of the petitioner's request for allowing alternatives to NRC-approved Code Case conditions to allow applicants and licensees to request authorization of alternatives for changes to conditions on Section III and XI of the ASME BPV Code and OM Code in current paragraphs (b)(1), (b)(2), and (b)(3).

In the final rule, the requirements in former paragraph (a)(3) have been moved to newly created paragraph (z), making room in this section for the listing of all standards to be incorporated by reference in paragraph (a). The reasons for this change is discussed in the **SUPPLEMENTARY INFORMATION** in Section VI. Changes addressing the Office of the Federal Register's Guidelines on Incorporation by Reference.

This final rule resolves and represents the NRC's final action on PRM–50–89.

VI. Changes Addressing the Office of the Federal Register's Guidelines on Incorporation by Reference

This final rule includes changes to §§ 50.54, 50.55, and 50.55a. These changes were made in accordance with the guidance for incorporation by reference of multiple standards that are included in Chapter 6 of the OFR's ''**Federal Register** Document Drafting Handbook,'' January 2011 Revision. This latest revision of the OFR's guidance provides several options for incorporating by reference multiple standards into regulations.

The NRC has incorporated by reference, in a single paragraph, the multiple standards mentioned in § 50.55a. For the least disruption to the existing structure of the section, the NRC incorporated by reference the multiple standards into § 50.55a(a), the first paragraph of the section. Each national consensus standard that is being incorporated by reference in § 50.55a has been listed separately. Accordingly, the regulatory language of §§ 50.54, 50.55, and 50.55a has been reorganized by moving existing paragraphs, creating new paragraphs, and revising introductory and regulatory texts.

The NRC has made conforming changes to references throughout § 50.55a to reflect this reorganization. A detailed discussion of the affected paragraphs, other than the aforementioned reference changes, is provided in Section VIII, ''Paragraph-by-Paragraph Discussion,'' of this document. The regulatory text of § 50.55a has been set out in its entirety for the convenience of the reader. The NRC staff has also developed reader aids to help users understand these changes (see Section VII of this document).

VII. Addition of Headings to Paragraphs

The NRC has added headings (explanatory titles) to paragraphs and all lower-level subparagraphs of § 50.55a. These headings are intended to enhance the readers' ability to identify the paragraphs (e.g., paragraphs (a), (b), (c)) and subparagraphs with the same subject matter. The NRC evaluated a range of solutions, including the creation of new regulations and relocation of existing requirements from § 50.55a to the new regulations.

Some alternatives the NRC considered were a new regulation adjacent to § 50.55a (e.g., §§ 50.55b, 50.55c, 50.55d), a new subpart containing a new series of regulations at the end of 10 CFR part 50 (e.g., subpart B beginning at § 50.200, and continuing with §§ 50.201, 50.202, 50.203), or a new part (designated for Codes and standards) containing a new series of regulations addressing Codes and standards approved for incorporation by reference by the OFR. The relocation of each existing requirement to a new regulation (or set of regulations) would follow a set of organizing principles established by the NRC after consideration of public views.

Upon consideration of these alternatives, the NRC decided that these alternatives should not be adopted—at least not at this time without further public input—and instead that the NRC should develop and adopt headings for paragraphs and subparagraphs. The primary reason for the NRC's decision is external stakeholders' objections to a previous attempt by the NRC to re-designate paragraphs in § 50.55a (75 FR 24324; May 4, 2010). As the NRC understands it, many nuclear power plant licensees' procedures reference specific paragraphs and subparagraphs of § 50.55a. It would require substantial rewriting of these procedures and documents to correct the references to the old (superseded) section, paragraphs and subparagraphs. In addition, currently-approved design certification rules may require conforming amendments to be made to correct references to ASME Code provisions on design (and possibly ISI and IST). As mentioned earlier in the response to Comment No. 1, the NRC received several public comments but deferred their consideration to a potential future rulemaking effort for reorganizing the entire § 50.55a with public input. The current reorganization of this

rulemaking is based upon two major issues- consideration of the OFR's revised guidelines for incorporating by reference consensus standards in regulations and addition of headings (explanatory titles) to paragraphs and lower-level subparagraphs of § 50.55a as reader aids.

A. NRC's Convention for Headings and Subheadings

The NRC has added headings to all first, second, third, fourth, and some fifth-level paragraphs for certain sections of § 50.55a to add clarity and a user-friendly method for following sublevel contents within a regulation. The heading for a fourth-level follows the same convention, but may designate the provision number only. Fifth-level paragraphs are only for newly incorporated Code Cases. Each first-level paragraph (designated using letters [e.g., (a), (b), (c)]) have a heading that concisely describes the general subject matter addressed in that paragraph. Each second-level paragraph (designated using numbers [e.g., (1), (2), (3)] have a heading comprised of a summary of the first-level paragraph's heading and a semicolon (''; ''), followed by a concise description of the subject matter addressed in the second paragraph. The heading for a third-level paragraph follows the same convention (i.e., a heading comprised of a summary level of the higher-level paragraph's title and a semicolon, followed by a concise description of the subject matter addressed in that subparagraph). The heading for a fourth-level paragraph follows the same convention, but designate the provision number only. The fifth-level paragraph is applied to only paragraph (a) for incorporation by reference of approved editions and addenda to the ASME BPV and OM Codes.

B. Reader Aids

The NRC staff has developed a table showing the structure of § 50.55a. This table, ''Final Reorganization of Paragraphs and Subparagraphs in 10 CFR 50.55a, 'Codes and standards''' (ADAMS Accession No. ML14015A191), is available in a separate document and outlines the section showing all paragraph designations, including the new paragraph headings. The NRC staff has also developed cross-reference tables showing the current designations for §§ 50.54, 50.55, and 50.55a regulations and the new designations for these sections. These tables contain the new headings and a description of each change and are available in separate documents (ADAMS Accession No. ML14211A050- package contains two tables).

VIII. Paragraph-by-Paragraph Discussion

Overall Considerations on the Use of ASME Code Cases

This rulemaking has amended § 50.55a to incorporate by reference RG 1.84, Revision 36, which supersedes Revision 35; RG 1.147, Revision 17, which supersedes Revision 16; and RG 1.192, Revision 1, which supersedes Revision 0. The following general guidance applies to the use of the ASME Code Cases approved in the latest versions of the RGs that are incorporated by reference into § 50.55a as part of this rulemaking.

The approval of a Code Case in the NRC RGs constitutes acceptance of its technical position for applications that are not precluded by regulatory or other requirements or by the recommendations in these or other RGs. The applicant and/or licensee are responsible for ensuring that use of the Code Case does not conflict with regulatory requirements or licensee commitments. The Code Cases listed in the RGs are acceptable for use within the limits specified in the Code Cases. If the RG states an NRC condition on the use of a Code Case, then the NRC condition supplements and does not supersede any condition(s) specified in the Code Case, unless otherwise stated in the NRC condition.

The ASME Code Cases may be revised for many reasons (e.g., to incorporate operational examination and testing experience and to update material requirements based on research results). On occasion, an inaccuracy in an equation is discovered or an examination, as practiced, is found not to be adequate to detect a newly discovered degradation mechanism. Hence, when an applicant or a licensee initially implements a Code Case, § 50.55a requires that the applicant or the licensee implement the most recent version of that Code Case as listed in the RGs incorporated by reference. Code Cases superseded by revision are no longer acceptable for new applications unless otherwise indicated.

Section III of the ASME BPV Code applies only to new construction (i.e., the edition and addenda to be used in the construction of a plant are selected based on the date of the construction permit and are not changed thereafter, except voluntarily by the applicant or the licensee). Hence, if a Section III Code Case is implemented by an applicant or a licensee and a later version of the Code Case is incorporated by reference into § 50.55a and listed in the RGs, the applicant or the licensee may use either version of the Code Case (subject, however, to whatever change requirements apply to its licensing basis (e.g., § 50.59)).

A licensee's ISI and IST programs must be updated every 10 years to the latest edition and addenda of Section XI and the OM Code, respectively, that were incorporated by reference into § 50.55a and in effect 12 months prior to the start of the next inspection and testing interval. Licensees who were using a Code Case prior to the effective date of its revision may continue to use the previous version for the remainder of the 120-month ISI or IST interval. This relieves licensees of the burden of having to update their ISI or IST program each time a Code Case is revised by the ASME and approved for use by the NRC. Code Cases apply to specific editions and addenda, and Code Cases may be revised if they are no longer accurate or adequate, so licensees choosing to continue using a Code Case during the subsequent ISI or IST interval must implement the latest version incorporated by reference into § 50.55a and listed in the RGs.

The ASME may annul Code Cases that are no longer required, are determined to be inaccurate or inadequate, or have been incorporated into the ASME BPV or OM Codes. If an applicant or a licensee applied a Code Case before it was listed as annulled, the applicant or the licensee may continue to use the Code Case until the applicant or the licensee updates its Construction Code of Record (in the case of an applicant, updates its application) or until the licensee's 120 month ISI or IST update interval expires, after which the continued use of the Code Case is prohibited unless NRC authorization is given under the current § 50.55a(a)(3). If a Code Case is incorporated by reference into § 50.55a and later annulled by the ASME because experience has shown that the design analysis, construction method, examination method, or testing method is inadequate; the NRC will amend § 50.55a and the relevant RG to remove the approval of the annulled Code Case. Applicants and licensees should not begin to implement such annulled Code Cases in advance of the rulemaking.

A Code Case may be revised, for example, to incorporate user experience. The older or superseded version of the Code Case cannot be applied by the licensee or applicant for the first time.

If an applicant or a licensee applied a Code Case before it was listed as superseded, the applicant or the licensee may continue to use the Code

Case until the applicant or the licensee updates its Construction Code of Record (in the case of an applicant, updates its application) or until the licensee's 120-month ISI or IST update interval expires, after which the continued use of the Code Case is prohibited unless NRC authorization is given under new § 50.55a(z). If a Code Case is incorporated by reference into § 50.55a and later a revised version is issued by the ASME because experience has shown that the design analysis, construction method, examination method, or testing method is inadequate; the NRC will amend § 50.55a and the relevant RG to remove the approval of the superseded Code Case. Applicants and licensees should not begin to implement such superseded Code Cases in advance of the rulemaking.

Incorporation by Reference

The final rule includes changes to §§ 50.54, 50.55, and 50.55a. This change brings the NRC's requirements into compliance with the OFR's revised guidelines for incorporating by reference consensus standards in regulations.

Section 50.54

In § 50.54, the introductory statement has been revised to include a reference to § 50.55a. This revision clarifies that nuclear power plant licensees, as described in the introductory paragraph of § 50.54, also are subject to the applicable requirements delineated in § 50.55a. In addition, the NRC revised the introductory text of this section and added and reserved paragraph (ii), and added paragraph (jj) to include a condition of every license. This requirement is currently contained in § 50.55a(a)(1), and no change to the requirement is intended by the transfer of this requirement from § 50.55a(a)(1) to § 50.54(jj), except for clarification of its applicability.

Section 50.55

In § 50.55, the introductory text has been revised to include references to existing § 50.55a, and paragraphs (g) and (h) have been added and reserved for future use. Further, existing § 50.55a(a)(1) has been moved to a newly created § 50.55(i) enabling the removal of the current regulation from the current 50.55a(a)(1). No change to the requirement is intended by this transfer, except for clarification of its applicability. The introductory text of § 50.55 has been revised to maintain the existing applicability of the requirement in the newly created § 50.55(i) to construction permits for utilization facilities.

Section 50.55a

The introductory text to § 50.55a was relocated to several other locations. There is no introductory text to § 50.55a in the new rule. The first sentence in the previous introductory text was relocated to the first sentence in § 50.55. The remaining sentences were relocated to § 50.55a(b) (second sentence), § 50.55a(b)(1) (first sentence), § 50.55a(b)(4) (first sentence), § 50.55a(c) (second sentence), § 50.55a(d) (second sentence), § 50.55a(e) (second sentence), § 50.55a(f) (second and third sentences), § 50.55a(g) (second and third sentences), and § 50.55a(h) (second sentence).

In addition to moving existing paragraphs, creating new paragraphs, and revising introductory and regulatory texts, the footnotes in § 50.55a have been reorganized to appear in sequential order. The NRC also has reserved footnote numbers so that the NRC may add a footnote in a future rulemaking without having to renumber the existing footnotes.

Paragraph (a): A new paragraph (a) has been created in § 50.55a to incorporate by reference the multiple standards currently identified in existing § 50.55a. The heading has been revised to read ''Documents approved for incorporation by reference.''

Paragraph (a)(1): This paragraph, ''*American Society of Mechanical Engineers (ASME),*'' has been added to group all ASME sections.

Paragraph (a)(1)(i): This paragraph, ''*ASME Boiler and Pressure Vessel Code, Section III,*'' has been added to discuss the availability of standards referenced in current paragraph (b)(1).

Paragraph (a)(1)(i)(A): This paragraph, ''*Rules for Construction of Nuclear Vessels,*'' has been added to group all the individual standards referenced regarding the subject matter included in current paragraph (b)(1).

Paragraph (a)(1)(i)(B): This paragraph, ''*Rules for Construction of Nuclear Power Plant Components,*'' has been added to group all the individual standards referenced regarding the subject matter included in current paragraph (b)(1).

Paragraph (a)(1)(i)(C): This paragraph, ''*Division 1 Rules for Construction of Nuclear Power Plant Components,*'' has been added to group all the individual standards referenced regarding the subject matter included in current paragraph (b)(1).

Paragraph (a)(1)(i)(D): This paragraph, ''*Rules for Construction of Nuclear Power Plant Components—Division 1,*'' has been added to group all the individual standards referenced regarding the subject matter included in current paragraph (b)(1).

Paragraph (a)(1)(i)(E): This paragraph, ''*Rules for Construction of Nuclear Facility Components—Division 1,*'' has been added to group all the individual standards referenced regarding the subject matter included in current paragraph (b)(1).

Paragraph (a)(1)(ii): This paragraph, ''ASME Boiler and Pressure Vessel Code, Section XI,'' has been added to discuss the availability of standards referenced in current paragraph (b)(2).

Paragraph (a)(1)(ii)(A): This paragraph, ''*Rules for Inservice Inspection of Nuclear Reactor Coolant Systems,*'' has been added to discuss the availability of individual standards referenced regarding the subject matter included in current paragraph (b)(2).

Paragraph (a)(1)(ii)(B): This paragraph, ''*Rules for Inservice Inspection of Nuclear Power Plant Components,*'' has been added to discuss the availability of individual standards referenced regarding the subject matter included in current paragraph (b)(2).

Paragraph (a)(1)(ii)(C): This paragraph, ''*Rules for Inservice Inspection of Nuclear Power Plant Components—Division 1,*'' has been added to discuss the availability of individual standards referenced regarding the subject matter included in current paragraph (b)(2).

Paragraph (a)(1)(iii): This paragraph, ''*ASME Code Cases: Nuclear Components,*'' has been added to discuss the newly approved Code Cases referenced regarding the subject matter in current paragraph (b).

Paragraph (a)(1)(iii)(A): This paragraph, ''*ASME Code Case N–722–1,*'' has been added to discuss the newly approved Code Case referenced regarding the subject matter in current paragraph (b).

Paragraph (a)(1)(iii)(B): This paragraph, ''*ASME Code Case N–729–1,*'' has been added to discuss the newly approved Code Case referenced regarding the subject matter in current paragraph (b).

Paragraph (a)(1)(iii)(C): This paragraph, ''*ASME Code Case N–770–1,*'' has been added to discuss the newly approved Code Case referenced regarding the subject matter in current paragraph (b).

Paragraph (a)(1)(iv): This paragraph, ''*ASME Operation and Maintenance Code,*'' has been added to group all the individual standards referenced in current paragraph (b).

Paragraph (a)(1)(iv)(A): This paragraph, ''*Code for Operation and*

Maintenance of Nuclear Power Plants,'' has been added to group all the individual standards referenced in current paragraph (b).

Paragraph (a)(1)(iv)(B): This paragraph has been added and reserved for future use.

Paragraph (a)(2): This paragraph, ''*Institute of Electrical and Electronics Engineers (IEEE) Service Center,''* has been added to list all IEEE sections.

Paragraph (a)(2)(i): This paragraph, ''*IEEE Standard 279—1971,''* has been added to discuss the availability of standards referenced in current paragraph (h)(2).

Paragraph (a)(2)(ii): This paragraph, ''*IEEE Standard 603—1991,''* has been added to discuss the availability of the standard referenced in current paragraphs (h)(2) and (h)(3).

Paragraph (a)(2)(iii): This paragraph, ''*IEEE Standard 603—1991 correction sheet,''* has been added to discuss the availability of the standard referenced in current paragraphs (h)(2) and (h)(3).

Paragraph (a)(3): This paragraph, *''U.S. Nuclear Regulatory Commission (NRC) Reproduction and Distribution Services Section,''* lists all RGs being incorporated by reference.

Paragraph (a)(3)(i): This paragraph, ''*NRC Regulatory Guide 1.84, Revision 36,''* has been added to discuss the availability of the standard.

Paragraph (a)(3)(ii): This paragraph, ''*NRC Regulatory Guide 1.147, Revision 17,''* has been added to discuss the availability of the standard.

Paragraph (a)(3)(iii): This paragraph, ''*NRC Regulatory Guide 1.192, Revision 1,''* has been added to discuss the availability of the standard.

Paragraph (b): The paragraph heading has been revised to ''*Use and conditions on the use of standards.''* The contents have been moved, in part, to § 50.55a(a) for compliance with the OFR's revised guidelines for incorporating by reference consensus standards in regulations.

Paragraphs (b)(4): Reference to the revision number for RG 1.84 has been changed from ''Revision 35'' to ''Revision 36.''

Paragraphs (b)(5): Reference to the revision number for RG 1.147 has been changed from ''Revision 16'' to ''Revision 17.''

Paragraphs (b)(6): Reference to the revision number for RG 1.192 has been changed from ''Revision 0'' to ''Revision 1.''

Paragraph (c): Introductory text has been added to the existing paragraph (c). Explanatory headings have been added for subparagraphs.

Paragraph (d): The new paragraph adds introductory text to ''*Quality Group B components,''* as part of the NRC initiative of adding headings and providing clarity. Explanatory headings have been added for subparagraphs.

Paragraph (e): The new paragraph adds introductory text to ''*Quality Group C components,''* as part of the NRC initiative of adding headings and providing clarity. Explanatory headings have been added for subparagraphs.

Paragraph (f): Introductory text has been revised and expanded in ''*Inservice testing requirements,''* as part of the NRC initiative of adding headings and providing clarity. Explanatory headings have been added for subparagraphs.

Paragraph (g): Introductory text has been revised and expanded in ''*Inservice inspection requirements,''* as part of the NRC initiative of adding headings and providing clarity. Explanatory headings have been added for subparagraphs.

Paragraphs (b)(5), (f)(2), (f)(3)(iii)(A), (f)(3)(iv)(A), (f)(4)(ii), (g)(2), (g)(3)(i), (g)(3)(ii), (g)(4)(i), and (g)(4)(ii): Reference to the revision number for RG 1.147 has been changed from ''Revision 16'' to ''Revision 17.''

Paragraph (h)(1): This paragraph has been designated as reserved because the informational content from current (h)(1) has been moved to paragraph (a)(2).

Paragraphs (i)–(y): These paragraphs have been added and reserved for future use.

Paragraph (z): This paragraph has been added to contain information that has been relocated from the introductory text of current paragraph (a)(3) and current subparagraphs (a)(3)(i)–(ii) as a result of the NRC's compliance with the OFR's revised guidelines for incorporating by reference consensus standards in regulations. Paragraph (z) has also been revised to allow applicants and licensees to request alternatives to the requirements in paragraph (b) of this section.

IX. Regulatory Flexibility Certification

Under the Regulatory Flexibility Act of 1980 (5 U.S.C. 605(b)), the Commission certifies that this final rule would not impose a significant economic impact on a substantial number of small entities. This final rule would affect only the licensing and operation of nuclear power plants. 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).

X. Regulatory Analysis

The ASME Code Cases listed in the RGs to be incorporated by reference provide voluntary alternatives to the provisions in the ASME BPV and OM Codes for design, construction, ISI, and IST of specific structures, systems, and components used in nuclear power plants. Implementation of these Code Cases is not required. Licensees and applicants use NRC-approved ASME Code Cases to reduce unnecessary regulatory burden or gain additional operational flexibility. It would be difficult for the NRC to provide these advantages independently of the ASME Code Case publication process without expending considerable additional resources. The NRC has prepared a regulatory analysis addressing the qualitative benefits of the alternatives considered in this rulemaking and comparing the costs associated with each alternative (ADAMS Accession No. ML14010A426). Copies of the regulatory analysis are available to the public as indicated in Section XVIII, ''Availability of Documents,'' of this document.

XI. Backfitting and Issue Finality

The provisions in this final rule would allow licensees and applicants to voluntarily apply NRC-approved Code Cases, sometimes with NRC-specified conditions. The approved Code Cases are listed in three RGs that are incorporated by references into § 50.55a.

An applicant's and/or a licensee's voluntary application of an approved Code Case does not constitute backfitting, inasmuch as there is no imposition of a new requirement or new position. Similarly, voluntary application of an approved Code Case by a 10 CFR part 52 applicant or licensee does not represent NRC imposition of a requirement or action, which is inconsistent with any issue finality provision in 10 CFR part 52. For these reasons, the NRC finds that this final rule does not involve any provisions requiring the preparation of a backfit analysis or documentation demonstrating that one or more of the issue finality criteria in 10 CFR part 52 are met.

XII. 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).

XIII. Finding of No Significant Environmental Impact: Environmental Assessment

This action stems from the Commission's practice of incorporating by reference the RGs listing the most recent set of NRC-approved ASME Code Cases. The purpose of this action is to allow licensees to use the Code Cases listed in the RGs as alternatives to requirements in the ASME BPV and OM Codes for the construction, ISI, and IST of nuclear power plant components. This action is intended to advance the NRC's strategic goal of ensuring adequate protection of public health and safety and the environment. It also demonstrates the agency's commitment to participate in the national consensus standards process under the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113.

The National Environmental Policy Act of 1969, as amended (NEPA), requires Federal government 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 action and alternatives to the action (42 U.S.C. 4332(C); Sec. 102(C) of NEPA).

The Commission has determined under NEPA, as amended, and the Commission's regulations in subpart A of 10 CFR part 51, that this rule would not be a major Federal action significantly affecting the quality of the human environment. Therefore, an environmental impact statement is not required.

As alternatives to the ASME Code, NRC-approved Code Cases provide an equivalent level of safety. Therefore, the probability or consequences of accidents is not changed. There are also no significant, non-radiological impacts associated with this action because no changes would be made affecting non-radiological plant effluents and because no changes would be made in activities that would adversely affect the environment. The determination of this environmental assessment is that there will be no significant offsite impact to the public from this action.

XIV. Paperwork Reduction Act Statement

This final rule contains new or amended information collection requirements that are subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). These requirements were approved by the Office of Management and Budget (OMB), approval number 3150–0011.

The burden to the public for these information collections is estimated to average a reduction of 80 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments on any aspect of these information collections, including suggestions for further reducing the burden, to the FOIA, Privacy, and Information Collections Branch (T–5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, or by email to *INFOCOLLECTS.RESOURCE@NRC.GOV;* and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB–10202 (3150–0011), Office of Management and Budget, Washington, DC 20503.

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.

XV. Congressional Review Act

In accordance with the Congressional Review Act of 1996 (5 U.S.C. 801–808), the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs of OMB.

XVI. Voluntary Consensus Standards

Section 12(d)(3) of the NTTAA, Public Law 104–113, and implementing guidance in OMB Circular A–119 (February 10, 1998), require each Federal government agency (should it decide that regulation is necessary) to use a voluntary consensus standard instead of developing a government-unique standard. An exception to using a voluntary consensus standard is allowed where the use of 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 OMB 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 approving the use of ASME BPV and OM Code Cases, which are ASME-approved alternatives to compliance with various provisions of the ASME BPV and OM Codes. The NRC's approval of the ASME Code Cases is accomplished by amending the NRC's regulations to incorporate by reference the latest revisions of the following, which are the subject of this rulemaking, into § 50.55a: RG 1.84, ''Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,'' Revision 36; RG 1.147, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,'' Revision 17; and RG 1.192, ''Operation and Maintenance Code Case Acceptability, ASME Code,'' Revision 1. These RGs list the ASME Code Cases that the NRC has approved for use. The ASME Code Cases are national consensus standards as defined in the NTTAA and OMB Circular A–119. The ASME Code Cases constitute voluntary consensus standards, in which all interested parties (including the NRC and licensees of nuclear power plants) participate. Therefore, the NRC's approval of the use of the ASME Code Cases identified in RGs 1.84, Revision 36; RG 1.147, Revision 17; and RG 1.192, Revision 1, which are the subject of this rulemaking, is consistent with the overall objectives of the NTTAA and OMB Circular A–119.

The NRC reviews each Section III, Section XI, and OM Code Case published by the ASME to ascertain whether it is consistent with the safe operation of nuclear power plants. The Code Cases found to be generically acceptable are listed in the RGs that are incorporated by reference in § 50.55a. The Code Cases found to be unacceptable are listed in RG 1.193, but licensees may still seek the NRC's approval to apply these Code Cases through the processes in § 50.55a for requesting the approval of alternatives or for relief. Code Cases that the NRC finds to be conditionally acceptable are also listed in RGs 1.84, 1.147, and 1.192, which are the subject of this rulemaking, together with the conditions that must be used if the Code Case is applied. The NRC believes that this rule complies with the NTTAA and OMB Circular A–119 despite these conditions. If the NRC did not

conditionally accept ASME Code Cases, it would disapprove these Code Cases entirely. The effect would be that licensees and applicants would submit a larger number of requests for use of alternatives under the current § 50.55a(a)(3), requests for relief under § 50.55a(f) and (g), or requests for exemptions under §§ 50.12 and/or 52.7. For these reasons, the final rule 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 the United States voluntary consensus standards bodies for use within the United States that the NRC could approve instead of the ASME Code Cases.

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 Code Cases. This is because no other multinational voluntary consensus body would develop alternatives to a voluntary consensus standard (i.e., either the ASME BPV Code or the ASME OM Code) for which they did not develop and do not maintain.

In summary, this final rule satisfies the requirements of Section 12(d)(3) of the NTTAA and OMB Circular A–119.

XVII. Availability of Regulatory Guides

Regulatory Guides Being Incorporated by Reference

The NRC is issuing three revisions to existing guides in the agency's ''Regulatory Guide'' series. This final rule is incorporating by reference these three RGs into 10 CFR 50.55a.

Revision 36 of RG 1.84, ''Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,'' is available electronically under ADAMS Accession No. ML13339A515.

Revision 17 of RG 1.147, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,'' is available electronically under ADAMS Accession No. ML13339A689.

Revision 1 of RG 1.192, ''Operation and Maintenance [OM] Code Case Acceptability, ASME OM Code,'' is available electronically under ADAMS Accession No. ML13340A034.

As discussed in Section II of this document, ''Opportunities for Public Participation,'' these three RGs were issued in draft form for public comment in June 2013. The NRC staff's responses to the public comments received are located in Section III of this document, ''Public Comment Analysis.''

Issuance of Regulatory Guide 1.193

The NRC is issuing a revision to an existing guide in the NRC's ''Regulatory Guide'' series. This RG is not being incorporated by reference in this final rule.

Revision 4 of RG 1.193, *''ASME Code Cases Not Approved for Use,''* was issued with a temporary identification of Draft Regulatory Guide, DG–1233. This revision of RG 1.193 includes new information reviewed by the NRC in ASME BPV Code Section III and Section XI Code Cases listed in Supplements 1–10 to the 2007 Edition, and the OM Code Cases listed in the 2002 Addenda through the 2006 Addenda. This is an update to RG 1.193, Revision 3, which included information from Supplements 2–11 to the 2004 Edition, and Supplement 0 to the 2007 Edition of the BPV Code.

This RG does not approve the use of the Code Cases listed herein. Licensees may submit a plant-specific request to implement one or more of the Code Cases listed in this RG. The request must address the NRC's concerns about the Code Case at issue.

The NRC published DG–1233 in the **Federal Register** on June 24, 2013 (78 FR 37848), for a 75-day public comment period. The public comment period closed on September 9, 2013. Public comments on DG–1233 and the NRC staff responses to the public comments are available in ADAMS under Accession No. ML14106A577.

XVIII. Availability of Documents

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

TABLE IV—AVAILABILITY OF DOCUMENTS

Proposed rule documents	ADAMS Accession No.
Proposed Rule–Regulatory Analysis	ML103060189
Proposed Rule–**Federal Register** Notice	ML103060003
Proposed Reorganization of Paragraphs and Subparagraphs	ML12289A121
Draft RG 1.84, Revision 36 (DG–1230)	ML102590003
Draft RG 1.147, Revision 17 (DG–1231)	ML102590004
Draft RG 1.192, Revision 1 (DG–1232)	ML102600001
Final rule documents	**ADAMS Accession No.**
Final Rule–Regulatory Analysis	ML14010A426
Final Rule–**Federal Register** Notice	ML14008A332
Final Reorganization of Paragraphs and Subparagraphs	ML14015A191
Cross-Reference Tables (package)	ML14211A050
RG 1.84, ''Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,'' Revision 36	ML13339A515
RG 1.147, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,'' Revision 17	ML13339A689
RG 1.192, ''Operation and Maintenance Code Case Acceptability, ASME OM Code,'' Revision 1	ML13340A034
RG 1.193, ''ASME Code Cases Not Approved for Use,'' Revision 4	ML13350A001
RG 1.200, ''An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-informed Activities,'' Revision 2.	ML090410014
RG 1.201, ''Guidelines for Categorizing Structures, Systems, and Components in Nuclear Power Plants According to Their Safety Significance,'' Revision 1.	ML061090627
2007/12/19—''SECY—Petition for Rulemaking to amend 10 CFR 50.55a—Rev.1'' submitted by Ray West	ML073600974
Hatch Plant Report—''Hatch, Units 1 & 2, Farley, Units 1 & 2, Vogtle, Units 1 & 2, Safety Evaluation Re. Request to Use ASME Code Case N–661''.	ML033280037

Final rule documents	ADAMS Accession No.
EPRI Technical Report—Project No. 704—BWRVIP–108: BWR Vessel & Internals Project, Technical Basis for Reduction of Inspection Requirements for Boiling Water Reactor Nozzle-to-Vessel Shell Welds & Nozzle Blend Radii.	ML023330203
Safety Evaluation of Proprietary EPRI Report—BWR Vessel and Internals Project, Technical Basis for the Reduction of Inspection Requirements for the Boiling Water Reactor Nozzle-to-Vessel Shell Welds and Nozzle Inner Radius (BWRVIP–108).	ML073600374
Comment Letter—Comment (4) of Bryan A. Erler on Behalf of ASME Supporting Draft Regulatory Guides DG–1191, DG–1192, DG–1193, and the Proposed Rule Incorporating the Final Revisions of these Regulatory Guides into 10 CFR 50.55a.	ML092190138
SRM–COMNJD–03–0002—Stabilizing the PRA Quality Expectations and Requirements	ML033520457
SECY–04–0118—Plan for the Implementation of the Commission's Phased Approach to Probabilistic Risk Assessment Quality.	ML041470505
SRM–SECY–04–0118—Plan for the Implementation of the Commission's Phased Approach to Probabilistic Risk Assessment Quality.	ML042800369
NUREG–0800—Chapter 4, Section 4.5.1, Revision 3, Control Rod Drive Structural Materials, dated March 2007	ML070230007
NUREG–0800—Chapter 5, Section 5.2.3, Revision 3, Reactor Coolant Pressure Boundary Materials, dated March 2007	ML063190006
NUREG/CR–6943—A Study of Remote Visual Methods to Detect Cracking in Reactor Components	ML073110060

List of Subjects in 10 CFR Part 50

Antitrust, Classified information, Criminal penalties, Fire protection, Incorporation by reference, Intergovernmental relations, Nuclear power plants and reactors, Radiation protection, Reactor siting criteria, Reporting and recordkeeping requirements.

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. 552 and 553, the NRC is adopting the following amendments to 10 CFR part 50.

PART 50—DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

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

Authority: Atomic Energy Act secs. 102, 103, 104, 105, 147, 149, 161, 181, 182, 183, 186, 189, 223, 234 (42 U.S.C. 2132, 2133, 2134, 2135, 2167, 2169, 2201, 2231, 2232, 2233, 2236, 2239, 2273, 2282); Energy Reorganization Act secs. 201, 202, 206 (42 U.S.C. 5841, 5842, 5846); Nuclear Waste Policy Act sec. 306 (42 U.S.C. 10226); Government Paperwork Elimination Act sec. 1704 (44 U.S.C. 3504 note); Energy Policy Act of 2005, Pub. L. No. 109–58, 119 Stat. 194 (2005). Section 50.7 also issued under Pub. L. 95–601, sec. 10, as amended by Pub. L. 102–486, sec. 2902 (42 U.S.C. 5851). Section 50.10 also issued under Atomic Energy Act secs. 101, 185 (42 U.S.C. 2131, 2235); National Environmental Protection Act sec. 102 (42 U.S.C. 4332). Sections 50.13, 50.54(d), and 50.103 also issued under Atomic Energy Act sec. 108 (42 U.S.C. 2138).

Sections 50.23, 50.35, 50.55, and 50.56 also issued under Atomic Energy Act sec. 185 (42 U.S.C. 2235). Appendix Q also issued under National Environmental Protection Act sec. 102 (42 U.S.C. 4332). Sections 50.34 and 50.54 also issued under sec. 204 (42 U.S.C. 5844). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97–415 (42 U.S.C. 2239). Section 50.78 also issued under Atomic Energy Act sec. 122 (42 U.S.C. 2152). Sections 50.80–50.81 also issued under Atomic Energy Act sec. 184 (42 U.S.C. 2234).

■ 2. In § 50.54, revise the introductory text, add reserved paragraph (ii), and add paragraph (jj) to read as follows:

§ 50.54 Conditions of licenses.

The following paragraphs of this section, with the exception of paragraphs (r) and (gg), and the applicable requirements of 10 CFR 50.55a, are conditions in every nuclear power reactor operating license issued under this part. The following paragraphs with the exception of paragraph (r), (s), and (u) of this section are conditions in every combined license issued under part 52 of this chapter, provided, however, that paragraphs (i) introductory text, (i)(1), (j), (k), (l), (m), (n), (q), (w), (x), (y), (z), and (hh) of this section are only applicable after the Commission makes the finding under § 52.103(g) of this chapter.

* * * * *

(ii) [Reserved]

(jj) Structures, systems, and components subject to the codes and standards in 10 CFR 50.55a must be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety function to be performed.

■ 3. In § 50.55, revise the introductory text, add reserved paragraphs (g) and (h), and add paragraph (i) to read as follows:

§ 50.55 Conditions of construction permits, early site permits, combined licenses, and manufacturing licenses.

Each construction permit for a utilization facility is subject to the following terms and conditions and the applicable requirements of § 50.55a; each construction permit for a production facility is subject to the following terms and conditions with the exception of paragraph (i); each early site permit is subject to the terms and conditions in paragraph (f) of this section; each manufacturing license is subject to the terms and conditions in paragraphs (e), (f), and (i) of this section and the applicable requirements of § 50.55a; and each combined license is subject to the terms and conditions in paragraphs (e), (f), and (i) of this section and the applicable requirements of § 50.55a until the date that the Commission makes the finding under § 52.103(g) of this chapter:

* * * * *

(g) [Reserved]

(h) [Reserved]

(i) Structures, systems, and components subject to the codes and standards in 10 CFR 50.55a must be designed, fabricated, erected, constructed, tested, and inspected to quality standards commensurate with the importance of the safety function to be performed.

■ 4. Revise § 50.55a to 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 at the NRC Technical Library, 11545 Rockville Pike, Rockville, Maryland 20852; telephone: 301–415–6239; 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) *American Society of Mechanical Engineers* (*ASME),* Three Park Avenue, New York, NY 10016; telephone:

1–800–843–2763; *http://www.asme.org/Codes/*.

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

(A) ''Rules for Construction of Nuclear Vessels:''

(*1*) 1963 Edition,
(*2*) Summer 1964 Addenda,
(*3*) Winter 1964 Addenda,
(*4*) 1965 Edition,
(*5*) 1965 Summer Addenda,
(*6*) 1965 Winter Addenda,
(*7*) 1966 Summer Addenda,
(*8*) 1966 Winter Addenda,
(*9*) 1967 Summer Addenda,
(*10*) 1967 Winter Addenda,
(*11*) 1968 Edition,
(*12*) 1968 Summer Addenda,
(*13*)1968 Winter Addenda,
(*14*) 1969 Summer Addenda,
(*15*) 1969 Winter Addenda,
(*16*) 1970 Summer Addenda, and
(*17*) 1970 Winter Addenda.

(B) ''Rules for Construction of Nuclear Power Plant Components:''

(*1*) 1971 Edition,
(*2*) 1971 Summer Addenda,
(*3*) 1971 Winter Addenda,
(*4*) 1972 Summer Addenda,
(*5*) 1972 Winter Addenda,
(*6*) 1973 Summer Addenda, and
(*7*) 1973 Winter Addenda.

(C) ''Division 1 Rules for Construction of Nuclear Power Plant Components:''

(*1*) 1974 Edition,
(*2*) 1974 Summer Addenda,
(*3*) 1974 Winter Addenda,
(*4*) 1975 Summer Addenda,
(*5*) 1975 Winter Addenda,
(*6*) 1976 Summer Addenda, and
(*7*) 1976 Winter Addenda;

(D) ''Rules for Construction of Nuclear Power Plant Components—Division 1'';

(*1*) 1977 Edition,
(*2*) 1977 Summer Addenda,
(*3*) 1977 Winter Addenda,
(*4*) 1978 Summer Addenda,
(*5*) 1978 Winter Addenda,
(*6*) 1979 Summer Addenda,
(*7*) 1979 Winter Addenda,
(*8*) 1980 Edition,
(*9*) 1980 Summer Addenda,
(*10*) 1980 Winter Addenda,
(*11*) 1981 Summer Addenda,
(*12*) 1981 Winter Addenda,
(*13*) 1982 Summer Addenda,
(*14*) 1982 Winter Addenda,
(*15*) 1983 Edition,
(*16*) 1983 Summer Addenda,
(*17*) 1983 Winter Addenda,
(*18*) 1984 Summer Addenda,
(*19*) 1984 Winter Addenda,
(*20*) 1985 Summer Addenda,
(*21*) 1985 Winter Addenda,
(*22*) 1986 Edition,
(*23*) 1986 Addenda,
(*24*) 1987 Addenda,
(*25*) 1988 Addenda,
(*26*) 1989 Edition,
(*27*) 1989 Addenda,
(*28*) 1990 Addenda,
(*29*) 1991 Addenda,
(*30*) 1992 Edition,
(*31*) 1992 Addenda,
(*32*) 1993 Addenda,
(*33*) 1994 Addenda,
(*34*) 1995 Edition,
(*35*) 1995 Addenda,
(*36*) 1996 Addenda, and
(*37*) 1997 Addenda.

(E) ''Rules for Construction of Nuclear Facility Components—Division 1:''

(*1*) 1998 Edition,
(*2*) 1998 Addenda,
(*3*) 1999 Addenda,
(*4*) 2000 Addenda,
(*5*) 2001 Edition,
(*6*) 2001 Addenda,
(*7*) 2002 Addenda,
(*8*) 2003 Addenda,
(*9*) 2004 Edition,
(*10*) 2005 Addenda,
(*11*) 2006 Addenda,
(*12*) 2007 Edition, and
(*13*) 2008 Addenda.

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

(A) ''Rules for Inservice Inspection of Nuclear Reactor Coolant Systems:''

(*1*) 1970 Edition,
(*2*) 1971 Edition,
(*3*) 1971 Summer Addenda,
(*4*) 1971 Winter Addenda,
(*5*) 1972 Summer Addenda,
(*6*) 1972 Winter Addenda,
(*7*) 1973 Summer Addenda, and
(*8*) 1973 Winter Addenda.

(B) ''Rules for Inservice Inspection of Nuclear Power Plant Components:''

(*1*) 1974 Edition,
(*2*) 1974 Summer Addenda,
(*3*) 1974 Winter Addenda, and
(*4*) 1975 Summer Addenda.

(C) ''Rules for Inservice Inspection of Nuclear Power Plant Components—Division 1:''

(*1*) 1977 Edition,
(*2*) 1977 Summer Addenda,
(*3*) 1977 Winter Addenda,
(*4*) 1978 Summer Addenda,
(*5*) 1978 Winter Addenda,
(*6*) 1979 Summer Addenda,
(*7*) 1979 Winter Addenda,
(*8*) 1980 Edition,
(*9*) 1980 Winter Addenda,
(*10*) 1981 Summer Addenda,
(*11*) 1981 Winter Addenda,
(*12*) 1982 Summer Addenda,
(*13*) 1982 Winter Addenda,
(*14*) 1983 Edition,
(*15*) 1983 Summer Addenda,
(*16*) 1983 Winter Addenda,
(*17*) 1984 Summer Addenda,
(*18*) 1984 Winter Addenda,
(*19*) 1985 Summer Addenda,
(*20*) 1985 Winter Addenda,
(*21*) 1986 Edition,
(*22*) 1986 Addenda,
(*23*) 1987 Addenda,
(*24*) 1988 Addenda,
(*25*) 1989 Edition,
(*26*) 1989 Addenda,
(*27*) 1990 Addenda,
(*28*) 1991 Addenda,
(*29*) 1992 Edition,
(*30*) 1992 Addenda,
(*31*) 1993 Addenda,
(*32*) 1994 Addenda,
(*33*) 1995 Edition,
(*34*) 1995 Addenda,
(*35*) 1996 Addenda,
(*36*) 1997 Addenda,
(*37*) 1998 Edition,
(*38*) 1998 Addenda,
(*39*) 1999 Addenda,
(*40*) 2000 Addenda,
(*41*) 2001 Edition,
(*42*) 2001 Addenda,
(*43*) 2002 Addenda,
(*44*) 2003 Addenda,
(*45*) 2004 Edition,
(*46*) 2005 Addenda,
(*47*) 2006 Addenda,
(*48*) 2007 Edition, and
(*49*) 2008 Addenda.

(iii) *ASME Code Cases: Nuclear Components*—(A) *ASME Code Case N–722–1.* ASME Code Case N–722–1, ''Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials, Section XI, Division 1'' (Approval Date: January 26, 2009), with the conditions in paragraph (g)(6)(ii)(E) of this section.

(B) *ASME Code Case N–729–1.* ASME Code Case N–729–1, ''Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds, Section XI, Division 1'' (Approval Date: March 28, 2006), with the conditions in paragraph (g)(6)(ii)(D) of this section.

(C) *ASME Code Case N–770–1.* ASME Code Case N–770–1, ''Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated with Alloy 600/82/182 Materials, Section XI, Division 1'' (Approval Date: December 25, 2009), with the conditions in paragraph (g)(6)(ii)(F) of this section.

(iv) *ASME Operation and Maintenance Code.* The editions and addenda for the ASME Code for Operation and Maintenance of Nuclear

Power Plants are listed below, but limited to those provisions identified in paragraph (b)(3) of this section.

(A) ''Code for Operation and Maintenance of Nuclear Power Plants:''

(*1*) 1995 Edition,

(*2*) 1996 Addenda,

(*3*) 1997 Addenda,

(*4*) 1998 Edition,

(*5*) 1999 Addenda,

(*6*) 2000 Addenda,

(*7*) 2001 Edition,

(*8*) 2002 Addenda,

(*9*) 2003 Addenda,

(*10*) 2004 Edition,

(*11*) 2005 Addenda, and

(*12*) 2006 Addenda.

(B) [Reserved]

(2) *Institute of Electrical and Electronics Engineers (IEEE) Service Center,* 445 Hoes Lane, Piscataway, NJ 08855; telephone: 1–800–678–4333; *http://ieeexplore.ieee.org.*

(i) *IEEE standard 279–1971.* (IEEE Std 279–1971), ''Criteria for Protection Systems for Nuclear Power Generating Stations'' (Approval Date: June 3, 1971), referenced in paragraph (h)(2) of this section.

(ii) *IEEE Standard 603–1991.* (IEEE Std 603–1991), ''Standard Criteria for Safety Systems for Nuclear Power Generating Stations'' (Approval Date: June 27, 1991), referenced in paragraphs (h)(2) and (3) of this section. All other standards that are referenced in IEEE Std 603–1991 are not approved for incorporation by reference.

(iii) *IEEE standard 603–1991, correction sheet.* (IEEE Std 603–1991 correction sheet), ''Standard Criteria for Safety Systems for Nuclear Power Generating Stations, Correction Sheet, Issued January 30, 1995, '' referenced in paragraphs (h)(2) and (3) of this section. (Copies of this correction sheet may be purchased from Thomson Reuters, 3916 Ranchero Dr., Ann Arbor, MI 48108; *http://www.techstreet.com.*)

(3) *U.S. Nuclear Regulatory Commission (NRC) Public Document Room,* 11555 Rockville Pike, Rockville, Maryland 20852; telephone: 1–800–397–4209; email: *pdr.resource@nrc.gov; http://www.nrc.gov/reading-rm/doc-collections/reg-guides/.*

(i) *NRC Regulatory Guide 1.84, Revision 36.* NRC Regulatory Guide 1.84, Revision 36, ''Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,'' dated August 2014, with the requirements in paragraph (b)(4) of this section.

(ii) *NRC Regulatory Guide 1.147, Revision 17.* NRC Regulatory Guide 1.147, Revision 17, ''Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,'' dated August 2014, which lists ASME Code Cases that the NRC has approved in accordance with the requirements in paragraph (b)(5) of this section.

(iii) *NRC Regulatory Guide 1.192, Revision 1.* NRC Regulatory Guide 1.192, Revision 1, ''Operation and Maintenance Code Case Acceptability, ASME OM Code,'' dated August 2014, which lists ASME Code Cases that the NRC has approved in accordance with the requirements in paragraph (b)(6) of this section.

(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 Code for 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 2008 Addenda (Division 1), subject to the following conditions:

(i) *Section III condition: Section III materials.* When applying the 1992 Edition of Section III, applicants or licensees must apply the 1992 Edition with the 1992 Addenda of Section II of the ASME Boiler and Pressure Vessel Code.

(ii) *Section III condition: Weld leg dimensions.* When applying the 1989 Addenda through the latest edition and addenda, applicants or licensees may not apply subparagraphs NB–3683.4(c)(1) and NB–3683.4(c)(2) or 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 size less than 1.09 t_n.

(iii) *Section III condition: Seismic design of piping.* Applicants or licensees may use Subarticles NB–3200, NB–3600, NC–3600, and ND–3600 for seismic design of piping, up to and including the 1993 Addenda, subject to the condition specified in paragraph (b)(1)(ii) of this section. Applicants or licensees may not use these subarticles for seismic design of piping in the 1994 Addenda through the 2005 Addenda incorporated by reference in paragraph (a)(1) of this section, except that Subarticle NB–3200 in the 2004 Edition through the 2008 Addenda may be used by applicants and licensees, subject to the condition in paragraph (b)(1)(iii)(A) of this section. Applicants or licensees may use Subarticles NB–3600, NC–3600, and ND–3600 for the seismic design of piping in the 2006 Addenda through the 2008 Addenda, subject to the conditions of this paragraph corresponding to those subarticles.

(A) *Seismic design of piping: First provision.* When applying Note (1) of Figure NB–3222–1 for Level B service limits, the calculation of P_b stresses must include reversing dynamic loads (including inertia earthquake effects) if evaluation of these loads is required by NB–3223(b).

(B) *Seismic design of piping: Second provision.* For Class 1 piping, the material and D_o/t requirements of NB–3656(b) must be met for all Service Limits when the Service Limits include reversing dynamic loads, and the alternative rules for reversing dynamic loads are used.

(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 Facilities,'' 1986 Edition through the 1994 Edition, are acceptable for use, provided that the edition and addenda of NQA–1 specified in NCA–4000 is used in conjunction with the administrative, quality, and technical provisions contained in the edition and addenda of Section III being used.

(v) *Section III condition: Independence of inspection.* Applicants or licensees may not apply NCA–4134.10(a) of Section III, 1995 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1) of this section.

(vi) *Section III condition: Subsection NH.* The provisions in Subsection NH, ''Class 1 Components in Elevated Temperature Service,'' 1995 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1) of this section, may only be used for the design and construction of Type 316 stainless steel pressurizer heater sleeves where service conditions do not cause the components to reach temperatures exceeding 900 °F.

(vii) *Section III condition: Capacity certification and demonstration of function of incompressible-fluid pressure-relief valves.* When applying the 2006 Addenda through the 2007 Edition up to and including the 2008 Addenda, 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.

(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 2007 Edition with the 2008 Addenda, subject to the following conditions:

(i) [Reserved]

(ii) *Section XI condition: Pressure-retaining welds in ASME Code Class 1 piping (applies to Table IWB–2500 and IWB–2500–1 and Category B–J).* If the facility's application for a construction permit was docketed prior to July 1, 1978, the extent of examination for Code Class 1 pipe welds may be determined by the requirements of Table IWB–2500 and Table IWB–2600 Category B–J of Section XI of the ASME BPV Code in the 1974 Edition and Addenda through the Summer 1975 Addenda or other requirements the NRC may adopt.

(iii) [Reserved]

(iv) [Reserved]

(v) [Reserved]

(vi) *Section XI condition: Effective edition and addenda of Subsection IWE and Subsection IWL.* Applicants or licensees 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.

(vii) *Section XI condition: Section XI references to OM Part 4, OM Part 6, and OM Part 10 (Table IWA–1600–1).* When using Table IWA–1600–1, ''Referenced Standards and Specifications,'' in the Section XI, Division 1, 1987 Addenda, 1988 Addenda, or 1989 Edition, the specified ''Revision Date or Indicator'' for ASME/ANSI OM part 4, ASME/ANSI part 6, and ASME/ANSI part 10 must be the OMa–1988 Addenda to the OM–1987 Edition. These requirements have been incorporated into the OM Code, which is incorporated by reference in paragraph (a)(1)(iv) 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 through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, must apply paragraph (b)(2)(viii)(E) of this section.

(A) *Concrete containment examinations: First provision.* Grease caps that are accessible must be visually examined to detect grease leakage or grease cap deformations. Grease caps must be removed for this examination when there is evidence of grease cap deformation that indicates deterioration of anchorage hardware.

(B) *Concrete containment examinations: Second provision.* When evaluation of consecutive surveillances of prestressing forces for the same tendon or tendons in a group indicates a trend of prestress loss such that the tendon force(s) would be less than the minimum design prestress requirements before the next inspection interval, an evaluation must be performed and reported in the Engineering Evaluation Report as prescribed in IWL–3300.

(C) *Concrete containment examinations: Third provision.* When the elongation corresponding to a specific load (adjusted for effective wires or strands) during retensioning of tendons differs by more than 10 percent from that recorded during the last measurement, an evaluation must be performed to determine whether the difference is related to wire failures or slip of wires in anchorage. A difference of more than 10 percent must be identified in the ISI Summary Report required by IWA–6000.

(D) *Concrete containment examinations: Fourth provision.* The applicant or licensee must report the following conditions, if they occur, in the ISI Summary Report required by IWA–6000:

(*1*) The sampled sheathing filler grease contains chemically combined water exceeding 10 percent by weight or the presence of free water;

(*2*) The absolute difference between the amount removed and the amount replaced exceeds 10 percent of the tendon net duct volume; and

(*3*) Grease leakage is detected during general visual examination of the containment surface.

(E) *Concrete containment examinations: Fifth provision.* For Class CC applications, the applicant or licensee must evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or the result in degradation to such inaccessible areas. For each inaccessible area identified, the applicant or licensee must provide the following in the ISI Summary Report required by IWA–6000:

(*1*) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;

(*2*) An evaluation of each area, and the result of the evaluation; and

(*3*) A description of necessary corrective actions.

(F) *Concrete containment examinations: Sixth provision.* Personnel that examine containment concrete surfaces and tendon hardware, wires, or strands must meet the qualification provisions in IWA–2300. The ''owner-defined'' personnel qualification provisions in IWL–2310(d) are not approved for use.

(G) *Concrete containment examinations: Seventh provision.* Corrosion protection material must be restored following concrete containment post-tensioning system repair and replacement activities in accordance with the quality assurance program requirements specified in IWA–1400.

(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 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.

(A) *Metal containment examinations: First provision.* For Class MC applications, the following apply to inaccessible areas.

(*1*) The applicant or licensee must evaluate the acceptability of inaccessible areas when conditions exist in accessible areas that could indicate the presence of or could result in degradation to such inaccessible areas.

(*2*) For each inaccessible area identified for evaluation, the applicant or licensee must provide the following in the ISI Summary Report as required by IWA–6000:

(*i*) A description of the type and estimated extent of degradation, and the conditions that led to the degradation;

(*ii*) An evaluation of each area, and the result of the evaluation; and

(*iii*) A description of necessary corrective actions.

(B) *Metal containment examinations: Second provision.* When performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA–2210–1 may be extended and the minimum illumination requirements specified in Table IWA–2210–1 may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.

(C) *Metal containment examinations: Third provision.* The examinations specified in Examination Category E–B, Pressure Retaining Welds, and Examination Category E–F, Pressure Retaining Dissimilar Metal Welds, are optional.

(D) *Metal containment examinations: Fourth provision.* This paragraph (b)(2)(ix)(D) may be used as an alternative to the requirements of IWE–2430.

(*1*) 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:

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

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

(*iii*) A description of necessary corrective actions.

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

(E) *Metal containment examinations: Fifth provision.* A general visual examination as required by Subsection IWE must be performed once each period.

(F) *Metal containment examinations: Sixth provision.* VT–1 and VT–3 examinations must be conducted in accordance with IWA–2200. Personnel conducting examinations in accordance with the VT–1 or VT–3 examination method must be qualified in accordance with IWA–2300. The ''owner-defined'' personnel qualification provisions in IWE–2330(a) for personnel that conduct VT–1 and VT–3 examinations are not approved for use.

(G) *Metal containment examinations: Seventh provision.* The VT–3 examination method must be used to conduct the examinations in Items E1.12 and E1.20 of Table IWE–2500–1, and the VT–1 examination method must be used to conduct the examination in Item E4.11 of Table IWE–2500–1. An examination of the pressure-retaining bolted connections in Item E1.11 of Table IWE–2500–1 using the VT–3 examination method must be conducted once each interval. The ''owner-defined'' visual examination provisions in IWE–2310(a) are not approved for use for VT–1 and VT–3 examinations.

(H) *Metal containment examinations: Eighth provision.* Containment bolted connections that are disassembled during the scheduled performance of the examinations in Item E1.11 of Table IWE–2500–1 must be examined using the VT–3 examination method. Flaws or degradation identified during the performance of a VT–3 examination must be examined in accordance with the VT–1 examination method. The criteria in the material specification or IWB–3517.1 must be used to evaluate containment bolting flaws or degradation. As an alternative to performing VT–3 examinations of containment bolted connections that are disassembled during the scheduled performance of Item E1.11, VT–3 examinations of containment bolted connections may be conducted whenever containment bolted connections are disassembled for any reason.

(I) *Metal containment examinations: Ninth provision.* The ultrasonic examination acceptance standard specified in IWE–3511.3 for Class MC pressure-retaining components must also be applied to metallic liners of Class CC pressure-retaining components.

(J) *Metal containment examinations: Tenth provision.* In general, a repair/replacement activity such as replacing a large containment penetration, cutting a large construction opening in the containment pressure boundary to replace steam generators, reactor vessel heads, pressurizers, or other major equipment; or other similar modification is considered a major containment modification. When applying IWE–5000 to Class MC pressure-retaining components, any major containment modification or repair/replacement must be followed by a Type A test to provide assurance of both containment structural integrity and leaktight integrity prior to returning to service, in accordance with 10 CFR part 50, Appendix J, Option A or Option B on which the applicant's or licensee's Containment Leak-Rate Testing Program is based. When applying IWE–5000, if a Type A, B, or C Test is performed, the test pressure and acceptance standard for the test must be in accordance with 10 CFR part 50, Appendix J.

(x) *Section XI condition: Quality assurance.* When applying Section XI editions and addenda later than the 1989 Edition, the requirements of NQA–1, ''Quality Assurance Requirements for Nuclear Facilities,'' 1979 Addenda through the 1989 Edition, are acceptable as permitted by IWA–1400 of Section XI, if the licensee uses its 10 CFR part 50, Appendix B, 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.

(xi) [Reserved]

(xii) *Section XI condition: Underwater welding.* The provisions in IWA–4660, ''Underwater Welding,'' of Section XI, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, are not approved for use on irradiated material.

(xiii) [Reserved]

(xiv) *Section XI condition: Appendix VIII personnel qualification.* All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII must receive 8 hours of annual hands-on training on specimens that contain cracks. Licensees applying the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section may use the annual practice requirements in VII–4240 of Appendix VII of Section XI in place of the 8 hours of annual hands-on training provided that the supplemental practice is performed on material or welds that contain cracks, or by analyzing prerecorded data from material or welds that contain cracks. In either case, training must be completed no earlier than 6 months prior to performing ultrasonic examinations at a licensee's facility.

(xv) *Section XI condition: Appendix VIII specimen set and qualification requirements.* Licensees using Appendix VIII in the 1995 Edition through the 2001 Edition of the ASME Boiler and Pressure Vessel Code may elect to comply with all of the provisions in paragraphs (b)(2)(xv)(A) through (M) of this section, except for paragraph (b)(2)(xv)(F) of this section, which may be used at the licensee's option. Licensees using editions and addenda after 2001 Edition through the 2006 Addenda must use the 2001 Edition of Appendix VIII and may elect to comply with all of the provisions in paragraphs (b)(2)(xv)(A) through (M) of this section, except for paragraph (b)(2)(xv)(F) of this section, which may be used at the licensee's option.

(A) *Specimen set and qualification: First provision.* When applying Supplements 2, 3, and 10 to Appendix VIII, the following examination coverage criteria requirements must be used:

(*1*) Piping must be examined in two axial directions, and when examination in the circumferential direction is required, the circumferential examination must be performed in two directions, provided access is available. Dissimilar metal welds must be examined axially and circumferentially.

(*2*) Where examination from both sides is not possible, full coverage credit may be claimed from a single side for ferritic welds. Where examination from both sides is not possible on austenitic welds or dissimilar metal welds, full coverage credit from a single side may be claimed only after completing a successful single-sided Appendix VIII demonstration using flaws on the opposite side of the weld. Dissimilar metal weld qualifications must be demonstrated from the austenitic side of the weld, and the qualification may be expanded for austenitic welds with no austenitic sides using a separate add-on performance demonstration. Dissimilar metal welds may be examined from either side of the weld.

(B) *Specimen set and qualification: Second provision.* The following conditions must be used in addition to the requirements of Supplement 4 to Appendix VIII:

(*1*) Paragraph 3.1, Detection acceptance criteria—Personnel are qualified for detection if the results of the performance demonstration satisfy the detection requirements of ASME Section XI, Appendix VIII, Table VIII–S4–1, and no flaw greater than 0.25 inch through-wall dimension is missed.

(*2*) Paragraph 1.1(c), Detection test matrix—Flaws smaller than the 50 percent of allowable flaw size, as defined in IWB–3500, need not be included as detection flaws. For procedures applied from the inside surface, use the minimum thickness specified in the scope of the procedure to calculate a/t. For procedures applied from the outside surface, the actual thickness of the test specimen is to be used to calculate a/t.

(C) *Specimen set and qualification: Third provision.* When applying Supplement 4 to Appendix VIII, the following conditions must be used:

(*1*) A depth sizing requirement of 0.15 inch RMS must be used in lieu of the requirements in Subparagraphs 3.2(a) and 3.2(c), and a length sizing requirement of 0.75 inch RMS must be used in lieu of the requirement in Subparagraph 3.2(b).

(*2*) In lieu of the location acceptance criteria requirements of Subparagraph 2.1(b), a flaw will be considered detected when reported within 1.0 inch or 10 percent of the metal path to the flaw, whichever is greater, of its true location in the X and Y directions.

(*3*) In lieu of the flaw type requirements of Subparagraph 1.1(e)(1), a minimum of 70 percent of the flaws in the detection and sizing tests must be cracks. Notches, if used, must be limited by the following:

(*i*) Notches must be limited to the case where examinations are performed from the clad surface.

(*ii*) Notches must be semielliptical with a tip width of less than or equal to 0.010 inches.

(*iii*) Notches must be perpendicular to the surface within ±2 degrees.

(*4*) In lieu of the detection test matrix requirements in paragraphs 1.1(e)(2) and 1.1(e)(3), personnel demonstration test sets must contain a representative distribution of flaw orientations, sizes, and locations.

(D) *Specimen set and qualification: Fourth provision.* The following conditions must be used in addition to the requirements of Supplement 6 to Appendix VIII:

(*1*) Paragraph 3.1, Detection Acceptance Criteria—Personnel are qualified for detection if:

(*i*) No surface connected flaw greater than 0.25 inch through-wall has been missed.

(*ii*) No embedded flaw greater than 0.50 inch through-wall has been missed.

(*2*) Paragraph 3.1, Detection Acceptance Criteria—For procedure qualification, all flaws within the scope of the procedure are detected.

(*3*) Paragraph 1.1(b) for detection and sizing test flaws and locations—Flaws smaller than the 50 percent of allowable flaw size, as defined in IWB–3500, need not be included as detection flaws. Flaws that are less than the allowable flaw size, as defined in IWB–3500, may be used as detection and sizing flaws.

(*4*) Notches are not permitted.

(E) *Specimen set and qualification: Fifth provision.* When applying Supplement 6 to Appendix VIII, the following conditions must be used:

(*1*) A depth sizing requirement of 0.25 inch RMS must be used in lieu of the requirements of subparagraphs 3.2(a), 3.2(c)(2), and 3.2(c)(3).

(*2*) In lieu of the location acceptance criteria requirements in Subparagraph 2.1(b), a flaw will be considered detected when reported within 1.0 inch or 10 percent of the metal path to the flaw, whichever is greater, of its true location in the X and Y directions.

(*3*) In lieu of the length sizing criteria requirements of Subparagraph 3.2(b), a length sizing acceptance criteria of 0.75 inch RMS must be used.

(*4*) In lieu of the detection specimen requirements in Subparagraph 1.1(e)(1), a minimum of 55 percent of the flaws must be cracks. The remaining flaws may be cracks or fabrication type flaws, such as slag and lack of fusion. The use of notches is not allowed.

(*5*) In lieu of paragraphs 1.1(e)(2) and 1.1(e)(3) detection test matrix, personnel demonstration test sets must contain a representative distribution of flaw orientations, sizes, and locations.

(F) *Specimen set and qualification: Sixth provision.* The following conditions may be used for personnel qualification for combined Supplement 4 to Appendix VIII and Supplement 6 to Appendix VIII qualification. Licensees choosing to apply this combined qualification must apply all of the provisions of Supplements 4 and 6 including the following conditions:

(*1*) For detection and sizing, the total number of flaws must be at least 10. A

minimum of 5 flaws must be from Supplement 4, and a minimum of 50 percent of the flaws must be from Supplement 6. At least 50 percent of the flaws in any sizing must be cracks. Notches are not acceptable for Supplement 6.

(*2*) Examination personnel are qualified for detection and length sizing when the results of any combined performance demonstration satisfy the acceptance criteria of Supplement 4 to Appendix VIII.

(*3*) Examination personnel are qualified for depth sizing when Supplement 4 to Appendix VIII and Supplement 6 to Appendix VIII flaws are sized within the respective acceptance criteria of those supplements.

(G) *Specimen set and qualification: Seventh provision.* When applying Supplement 4 to Appendix VIII, Supplement 6 to Appendix VIII, or combined Supplement 4 and Supplement 6 qualification, the following additional conditions must be used, and examination coverage must include:

(*1*) The clad-to-base-metal-interface, including a minimum of 15 percent T (measured from the clad-to-base-metal-interface), must be examined from four orthogonal directions using procedures and personnel qualified in accordance with Supplement 4 to Appendix VIII.

(*2*) If the clad-to-base-metal-interface procedure demonstrates detectability of flaws with a tilt angle relative to the weld centerline of at least 45 degrees, the remainder of the examination volume is considered fully examined if coverage is obtained in one parallel and one perpendicular direction. This must be accomplished using a procedure and personnel qualified for single-side examination in accordance with Supplement 6. Subsequent examinations of this volume may be performed using examination techniques qualified for a tilt angle of at least 10 degrees.

(*3*) The examination volume not addressed by paragraph (b)(2)(xv)(G)(*1*) of this section is considered fully examined if coverage is obtained in one parallel and one perpendicular direction, using a procedure and personnel qualified for single sided examination when the conditions in paragraph (b)(2)(xv)(G)(*2*) are met.

(H) *Specimen set and qualification: Eighth provision.* When applying Supplement 5 to Appendix VIII, at least 50 percent of the flaws in the demonstration test set must be cracks and the maximum misorientation must be demonstrated with cracks. Flaws in nozzles with bore diameters equal to or less than 4 inches may be notches.

(I) *Specimen set and qualification: Ninth provision.* When applying Supplement 5, Paragraph (a), to Appendix VIII, the number of false calls allowed must be D/10, with a maximum of 3, where D is the diameter of the nozzle.

(J) [Reserved]

(K) *Specimen set and qualification: Eleventh provision.* When performing nozzle-to-vessel weld examinations, the following conditions must be used when the requirements contained in Supplement 7 to Appendix VIII are applied for nozzle-to-vessel welds in conjunction with Supplement 4 to Appendix VIII, Supplement 6 to Appendix VIII, or combined Supplement 4 and Supplement 6 qualification.

(*1*) For examination of nozzle-to-vessel welds conducted from the bore, the following conditions are required to qualify the procedures, equipment, and personnel:

(*i*) For detection, a minimum of four flaws in one or more full-scale nozzle mock-ups must be added to the test set. The specimens must comply with Supplement 6, paragraph 1.1, to Appendix VIII, except for flaw locations specified in Table VIII S6–1. Flaws may be notches, fabrication flaws, or cracks. Seventy-five (75) percent of the flaws must be cracks or fabrication flaws. Flaw locations and orientations must be selected from the choices shown in paragraph (b)(2)(xv)(K)(*4*) of this section, Table VIII–S7–1—Modified, with the exception that flaws in the outer eighty-five (85) percent of the weld need not be perpendicular to the weld. There may be no more than two flaws from each category, and at least one subsurface flaw must be included.

(*ii*) For length sizing, a minimum of four flaws as in paragraph (b)(2)(xv)(K)(*1*)(*i*) of this section must be included in the test set. The length sizing results must be added to the results of combined Supplement 4 to Appendix VIII and Supplement 6 to Appendix VIII. The combined results must meet the acceptance standards contained in paragraph (b)(2)(xv)(E)(*3*) of this section.

(*iii*) For depth sizing, a minimum of four flaws as in paragraph (b)(2)(xv)(K)(*1*)(*i*) of this section must be included in the test set. Their depths must be distributed over the ranges of Supplement 4, Paragraph 1.1, to Appendix VIII, for the inner 15 percent of the wall thickness and Supplement 6, Paragraph 1.1, to Appendix VIII, for the remainder of the wall thickness. The depth sizing results must be combined with the sizing results from Supplement 4 to Appendix VIII for the inner 15 percent and to Supplement 6 to Appendix VIII for the remainder of the wall thickness. The combined results must meet the depth sizing acceptance criteria contained in paragraphs (b)(2)(xv)(C)(*1*), (b)(2)(xv)(E)(*1*), and (b)(2)(xv)(F)(*3*) of this section.

(*2*) For examination of reactor pressure vessel nozzle-to-vessel welds conducted from the inside of the vessel, the following conditions are required:

(*i*) The clad-to-base-metal-interface and the adjacent examination volume to a minimum depth of 15 percent T (measured from the clad-to-base-metal-interface) must be examined from four orthogonal directions using a procedure and personnel qualified in accordance with Supplement 4 to Appendix VIII as conditioned by paragraphs (b)(2)(xv)(B) and (C) of this section.

(*ii*) When the examination volume defined in paragraph (b)(2)(xv)(K)(*2*)(*i*) of this section cannot be effectively examined in all four directions, the examination must be augmented by examination from the nozzle bore using a procedure and personnel qualified in accordance with paragraph (b)(2)(xv)(K)(*1*) of this section.

(*iii*) The remainder of the examination volume not covered by paragraph (b)(2)(xv)(K)(*2*)(*ii*) of this section or a combination of paragraphs (b)(2)(xv)(K)(*2*)(*i*) and (*ii*) of this section, must be examined from the nozzle bore using a procedure and personnel qualified in accordance with paragraph (b)(2)(xv)(K)(*1*) of this section, or from the vessel shell using a procedure and personnel qualified for single sided examination in accordance with Supplement 6 to Appendix VIII, as conditioned by paragraphs (b)(2)(xv)(D) through (G) of this section.

(*3*) For examination of reactor pressure vessel nozzle-to-shell welds conducted from the outside of the vessel, the following conditions are required:

(*i*) The clad-to-base-metal-interface and the adjacent metal to a depth of 15 percent T (measured from the clad-to-base-metal-interface) must be examined from one radial and two opposing circumferential directions using a procedure and personnel qualified in accordance with Supplement 4 to Appendix VIII, as conditioned by paragraphs (b)(2)(xv)(B) and (C) of this section, for examinations performed in the radial direction, and Supplement 5 to Appendix VIII, as conditioned by paragraph (b)(2)(xv)(J) of this section, for examinations performed in the circumferential direction.

(*ii*) The examination volume not addressed by paragraph (b)(2)(xv)(K)(*3*)(*i*) of this section must be examined in a minimum of one radial direction using a procedure and personnel qualified for single sided examination in accordance with Supplement 6 to Appendix VIII, as conditioned by paragraphs (b)(2)(xv)(D) through (G) of this section.

(*4*) Table VIII–S7–1, ''Flaw Locations and Orientations,'' Supplement 7 to Appendix VIII, is conditioned as follows:

TABLE VIII—S7–1—MODIFIED

[Flaw locations and orientations]

	Parallel to weld	Perpendicular to weld
Inner 15 percent	X	X
Outside Diameter Surface	X	
Subsurface	X	

(L) *Specimen set and qualification: Twelfth provision.* As a condition to the requirements of Supplement 8, Subparagraph 1.1(c), to Appendix VIII, notches may be located within one diameter of each end of the bolt or stud.

(M) *Specimen set and qualification: Thirteenth provision.* When implementing Supplement 12 to Appendix VIII, only the provisions related to the coordinated implementation of Supplement 3 to Supplement 2 performance demonstrations are to be applied.

(xvi) *Section XI condition: Appendix VIII single side ferritic vessel and piping and stainless steel piping examinations.* When applying editions and addenda prior to the 2007 Edition of Section XI, the following conditions apply.

(A) *Ferritic and stainless steel piping examinations: First provision.* Examinations performed from one side of a ferritic vessel weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to two sided examinations, the demonstration must be performed to the requirements of Appendix VIII, as conditioned by this paragraph and paragraphs (b)(2)(xv)(B) through (G) of this section, on specimens containing flaws with non-optimum sound energy reflecting characteristics or flaws similar to those in the vessel being examined.

(B) *Ferritic and stainless steel piping examinations: Second provision.* Examinations performed from one side of a ferritic or stainless steel pipe weld must be conducted with equipment, procedures, and personnel that have demonstrated proficiency with single side examinations. To demonstrate equivalency to two sided examinations, the demonstration must be performed to the requirements of Appendix VIII, as conditioned by this paragraph and paragraph (b)(2)(xv)(A) of this section.

(xvii) *Section XI condition: Reconciliation of quality requirements.* When purchasing replacement items, in addition to the reconciliation provisions of IWA–4200, 1995 Addenda through 1998 Edition, the replacement items must be purchased, to the extent necessary, in accordance with the licensee's quality assurance program description required by 10 CFR 50.34(b)(6)(ii).

(xviii) *Section XI condition: NDE personnel certification.* (A) *NDE personnel certification: First provision.* Level I and II nondestructive examination personnel must be recertified on a 3-year interval in lieu of the 5-year interval specified in the 1997 Addenda and 1998 Edition of IWA–2314, and IWA–2314(a) and IWA–2314(b) of the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.

(B) *NDE personnel certification: Second provision.* When applying editions and addenda prior to the 2007 Edition of Section XI, paragraph IWA–2316 may only be used to qualify personnel that observe leakage during system leakage and hydrostatic tests conducted in accordance with IWA 5211(a) and (b).

(C) *NDE personnel certification: Third provision.* When applying editions and addenda prior to the 2005 Addenda of Section XI, licensee's qualifying visual examination personnel for VT–3 visual examination under paragraph IWA–2317 of Section XI must demonstrate the proficiency of the training by administering an initial qualification examination and administering subsequent examinations on a 3-year interval.

(xix) *Section XI condition: Substitution of alternative methods.* The provisions for substituting alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA–2240 must be applied when using the 1998 Edition through the 2004 Edition of Section XI of the ASME BPV Code. The provisions in IWA–4520(c), 1997 Addenda through the 2004 Edition, allowing the substitution of alternative methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code, are not approved for use. The provisions in IWA–4520(b)(2) and IWA–4521 of the 2008 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, allowing the substitution of ultrasonic examination for radiographic examination specified in the Construction Code, are not approved for use.

(xx) *Section XI condition: System leakage tests*—(A) *System leakage tests: First provision.* When performing system leakage tests in accordance with IWA–5213(a), 1997 through 2002 Addenda, the licensee must maintain a 10-minute hold time after test pressure has been reached for Class 2 and Class 3 components that are not in use during normal operating conditions. No hold time is required for the remaining Class 2 and Class 3 components provided that the system has been in operation for at least 4 hours for insulated components or 10 minutes for uninsulated components.

(B) *System leakage tests: Second provision.* The NDE provision in IWA–4540(a)(2) of the 2002 Addenda of Section XI must be applied when performing system leakage tests after repair and replacement activities performed by welding or brazing on a pressure retaining boundary using the 2003 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.

(xxi) *Section XI condition: Table IWB–2500–1 examination requirements.* (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 detect a 1-mil width wire or crack, 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.

(B) [Reserved]

(xxii) *Section XI condition: Surface examination.* The use of the provision in IWA–2220, ''Surface Examination,'' of Section XI, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, that allows use of an ultrasonic examination method is prohibited.

(xxiii) *Section XI condition: Evaluation of thermally cut surfaces.* The use of the provisions for eliminating mechanical processing of thermally cut surfaces in IWA–4461.4.2 of Section XI, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, is prohibited.

(xxiv) *Section XI condition: Incorporation of the performance demonstration initiative and addition of ultrasonic examination criteria.* The use of Appendix VIII and the supplements to Appendix VIII and Article I–3000 of Section XI of the ASME BPV Code, 2002 Addenda through the 2006 Addenda, is prohibited.

(xxv) *Section XI condition: Mitigation of defects by modification.* The use of the provisions in IWA–4340, ''Mitigation of Defects by Modification,'' Section XI, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section are prohibited.

(xxvi) *Section XI condition: Pressure testing Class 1, 2 and 3 mechanical joints.* The repair and replacement activity provisions in IWA–4540(c) of the 1998 Edition of Section XI for pressure testing Class 1, 2, and 3 mechanical joints must be applied when using the 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.

(xxvii) *Section XI condition: Removal of insulation.* When performing visual examination in accordance with IWA–5242 of Section XI of the ASME BPV Code, 2003 Addenda through the 2006 Addenda, or IWA–5241 of the 2007 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, insulation must be removed from 17–4 PH or 410 stainless steel studs or bolts aged at a temperature below 1100 °F or having a Rockwell Method C hardness value above 30, and from A–286 stainless steel studs or bolts preloaded to 100,000 pounds per square inch or higher.

(xxviii) *Section XI condition: Analysis of flaws.* Licensees using ASME BPV Code, Section XI, Appendix A, must use the following conditions when implementing Equation (2) in A–4300(b)(1):

For $R < 0$, ΔK_I depends on the crack depth (a), and the flow stress (σ_f). The flow stress is defined by $\sigma_f = 1/2(\sigma_{ys} + \sigma_{ult})$, where σ_{ys} is the yield strength and σ_{ult} is the ultimate tensile strength in units ksi (MPa) and (a) is in units in. (mm). For $-2 \le R \le 0$ and $K_{max} - K_{min} \le 0.8 \times 1.12\ \sigma_f\sqrt{(\pi a)}$, $S = 1$ and $\Delta K_I = K_{max}$. For $R < -2$ and $K_{max} - K_{min} \le 0.8 \times 1.12\ \sigma_f\sqrt{(\pi a)}$, $S = 1$ and $\Delta K_I = (1 - R)\ K_{max}/3$. For $R < 0$ and $K_{max} - K_{min} > 0.8 \times 1.12\ \sigma_f\sqrt{(\pi a)}$, $S = 1$ and $\Delta K_I = K_{max} - K_{min}$.

(xxix) *Section XI condition: Nonmandatory Appendix R.* Nonmandatory Appendix R, ''Risk-Informed Inspection Requirements for Piping,'' of Section XI, 2005 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, may not be implemented without prior NRC authorization of the proposed alternative in accordance with paragraph (z) of this section.

(3) *Conditions on ASME OM Code.* As used in this section, references to the OM Code refer to the ASME Code for Operation and Maintenance of Nuclear Power Plants, Subsections ISTA, ISTB, ISTC, ISTD, Mandatory Appendices I and II, and Nonmandatory Appendices A through H and J, including the 1995 Edition through the 2006 Addenda, subject to the following conditions:

(i) *OM condition: Quality assurance.* When applying editions and addenda of the OM Code, the requirements of NQA–1, ''Quality Assurance Requirements for Nuclear Facilities,'' 1979 Addenda, are acceptable as permitted by ISTA 1.4 of the 1995 Edition through 1997 Addenda or ISTA–1500 of the 1998 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(iv) of this section, provided the licensee uses its 10 CFR part 50, Appendix B, 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 MOV testing 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 motor-operated valves continue to be capable of performing their design basis safety functions.

(iii) [Reserved]

(iv) *OM condition: Check valves (Appendix II).* Licensees applying Appendix II, ''Check Valve Condition Monitoring Program,'' of the OM Code, 1995 Edition with the 1996 and 1997 Addenda, must satisfy the requirements of (b)(3)(iv)(A) through (C) of this section. Licensees applying Appendix II, 1998 Edition through the 2002 Addenda, must satisfy the requirements of (b)(3)(iv)(A), (B), and (D) of this section.

(A) *Check valves: First provision.* Valve opening and closing functions must be demonstrated when flow testing or examination methods (nonintrusive, or disassembly and inspection) are used;

(B) *Check valves: Second provision.* The initial interval for tests and associated examinations may not exceed two fuel cycles or 3 years, whichever is longer; any extension of this interval may not exceed one fuel cycle per extension with the maximum interval not to exceed 10 years. Trending and evaluation of existing data must be used to reduce or extend the time interval between tests.

(C) *Check valves: Third provision.* If the Appendix II condition monitoring program is discontinued, then the requirements of ISTC 4.5.1 through 4.5.4 must be implemented.

(D) *Check valves: Fourth provision.* The applicable provisions of subsection ISTC must be implemented if the Appendix II condition monitoring program is discontinued.

(v) *OM condition: Snubbers ISTD.* Article IWF–5000, ''Inservice Inspection Requirements for Snubbers,'' of the ASME BPV Code, Section XI, must be used when performing inservice inspection examinations and tests of snubbers at nuclear power plants, except as conditioned in paragraphs (b)(3)(v)(A) and (B) of this section.

(A) *Snubbers: First provision.* Licensees may use Subsection ISTD, ''Preservice and Inservice Examination and Testing of Dynamic Restraints (Snubbers) in Light-Water Reactor Power Plants,'' ASME OM Code, 1995 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(iv) of this section, in place of the requirements for snubbers in the editions and addenda up to the 2005 Addenda of the ASME BPV Code, Section XI, IWF–5200(a) and (b) and IWF–5300(a) and (b), by making appropriate changes to their technical specifications or licensee-controlled documents. Preservice and inservice examinations must be performed using the VT–3 visual examination method described in IWA–2213.

(B) *Snubbers: Second provision.* Licensees must comply with the provisions for examining and testing snubbers in Subsection ISTD of the ASME OM Code and make appropriate changes to their technical specifications or licensee-controlled documents when using the 2006 Addenda and later editions and addenda of Section XI of the ASME BPV Code.

(vi) *OM condition: Exercise interval for manual valves.* Manual valves must be exercised on a 2-year interval rather than the 5-year interval specified in paragraph ISTC–3540 of the 1999 through the 2005 Addenda of the ASME OM Code, provided that adverse conditions do not require more frequent testing.

(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, Revision 36, without prior NRC approval, subject to the following conditions:

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

(ii) *Design, Fabrication, and Materials Code Case condition: Applying different revisions of Code Cases.* If an applicant or 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 applicant or licensee may continue to apply 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, until it updates its Code of Record for the component being constructed.

(iii) *Design, Fabrication, and Materials Code Case condition: Applying annulled Code Cases.* Application of an annulled Code Case is prohibited unless an applicant or licensee applied the listed Code Case prior to it being listed as annulled in Regulatory Guide 1.84. If an applicant or licensee has applied a listed Code Case that is later listed as annulled in Regulatory Guide 1.84, the applicant or licensee may continue to apply the Code Case until it updates its Code of Record for the component being constructed.

(5) *Conditions on inservice inspection Code Cases.* Licensees may apply the ASME BPV Code Cases listed in Regulatory Guide 1.147, Revision 17, 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 Regulatory Guide 1.147, Revision 17.

(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 Regulatory Guide 1.147. If a licensee has applied a listed Code Case that is later listed as annulled in 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 Regulatory Guide 1.192, Revision 1, 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 Regulatory Guide 1.192, Revision 1.

(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 Regulatory Guide 1.192. If a licensee has applied a listed Code Case that is later listed as annulled in Regulatory Guide 1.192, the licensee may continue to apply the Code Case to the end of the current 120-month interval.

(c) *Reactor coolant pressure boundary.* 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 manufacturing license, standard design approval, and design certification application under part 52 of this chapter and each combined license for a utilization facility is subject to the following conditions:

(1) *Standards requirement for reactor coolant pressure boundary components.* Components that are part of the reactor coolant pressure boundary must meet the requirements for Class 1 components in Section III[1,4] of the ASME BPV Code, except as provided in paragraphs (c)(2) through (4) of this section.

(2) *Exceptions to reactor coolant pressure boundary standards requirement.* Components that are connected to the reactor coolant system and are part of the reactor coolant pressure boundary as defined in § 50.2 need not meet the requirements of paragraph (c)(1) of this section, provided that:

(i) *Exceptions: Shutdown and cooling capability.* In the event of postulated failure of the component during normal reactor operation, the reactor can be shut down and cooled down in an orderly manner, assuming makeup is provided by the reactor coolant makeup system; or

(ii) *Exceptions: Isolation capability.* The component is or can be isolated from the reactor coolant system by two valves in series (both closed, both open, or one closed and the other open). Each open valve must be capable of automatic actuation and, assuming the other valve is open, its closure time must be such that, in the event of postulated failure of the component during normal reactor operation, each valve remains operable and the reactor can be shut down and cooled down in an orderly manner, assuming makeup is provided by the reactor coolant makeup system only.

(3) *Applicable Code and Code Cases and conditions on their use.* The Code edition, addenda, and optional ASME Code Cases to be applied to components of the reactor coolant pressure boundary must be determined by the provisions of paragraph NCA–1140, Subsection NCA of Section III of the ASME BPV Code, subject to the following conditions:

(i) *Reactor coolant pressure boundary condition: Code edition and addenda.* The edition and addenda applied to a component must be those that are incorporated by reference in paragraph (a)(1)(i) of this section;

(ii) *Reactor coolant pressure boundary condition: Earliest edition and addenda for pressure vessel.* The ASME Code provisions applied to the pressure vessel may be dated no earlier than the summer 1972 Addenda of the 1971 Edition;

(iii) *Reactor coolant pressure boundary condition: Earliest edition and addenda for piping, pumps, and valves.* The ASME Code provisions applied to piping, pumps, and valves may be dated no earlier than the Winter 1972 Addenda of the 1971 Edition; and

(iv) *Reactor coolant pressure boundary condition: Use of Code Cases.* The optional Code Cases applied to a component must be those listed in NRC Regulatory Guide 1.84 that is incorporated by reference in paragraph (a)(3)(i) of this section.

(4) *Standards requirement for components in older plants.* For a nuclear power plant whose construction permit was issued prior to May 14, 1984, the applicable Code edition and addenda for a component of the reactor coolant pressure boundary continue to be that Code edition and addenda that were required by Commission regulations for such a component at the time of issuance of the construction permit.

(d) *Quality Group B components.* 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 manufacturing license, standard design approval, and design certification application under part 52 of this chapter, and each combined license for a utilization facility is subject to the following conditions:

(1) *Standards requirement for Quality Group B components.* For a nuclear power plant whose application for a construction permit under this part, or a combined license or manufacturing license under part 52 of this chapter, docketed after May 14, 1984, or for an application for a standard design approval or a standard design certification docketed after May 14, 1984, components classified Quality Group B [7] must meet the requirements for Class 2 Components in Section III of the ASME BPV Code.

(2) *Quality Group B: Applicable Code and Code Cases and conditions on their use.* The Code edition, addenda, and optional ASME Code Cases to be applied to the systems and components identified in paragraph (d)(1) of this section must be determined by the rules of paragraph NCA–1140, Subsection NCA of Section III of the ASME BPV Code, subject to the following conditions:

(i) *Quality Group B condition: Code edition and addenda.* The edition and addenda must be those that are incorporated by reference in paragraph (a)(1)(i) of this section;

(ii) *Quality Group B condition: Earliest edition and addenda for components.* The ASME Code provisions applied to the systems and components may be dated no earlier than the 1980 Edition; and

(iii) *Quality Group B condition: Use of Code Cases.* The optional Code Cases must be those listed in NRC Regulatory Guide 1.84 that is incorporated by reference in paragraph (a)(3)(i) of this section.

(e) *Quality Group C components.* 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 manufacturing license, standard design approval, and design certification application under part 52 of this chapter and each combined license for a utilization facility is subject to the following conditions.

(1) *Standards requirement for Quality Group C components.* For a nuclear power plant whose application for a construction permit under this part, or a combined license or manufacturing license under part 52 of this chapter, docketed after May 14, 1984, or for an application for a standard design approval or a standard design certification docketed after May 14, 1984, components classified Quality Group C [9] must meet the requirements for Class 3 components in Section III of the ASME BPV Code.

(2) *Quality Group C applicable Code and Code Cases and conditions on their use.* The Code edition, addenda, and optional ASME Code Cases to be applied to the systems and components identified in paragraph (e)(1) of this section must be determined by the rules of paragraph NCA–1140, subsection NCA of Section III of the ASME BPV Code, subject to the following conditions:

(i) *Quality Group C condition: Code edition and addenda.* The edition and addenda must be those incorporated by reference in paragraph (a)(1)(i) of this section;

(ii) *Quality Group C condition: Earliest edition and addenda for components.* The ASME Code provisions applied to the systems and components may be dated no earlier than the 1980 Edition; and

(iii) *Quality Group C condition: Use of Code Cases.* The optional Code Cases must be those listed in NRC Regulatory Guide 1.84 that is incorporated by reference in paragraph (a)(3)(i) of this section.

(f) *Inservice testing requirements.* Systems and components of boiling and pressurized water-cooled nuclear power reactors must meet the requirements of the ASME BPV Code and ASME Code for Operation and Maintenance of Nuclear Power Plants 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).

(1) *Inservice testing requirements for older plants (pre-1971 CPs).* For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued prior to January 1, 1971, pumps and valves must meet the test requirements of paragraphs (f)(4) and (5) of this section to the extent

practical. Pumps and valves that are part of the reactor coolant pressure boundary must meet the requirements applicable to components that are classified as ASME Code Class 1. Other pumps and valves that perform a function to shut down the reactor or maintain the reactor in a safe shutdown condition, mitigate the consequences of an accident, or provide overpressure protection for safety-related systems (in meeting the requirements of the 1986 Edition, or later, of the BPV or OM Code) must meet the test requirements applicable to components that are classified as ASME Code Class 2 or Class 3.

(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, Revision 17, or Regulatory Guide 1.192, Revision 1, that are 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, Revision 17; or Regulatory Guide 1.192, Revision 1, that are incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively), subject to the applicable conditions listed therein.

(3) *Design and accessibility requirements for performing inservice testing in plants with CPs issued after 1974.* For a boiling or pressurized water-cooled nuclear power facility whose construction permit under this part or design approval, design certification, combined license, or manufacturing license under part 52 of this chapter was issued on or after July 1, 1974:

(i)–(ii) [Reserved]

(iii) *IST design and accessibility requirements: Class 1 pumps and valves.* (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 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, Revision 17, or Regulatory Guide 1.192, Revision 1, that are incorporated by reference in paragraphs (a)(3)(ii) and (iii) of this section, respectively) 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 the pumps and valves for assessing operational readiness set forth in editions and addenda of the ASME OM Code (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.192, Revision 1, that are 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) *IST design and accessibility requirements: Class 2 and 3 pumps and valves.* (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 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, Revision 17, that are 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 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, Revision 1, that are 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.

(v) *IST design and accessibility requirements: Meeting later IST requirements.* All pumps and valves may meet the test 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 in paragraph (b) of this section.

(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 classified as ASME Code Class 1, Class 2, and Class 3 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, Revision 1, that is 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, Revision 17, or Regulatory Guide 1.192, Revision 1, that are 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.

(iii) [Reserved]

(iv) *Applicable IST Code: Use of later Code editions and addenda.* Inservice tests of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (a)(1)(iv) of this section, subject to the conditions listed in paragraph (b) of this section, and subject to NRC approval. Portions of editions or addenda may be used, provided that all related requirements of the respective editions or addenda are met.

(5) *Requirements for updating IST programs*—(i) *IST program update: Applicable IST Code editions and addenda.* The inservice test program for a boiling or pressurized water-cooled nuclear power facility must be revised by the licensee, as necessary, to meet the requirements of paragraph (f)(4) of this section.

(ii) *IST program update: Conflicting IST Code requirements with technical specifications.* If a revised inservice test program for a facility conflicts with the technical specifications for the facility, the licensee must apply to the Commission for amendment of the technical specifications to conform the technical specifications to the revised program. The licensee must submit this application, as specified in § 50.4, at least 6 months before the start of the period during which the provisions become applicable, as determined by paragraph (f)(4) of this section.

(iii) *IST program update: Notification of impractical IST Code requirements.* If the licensee has determined that conformance with certain Code requirements is impractical for its facility, the licensee must notify the Commission and submit, as specified in § 50.4, information to support the determination.

(iv) *IST program update: Schedule for completing impracticality determinations.* Where a pump or valve test requirement by the Code or addenda is determined to be impractical by the licensee and is not included in the revised inservice test program (as permitted by paragraph (f)(4) of this section), the basis for this determination must be submitted for NRC review and approval not later than 12 months after the expiration of the initial 120-month interval of operation from the start of facility commercial operation and each subsequent 120-month interval of operation during which the test is determined to be impractical.

(6) *Actions by the Commission for evaluating impractical and augmented IST Code requirements*—(i) *Impractical IST requirements: Granting of relief.* The Commission will evaluate determinations under paragraph (f)(5) of this section that code requirements are impractical. The Commission may grant relief and may impose such alternative requirements as it determines are authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest, giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

(ii) *Augmented IST requirements.* The Commission may require the licensee to follow an augmented inservice test program for pumps and valves for which the Commission deems that added assurance of operational readiness is necessary.

(g) *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).

(1) *Inservice inspection requirements for older plants (pre-1971 CPs).* For a boiling or pressurized water-cooled nuclear power facility whose construction permit was issued before January 1, 1971, components (including supports) must meet the requirements of paragraphs (g)(4) and (g)(5) of this section to the extent practical. Components that are part of the reactor coolant pressure boundary and their supports must meet the requirements applicable to components that are classified as ASME Code Class 1. Other safety-related pressure vessels, piping, pumps and valves, and their supports must meet the requirements applicable to components that are classified as ASME Code Class 2 or Class 3.

(2) *Design and accessibility requirements for performing inservice inspection 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, components (including supports) that are classified as ASME Code Class 1 and Class 2 must be designed and be provided with access to enable the performance of inservice examination of such components (including supports) and 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, Revision 17, that are incorporated by reference in paragraph (a)(3)(ii) of this section) in effect 6 months before the date of issuance of the construction permit. The components (including supports) may meet the requirements set forth in subsequent editions and addenda of this Code that are incorporated by reference in paragraph (a) of this section (or the optional ASME Code Cases listed in NRC Regulatory Guide 1.147, Revision 17, that are incorporated by reference in paragraph (a)(3)(ii) of this section), subject to the applicable limitations and modifications.

(3) *Design and accessibility requirements for performing inservice inspection in 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, the following are required:

(i) *ISI design and accessibility requirements: Class 1 components and supports.* Components (including supports) that are classified as ASME Code Class 1 must be designed and be provided with access to enable the performance of inservice examination of these components and 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, Revision 17, that are incorporated by reference in paragraph (a)(3)(ii) of this section) applied to the construction of the particular component.

(ii) *ISI design and accessibility requirements: Class 2 and 3 components and supports.* Components that are classified as ASME Code 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 access to enable the performance of inservice examination of these components and must meet the preservice examination requirements 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, Revision 17, that are incorporated by reference in paragraph (a)(3)(ii) of this section) applied to the construction of the particular component.

(iii)–(iv) [Reserved]

(v) *ISI design and accessibility requirements: Meeting later ISI 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) *Inservice inspection standards requirement for operating plants.* Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions and addenda of the ASME BPV Code (or ASME OM Code for snubber examination and testing) that become effective subsequent to editions specified in paragraphs (g)(2) and (3) of this section and that are incorporated by reference in paragraph (a)(1)(ii) or (iv) for snubber examination and testing of this section, to the extent practical within the limitations of design, geometry, and materials of construction of the components. Components that are classified as Class MC pressure retaining components and their integral attachments, and components that are classified as Class CC pressure retaining components and their integral attachments, must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of the ASME BPV Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section, subject to the condition listed in paragraph (b)(2)(vi) of this section and the conditions listed in paragraphs (b)(2)(viii) and (ix) of this section, to the extent practical within the limitation of design, geometry, and materials of construction of the components.

(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, Revision 17, when using Section XI, or Regulatory Guide 1.192, Revision 1, when using the OM Code, that are 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, Revision 17, when using Section XI, or Regulatory Guide 1.192, Revision 1, when using the OM Code, that are 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.

(iii) *Applicable ISI Code: Optional surface examination requirement.* When applying editions and addenda prior to the 2003 Addenda of Section XI of the ASME BPV Code, licensees may, but are not required to, perform the surface examinations of high-pressure safety injection systems specified in Table IWB–2500–1, Examination Category B–J, Item Numbers B9.20, B9.21, and B9.22.

(iv) *Applicable ISI Code: Use of subsequent Code editions and addenda.* Inservice examination of components and system pressure tests may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in paragraph (a) of this section, subject to the conditions listed in paragraph (b) of this section, and subject to Commission approval. Portions of editions or addenda may be used, provided that all related requirements of the respective editions or addenda are met.

(v) *Applicable ISI Code: Metal and concrete containments.* For a boiling or pressurized water-cooled nuclear power facility whose construction permit under this part or combined license under part 52 of this chapter was issued after January 1, 1956, the following are required:

(A) *Metal and concrete containments: First provision.* Metal containment pressure retaining components and their integral attachments must meet the inservice inspection, repair, and replacement requirements applicable to components that are classified as ASME Code Class MC;

(B) *Metal and concrete containments: Second provision.* Metallic shell and penetration liners that are pressure retaining components and their integral attachments in concrete containments must meet the inservice inspection, repair, and replacement requirements applicable to components that are classified as ASME Code Class MC; and

(C) *Metal and concrete containments: Third provision.* Concrete containment pressure retaining components and their integral attachments, and the post-tensioning systems of concrete containments, must meet the inservice inspections, repair, and replacement requirements applicable to components that are classified as ASME Code Class CC.

(5) *Requirements for updating ISI programs*—(i) *ISI program update: Applicable ISI Code editions and addenda.* The inservice inspection program for a boiling or pressurized water-cooled nuclear power facility must be revised by the licensee, as necessary, to meet the requirements of paragraph (g)(4) of this section.

(ii) *ISI program update: Conflicting ISI Code requirements with technical specifications.* If a revised inservice inspection program for a facility conflicts with the technical specifications for the facility, the licensee must apply to the Commission

for amendment of the technical specifications to conform the technical specifications to the revised program. The licensee must submit this application, as specified in § 50.4, at least six months before the start of the period during which the provisions become applicable, as determined by paragraph (g)(4) of this section.

(iii) *ISI program update: Notification of impractical ISI Code requirements.* If the licensee has determined that conformance with a Code requirement is impractical for its facility the licensee must notify the NRC and submit, as specified in § 50.4, information to support the determinations. Determinations of impracticality in accordance with this section must be based on the demonstrated limitations experienced when attempting to comply with the Code requirements during the inservice inspection interval for which the request is being submitted. Requests for relief made in accordance with this section must be submitted to the NRC no later than 12 months after the expiration of the initial or subsequent 120-month inspection interval for which relief is sought.

(iv) *ISI program update: Schedule for completing impracticality determinations.* Where the licensee determines that an examination required by Code edition or addenda is impractical, the basis for this determination must be submitted for NRC review and approval not later than 12 months after the expiration of the initial or subsequent 120-month inspection interval for which relief is sought.

(6) *Actions by the Commission for evaluating impractical and augmented ISI Code requirements*—(i) *Impractical ISI requirements: Granting of relief.* The Commission will evaluate determinations under paragraph (g)(5) of this section that code requirements are impractical. The Commission may grant such relief and may impose such alternative requirements as it determines are authorized by law, will not endanger life or property or the common defense and security, and are otherwise in the public interest giving due consideration to the burden upon the licensee that could result if the requirements were imposed on the facility.

(ii) *Augmented ISI program.* The Commission may require the licensee to follow an augmented inservice inspection program for systems and components for which the Commission deems that added assurance of structural reliability is necessary.

(A) [Reserved]

(B) *Augmented ISI requirements: Submitting containment ISI programs.* Licensees do not have to submit to the NRC for approval of their containment inservice inspection programs that were developed to satisfy the requirements of Subsection IWE and Subsection IWL with specified conditions. The program elements and the required documentation must be maintained on site for audit.

(C) *Augmented ISI requirements: Implementation of Appendix VIII to Section XI.* (*1*) Appendix VIII and the supplements to Appendix VIII to Section XI, Division 1, 1995 Edition with the 1996 Addenda of the ASME BPV Code must be implemented in accordance with the following schedule: Appendix VIII and Supplements 1, 2, 3, and 8—May 22, 2000; Supplements 4 and 6—November 22, 2000; Supplement 11—November 22, 2001; and Supplements 5, 7, and 10—November 22, 2002.

(*2*) Licensees implementing the 1989 Edition and earlier editions and addenda of IWA–2232 of Section XI, Division 1, of the ASME BPV Code must implement the 1995 Edition with the 1996 Addenda of Appendix VIII and the supplements to Appendix VIII of Section XI, Division 1, of the ASME BPV Code.

(D) *Augmented ISI requirements: Reactor vessel head inspections*—(*1*) All licensees of pressurized water reactors must augment their inservice inspection program with ASME Code Case N–729–1, subject to the conditions specified in paragraphs (g)(6)(ii)(D)(*2*) through (*6*) of this section. Licensees of existing operating reactors as of September 10, 2008, must implement their augmented inservice inspection program by December 31, 2008. Once a licensee implements this requirement, the First Revised NRC Order EA–03–009 no longer applies to that licensee and shall be deemed to be withdrawn.

(*2*) Note 9 of ASME Code Case N–729–1 must not be implemented.

(*3*) Instead of the specified ''examination method'' requirements for volumetric and surface examinations in Note 6 of Table 1 of Code Case N–729–1, the licensee must perform volumetric and/or surface examination of essentially 100 percent of the required volume or equivalent surfaces of the nozzle tube, as identified by Figure 2 of ASME Code Case N–729–1. A demonstrated volumetric or surface leak path assessment through all J-groove welds must be performed. If a surface examination is being substituted for a volumetric examination on a portion of a penetration nozzle that is below the toe of the J-groove weld [Point E on Figure 2 of ASME Code Case N–729–1], the surface examination must be of the inside and outside wetted surface of the penetration nozzle not examined volumetrically.

(*4*) By September 1, 2009, ultrasonic examinations must be performed using personnel, procedures, and equipment that have been qualified by blind demonstration on representative mockups using a methodology that meets the conditions specified in paragraphs (g)(6)(ii)(D)(*4*)(*i*) through (*iv*), instead of the qualification requirements of Paragraph –2500 of ASME Code Case N–729–1. References herein to Section XI, Appendix VIII, must be to the 2004 Edition with no addenda of the ASME BPV Code.

(*i*) The specimen set must have an applicable thickness qualification range of +25 percent to −40 percent for nominal depth through-wall thickness. The specimen set must include geometric and material conditions that normally require discrimination from primary water stress corrosion cracking (PWSCC) flaws.

(*ii*) The specimen set must have a minimum of ten (10) flaws that provide an acoustic response similar to PWSCC indications. All flaws must be greater than 10 percent of the nominal pipe wall thickness. A minimum of 20 percent of the total flaws must initiate from the inside surface and 20 percent from the outside surface. At least 20 percent of the flaws must be in the depth ranges of 10–30 percent through-wall thickness and at least 20 percent within a depth range of 31–50 percent through-wall thickness. At least 20 percent and no more than 60 percent of the flaws must be oriented axially.

(*iii*) Procedures must identify the equipment and essential variables and settings used for the qualification, in accordance with Subarticle VIII–2100 of Section XI, Appendix VIII. The procedure must be requalified when an essential variable is changed outside the demonstration range as defined by Subarticle VIII–3130 of Section XI, Appendix VIII, and as allowed by Articles VIII–4100, VIII–4200, and VIII–4300 of Section XI, Appendix VIII. Procedure qualification must include the equivalent of at least three personnel performance demonstration test sets. Procedure qualification requires at least one successful personnel performance demonstration.

(*iv*) Personnel performance demonstration test acceptance criteria must meet the personnel performance demonstration detection test acceptance criteria of Table VIII—S10–1 of Section XI, Appendix VIII, Supplement 10. Examination procedures, equipment,

and personnel are qualified for depth sizing and length sizing when the RMS error, as defined by Subarticle VIII–3120 of Section XI, Appendix VIII, of the flaw depth measurements, as compared to the true flaw depths, do not exceed 1/8 inch (3 mm) and the root mean square (RMS) error of the flaw length measurements, as compared to the true flaw lengths, do not exceed 3/8 inch (10 mm), respectively.

(*5*) If flaws attributed to PWSCC have been identified, whether acceptable or not for continued service under Paragraphs –3130 or –3140 of ASME Code Case N–729–1, the re-inspection interval must be each refueling outage instead of the re-inspection intervals required by Table 1, Note (8), of ASME Code Case N–729–1.

(*6*) Appendix I of ASME Code Case N–729–1 must not be implemented without prior NRC approval.

(E) *Augmented ISI requirements: Reactor coolant pressure boundary visual inspections* [10]—(*1*) All licensees of pressurized water reactors must augment their inservice inspection program by implementing ASME Code Case N–722–1, subject to the conditions specified in paragraphs (g)(6)(ii)(E)(*2*) through (*4*) of this section. The inspection requirements of ASME Code Case N–722–1 do not apply to components with pressure retaining welds fabricated with Alloy 600/82/182 materials that have been mitigated by weld overlay or stress improvement.

(*2*) If a visual examination determines that leakage is occurring from a specific item listed in Table 1 of ASME Code Case N–722–1 that is not exempted by the ASME Code, Section XI, IWB–1220(b)(1), additional actions must be performed to characterize the location, orientation, and length of a crack or cracks in Alloy 600 nozzle wrought material and location, orientation, and length of a crack or cracks in Alloy 82/182 butt welds. Alternatively, licensees may replace the Alloy 600/82/182 materials in all the components under the item number of the leaking component.

(*3*) If the actions in paragraph (g)(6)(ii)(E)(*2*) of this section determine that a flaw is circumferentially oriented and potentially a result of primary water stress corrosion cracking, licensees must perform non-visual NDE inspections of components that fall under that ASME Code Case N–722–1 item number. The number of components inspected must equal or exceed the number of components found to be leaking under that item number. If circumferential cracking is identified in the sample, non-visual NDE must be performed in the remaining components under that item number.

(*4*) If ultrasonic examinations of butt welds are used to meet the NDE requirements in paragraphs (g)(6)(ii)(E)(*2*) or (*3*) of this section, they must be performed using the appropriate supplement of Section XI, Appendix VIII, of the ASME BPV Code.

(F) *Augmented ISI requirements: Examination requirements for Class 1 piping and nozzle dissimilar-metal butt welds*—(*1*) Licensees of existing, operating pressurized-water reactors as of July 21, 2011, must implement the requirements of ASME Code Case N–770–1, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(*2*) through (*10*) of this section, by the first refueling outage after August 22, 2011.

(*2*) Full structural weld overlays authorized by the NRC staff may be categorized as Inspection Items C or F, 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 ISI frequencies, all other butt welds that rely on Alloy 82/182 for structural integrity must 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 until an alternative Code Case Inspection Item is used based on conformance with an ASME mitigation Code Case endorsed in Regulatory Guide 1.147 with conditions, if applicable, and incorporated by reference in this section.

(*3*) Baseline examinations for welds in Table 1, Inspection Items A–1, A–2, and B, must be completed by the end of the next refueling outage after January 20, 2012. Previous examinations of these welds can be credited for baseline examinations if they were performed within the re-inspection period for the weld item in Table 1 using Section XI, Appendix VIII, requirements and met the Code required examination volume of essentially 100 percent. Other previous examinations that do not meet these requirements can be used to meet the baseline examination requirement, provided NRC approval of alternative inspection requirements in accordance with paragraphs (z)(1) or (2) of this section is granted prior to the end of the next refueling outage after January 20, 2012.

(*4*) The axial examination coverage requirements of Paragraph—2500(c) may not be considered to be satisfied unless essentially 100 percent coverage is achieved.

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

(*6*) 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*) 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*) Welds mitigated by optimized weld overlays in Inspection Items D and E are not permitted to be placed into a population to be examined on a sample basis and must be examined once each inspection interval.

(*9*) Replace the first two sentences of Extent and Frequency of Examination for Inspection Item D in Table 1 of Code Case N–770–1 with, ''Examine all welds no sooner than the third refueling outage and no later than 10 years following stress improvement application.'' Replace the first two sentences of Note (11)(b)(2) in Code Case N–770–1 with, ''The first examination following weld inlay, onlay, weld overlay, or stress improvement for Inspection Items D through K must be performed as specified.''

(*10*) General Note (b) to Figure 5(a) of Code Case N–770–1 pertaining to alternative examination volume for optimized weld overlays may not be applied unless NRC approval is authorized under paragraphs (z)(1) or (2) of this section.

(h) *Protection and safety systems.* Protection systems of nuclear power reactors of all types must meet the requirements specified in this paragraph. Each combined license for a utilization facility is subject to the following conditions.

(1) [Reserved]

(2) *Protection systems.* For nuclear power plants with construction permits issued after January 1, 1971, but before May 13, 1999, protection systems must meet the requirements stated in either IEEE Std. 279, ''Criteria for Protection Systems for Nuclear Power Generating Stations,'' or in IEEE Std. 603–1991, ''Criteria for Safety Systems for Nuclear Power Generating Stations,'' and the correction sheet dated January 30, 1995. For nuclear power plants with construction permits issued before January 1, 1971, protection systems must be consistent with their licensing basis or may meet the requirements of IEEE Std. 603–1991 and the correction sheet dated January 30, 1995.

(3) *Safety systems.* Applications filed on or after May 13, 1999, for construction permits and operating licenses under this part, and for design approvals, design certifications, and combined licenses under part 52 of this chapter, must meet the requirements for safety systems in IEEE Std. 603–1991 and the correction sheet dated January 30, 1995.

(i)–(y) [Reserved]

(z) *Alternatives to codes and standards requirements.* Alternatives to the requirements of paragraphs (b) through (h) of this section or portions thereof may be used when authorized by the Director, Office of Nuclear Reactor Regulation, or Director, Office of New Reactors, as appropriate. A proposed alternative must be submitted and authorized prior to implementation. The applicant or licensee must demonstrate that:

(1) *Acceptable level of quality and safety.* The proposed alternative would provide an acceptable level of quality and safety; or

(2) *Hardship without a compensating increase in quality and safety.* Compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety. Footnotes to § 50.55a:

[1] USAS and ASME Code addenda issued prior to the winter 1977 Addenda are considered to be ''in effect'' or ''effective'' 6 months after their date of issuance and after they are incorporated by reference in paragraph (a) of this section. Addenda to the ASME Code issued after the summer 1977 Addenda are considered to be ''in effect'' or ''effective'' after the date of publication of the addenda and after they are incorporated by reference in paragraph (a) of this section.

[2–3] [Reserved].

[4] For ASME Code editions and addenda issued prior to the winter 1977 Addenda, the Code edition and addenda applicable to the component is governed by the order or contract date for the component, not the contract date for the nuclear energy system. For the winter 1977 Addenda and subsequent editions and addenda the method for determining the applicable Code editions and addenda is contained in Paragraph NCA 1140 of Section III of the ASME Code.

[5–6] [Reserved].

[7] Guidance for quality group classifications of components that are to be included in the safety analysis reports pursuant to § 50.34(a) and § 50.34(b) may be found in Regulatory Guide 1.26, ''Quality Group Classifications and Standards for Water-, Steam-, and Radiological-Waste-Containing Components of Nuclear Power Plants,'' and in Section 3.2.2 of NUREG–0800, ''Standard Review Plan for Review of Safety Analysis Reports for Nuclear Power Plants.''

[8–9] [Reserved].

[10] For inspections to be conducted once per interval, the inspections must be performed in accordance with the schedule in Section XI, paragraph IWB–2400, except for plants with inservice inspection programs based on a Section XI edition or addenda prior to the 1994 Addenda. For plants with inservice inspection programs based on a Section XI edition or addenda prior to the 1994 Addenda, the inspection must be performed in accordance with the schedule in Section XI, paragraph IWB–2400, of the 1994 Addenda.

Dated at Rockville, Maryland, this 11th day of August 2014.

For the Nuclear Regulatory Commission.

Daniel H. Dorman,

Acting Director, Office of Nuclear Reactor Regulation.

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