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STANDARDS & CERTIFICATION

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OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

Secretary, U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Rulemaking.Comments@nrc.gov / (301) 415-1677

Attention: Rulemakings and Adjudications Staff

Subject: **Comments on Industry Codes and Standards, 10 CFR Part 50, RIN 3150-AI35**

Reference: Federal Register / Vol. 75, No. 85, pp. 24324-24361 / Tuesday, May 4, 2010 / Proposed Rules

Enclosure: ASME Comments on the Proposed Rule for 10 CFR 50.55a

Dear Secretary:

ASME is pleased to have the opportunity to provide comments and suggestions on your Nuclear Regulatory Commission (NRC), 10 CFR Part 50, RIN 3150-AI35, Industry Codes and Standards, Proposed Amended Requirements, published in Reference 1.

Specifically, ASME supports NRC's endorsement of its Nuclear Codes and Standards now cited in the Code of Federal Regulations in 10 CFR 50.55a. It is our understanding that within this proposed rulemaking, the NRC is amending this regulation to incorporate by reference the 2005 Addenda through the 2008 Addenda of Section III, Division 1 and Section XI, Division 1 of the ASME Boiler and Pressure Vessel (BPV) Code and the 2005 Addenda and the 2006 Addenda of the ASME Operation and Maintenance (OM) Code.

Within the proposed rulemaking it contains provisions for the use of two Section XI Code Cases N-722-1 and N-770. Although ASME supports the use of these two Code Cases in the proposed rule, it is recommended that the NRC consider the endorsement of Code Case N-770-1 to reduce the number of conditions related to Code Case N-770. Additionally, ASME is pleased to see that some of the modifications that are included in this amendment reflect the removal of some existing conditions in the regulation that ASME has previously addressed with the NRC staff. Removal of these conditions will enhance the use of ASME Nuclear Codes and Standards.

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The enclosure provides ASME comments on the modifications and conditions contained in the proposed rule for the purpose of enhancing the use of ASME Nuclear Codes and Standards within the nuclear industry and in support of maintaining the public health and safety without placing unnecessary burden on the nuclear industry. Thus, the enclosure is provided for the use of the NRC staff to support, reconsider, remove, or delete its modifications or conditions where comments are provided. It is hoped that upon review of the ASME comments in the enclosure that the NRC staff will be able to allow the necessary changes to be made or modify the conditions in the final rule to such a degree as to fully endorse the ASME Nuclear Codes and Standards contained in this proposed rulemaking.

If you have any questions in regards to the contents of this letter, please direct them to Mr. Kevin Ennis, ASME Director, Nuclear Codes and Standards by telephone at (212) 591-7075 or by e-mail *(ennisk@asme.org)*.

Very Truly Yours,

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cc: Members, ASME Board on Nuclear Codes and Standards
Members, ASME Standards Committee on Operation and Maintenance of Nuclear Power Plants
Members, ASME BPV Committee on Construction of Nuclear Facility Components (III)
Members, ASME BPV Committee on Nuclear Inservice Inspection (XI)

Proposed Amendment Provision	Comments
1. <u>Federal Register Notice, Section VI, Specific Request for Comments</u> The proposed rule requests comments on the following questions, from Section VI on page 24349 of the FRN: 1. What should the scope of the ASME B&PV Code edition and addenda rulemaking be (i.e., how many editions and addenda should be compiled into a single rulemaking)? 2. What should the frequency of ASME B&PV Code edition and addenda rulemaking be (i.e., how often should the NRC incorporate by reference Code editions and addenda into 10 CFR 50.55a)? 3. In what ways should the NRC communicate the scope, schedule for publishing the rulemakings in the Federal Register, and status of 10 CFR 50.55a rulemakings to external users? The NRC has indicated that the responses to these questions will be used to help determine agency positions on the scope, frequency, and methods to communicate 10 CFR 50.55a rulemakings.	ASME offers the following comments pertaining to future 10 CFR 50.55a rulemaking activities: 1. ASME has changed the publication schedule for Sections III and XI. On July 1, 2010, ASME published the 2010 Edition of these two Code Sections and the last addenda will be published in 2011. The 2011 Addenda will be published as a complete replacement for the 2010 Edition and will include technical changes. The 2013 Edition will be published in 2013 and then editions will be published on a 2-year schedule from that time forward. As such, ASME suggests that 10 CFR 50.55a rulemakings occur on a 2-year cycle with the next cycle to include the 2010 Edition up to and including the 2011 Addenda of Sections III and XI. This schedule will facilitate endorsement of only one later edition of Sections III and XI at one time in the future and they can be made available for industry use at the earliest opportunity. This schedule would allow the NRC to incorporate by reference each published edition of Sections III and XI with only one edition behind the ASME publication schedule. The next OM rulemaking should include the OM 2009 Edition with the OM 2010 Addenda. Then when the OM 2013 Edition is published no more addenda will be issued. The rulemaking that will endorse the 2013 Edition of Sections III and XI will also need to include the OM 2011 Addenda, the OM 2012 Addenda and the OM 2013 Edition. From this point forward no addenda will be issued to ASME OM editions or to other future editions of Sections III and XI. 2. As indicated in the draft rule, NRC rulemaking activities are currently on a 2-year cycle. In order for each rulemaking to incorporate by reference the latest published ASME Code editions, this cycle should be maintained as described above and the next NRC new rulemaking would have to begin immediately upon publication of this proposed rule as a final 10 CFR 50.55a rule. 3. More importantly, ASME believes that it would be more beneficial to the industry for NRC to publish the final 10 CFR 50.55a rules on a predictable, regular schedule, if possible similar to the one proposed

Legend:
- ■ NRC Proposed Amendment
- ○ ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

Proposed Amendment Provision	Comments
	above. Owners are required to update their inservice inspection and inservice testing programs to comply with the latest editions of ASME Codes and Standards incorporated by reference in 10 CFR 50.55a twelve months prior to the start date of future inspection and testing intervals. As such, ASME believes that a regular publication schedule would help Owners/Licensees to determine which ASME Codes and Standards would likely be required to be used for subsequent inspection/testing intervals well in advance of the start of these subsequent intervals. 4. If the NRC believes that a predictable schedule for publication of final 10 CFR 50.55a rules cannot be accomplished, the NRC may want to consider whether the provisions in 10 CFR 50.55a(f)(4)(ii) and (g)(4)(ii) should be amended to allow Owners/Licensees to update their programs to comply with the latest edition and addenda of the Code incorporated by reference as much as 24 months before the start of a subsequent 120-month interval.
2. <u>NRC proposes to redesignate paragraph numbering within 10 CFR 50.55a(b)(2)</u> **Page 75 FR 24326** Due to the extent of the proposed revisions to 10 CFR 50.55a(b)(2), the NRC is proposing to revise this portion of the regulations in its entirety, including the redesignation of paragraphs within the section.	◇ ASME Does Not Support This Amendment Renumbering all of the paragraphs, although it helps reduce the number of pages in the rulemaking, it does not consider the effort it will take for each end user to update their procedures to reflect the new numbering sequence. Many implementing programs and procedures will include references to the specific paragraph for implementation. Renumbering them will cause many documents to be revised. ASME recommends that this type of cleanup be considered under a total rewrite of 10 CFR 50.55a rather than doing it under this proposed rule. ASME suggests that those paragraphs where conditions are removed be designated as "reserved".

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

Proposed Amendment Provision	Comments
3. <u>Standards Approved for Incorporation by Reference</u> ■ Revise title of 10 CFR 50.55a(b) to "*Standards approved for incorporation by reference*". Revise to incorporate by reference the ASME B&PV Code, Section III, Division 1 (excluding Non-mandatory Appendices), and Section XI, Division 1, and ASME OM Code, which are referenced in paragraphs (b)(1), (b)(2), and (b)(3) of this section. In addition, ASME Code Cases N–722–1 and N-770 would be incorporated by reference. **Page 75 FR 24351** 10 CFR 50.55a(b) *Standards approved for incorporation by reference.* The following standards 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: Section III, Division 1 (excluding Nonmandatory Appendices) and Section XI, Division 1, of the ASME Boiler and Pressure Vessel Code, and the ASME Code for Operation and Maintenance of Nuclear Power Plants, which are referenced in paragraphs (b)(1), (b)(2), and (b)(3) of this section; NRC Regulatory Guide 1.84, Revision 34, "Design, Fabrication, and Materials Code Case Acceptability, ASME Section III" (October 2007), NRC Regulatory Guide 1.147, Revision 15, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1" (October 2007), and Regulatory Guide 1.192, "Operation and Maintenance Code Case Acceptability, ASME OM Code" (June 2003), which list ASME Code cases that the NRC has approved in accordance with the requirements in paragraphs (b)(4), (b)(5), and (b)(6) of this section; 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" (ASME Approval Date: January 26, 2009), which has been approved by the NRC with conditions in accordance with the requirements in paragraph (g)(6)(ii)(E) of this section; ASME	● ASME Supports This Amendment ASME offers the following comment pertaining to Code Case N-770: ASME recommends that the final rule incorporate by reference Code Case N-770-1, in lieu of Code Case N-770. By doing so, many of the conditions proposed in this proposed rule on the use of this case could be eliminated because ASME believes that most of the conditions have been addressed in the revised code case.

Legend: ■ NRC Proposed Amendment
● ASME Supports This Amendment
♦ ASME Does Not Support This Amendment

Proposed Amendment Provision	Comments
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" (ASME Approval Date: March 28, 2006), which has been approved by the NRC with conditions in accordance with the requirements in paragraph (g)(6)(ii)(D) of this section; and ASME Code Case N–770, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities, Section XI, Division 1," (ASME Approval Date: January 26, 2009), which has been approved by the NRC with conditions in accordance with the requirements in paragraph (g)(6)(ii)(F) of this section. Copies of the ASME Boiler and Pressure Vessel Code, the ASME Code for Operation and Maintenance of Nuclear Power Plants, ASME Code Case N–722– 1, ASME Code Case N–729–1, and ASME Code Case N–770 may be purchased from the American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016 or through the Web http://www.asme.org/ Codes/. Single copies of NRC Regulatory Guides 1.84, Revision 34; 1.147, Revision 15; and 1.192 may be obtained free of charge by writing the Reproduction and Distribution Services Section, U.S. Nuclear Regulatory Commission, Washington, DC 20555– 0001; or by fax to 301–415–2289; or by e-mail to DISTRIBUTION.RESOURCE@nrc.gov. Copies of the ASME Codes and NRC Regulatory Guides incorporated by reference in this section may be inspected at the NRC Technical Library, Two White Flint North, 11545 Rockville Pike, Rockville, MD 20852–2738 or call 301–415–5610, 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.	

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ♦ ASME Does Not Support This Amendment

Proposed Amendment Provision	Comments
4. <u>ASME B&PV Code, Section III</u> ■ Revise 10 CFR 50.55a(b)(1) to clarify the wording and include the 1974 Edition (Division 1) through the 2008 Addenda (Division 1), subject to conditions. Change "limitations and modifications" to "conditions." **Page 75 FR 24352** 10 CFR 50.55a(b)(1): 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:	● ASME Supports This Amendment
5. <u>ASME B&PV Code, Section III</u> ■ Revise 10 CFR 50.55a(b)(1)(ii) *Weld leg dimensions* to revise the current conditions on the use of stress indices used for welds in piping design under Subarticles NB–3600, NC–3600, and ND–3600. Make editorial corrections and additions. **Page 75 FR 24352** 10 CFR 50.55a(b)(1)(ii) *Weld leg dimensions.* When applying the 1989 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(1) of this section, 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.	♦ ASME Does Not Support This Amendment This condition should be deleted. These subparagraphs (NB-3683.4(c)(1) and NB-3683.4(c)(2) 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) indicate the limits of applicability of the indices and do not establish the limitations of the weld sizes. The Section III limitations of the weld sizes are contained in Figures NB-4427-1, NC-4427-1 and ND-4427-1 which sets C_x min to 1.09 T_n.

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ♦ ASME Does Not Support This Amendment

6. <u>ASME B&PV Code, Section III</u> ■ Revise 10 CFR 50.55a(b)(1)(iii) to include the latest addenda to Section III of the ASME B&PV Code (2006 Addenda through the 2008 Addenda) and Subarticle NB–3200 of the 2004 Edition through the 2008 Addenda of the ASME B&PV Code subject to the condition outlined in paragraph (b)(1)(iii)(B). Change "limitation" to "condition." Add new conditions on the use of Subarticles NB–3200, NB–3600, NC–3600 and ND–3600.	Relative to the proposed 10 CFR 50.55a(b)(1)(iii), ASME offers the following comments on subparagraphs (A), (B), and (C):
Page 75 FR 24352 10 CFR 50.55a(b)(1)(iii) *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 2006 Addenda incorporated by reference in paragraph (b)(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)(B) 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 these subarticles.	● ASME Supports This Amendment (Except as Noted) The second sentence of paragraph (b)(1)(iii) prohibits the use of NB-3200, NB-3600, NC-3600, and ND-3600 in the 2006 Addenda, but then later in this sentence (and in the third sentence) permits the use of these Subarticles in the 2006 Addenda, subject to conditions (b)(1)(iii)(A), (B), and (C). Although ASME does not support all of the proposed conditions, ASME believes that the reference to the 2006 Addenda in the second sentence should be changed to the 2005 Addenda.
(A) For Class 1 elbows and tees of ferritic steel materials operating at temperatures above 300 °F, the allowable B_2' index defined in Subparagraph NB–3656(b)(3) shall be no less than $0.75B_2$ from Table NB– 3681(A)–1.	◇ ASME Does Not Support This Amendment The condition in (A) should be deleted. ASME has thoroughly investigated this issue and published the results in STP-NU-008 "Conservatism in the B_2 and B_2' Index." When all the material properties of ferritic steel at temperatures above 300 Fahrenheit are considered, the design margins on which the seismic criteria are based are maintained and the Code B_2' index is appropriate. ASME has never received a basis for the .75 B_2 limit.

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

(B) 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.	● ASME Supports This Amendment (Except as Noted) ASME has no objection to condition (B) other than the way it is phrased. It is not clear as to when evaluation of these loads is required. ASME strongly suggests that the condition be revised to add "by NB-3223(b)" after the word "required". Thus, the revised note would read, "...if evaluation of these loads is required by NB-3223(b)." *ASME will consider incorporating similar changes into a future Code revision.*
(C) D_o/t must not be greater than 40, where D_o is the outer diameter of pipe, and t is the nominal pipe thickness. Subparagraph NB–3683.2(C), Note (1) to Table NB–3681(a)–1, Note (3) to Figures NC–3673.2(b)–1 and ND–3673.2(b)–1 may not be applied.	◇ ASME Does Not Support This Amendment The condition in (C) should be deleted or modified. The cited subparagraphs and notes (Subparagraph NB-3683.2(C), Note (1) to Table NB-3681(a)-1, Note (3) to Figures NC-3673.2(b)-1 and ND-3673.2(b)-1) indicate the limits of applicability of the indices and do not establish the limitations of the Do/t ratio. The limitation on Do/t ratio is contained in NB-3656(b), NC/ND-3653.1(b), NC/ND-3655(b), and, by reference to the Level D requirements, NB-3655.2(b) and NC/ND-3654.2(b). There may be some concern that for Class 1 piping the limitation of the Do/t ratio only appears in NB-3656(b) under Level D Service Limits and we intend to initiate a Code change to rectify that so that the limitation would clearly also apply to Service Limits B which include reversing dynamic loads that are not required to be combined with nonreversing dynamic loads as well as when NB-3200 design rules are used. For this reason we would agree with a note that said "For Class 1 piping, the material and Do/t requirements of NB-3656(b) shall be met for all Service Limits when the Service Limits include reversing dynamic loads that are not required to be combined with nonreversing dynamic loads, and the alternative rules for reversing dynamic loads are used".
7. <u>ASME B&PV Code, Section III</u> ■ Revise 10 CFR 50.55a(b)(1)(iv) to incorporate by reference the 1994 Edition of NQA–1, "Quality Assurance	● ASME Supports This Amendment

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

Requirements for Nuclear Facilities." **Page 75 FR 24352** 10 CFR 50.55a(b)(1)(iv): *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.	ASME supports incorporating by reference a later edition of NQA-1. However, ASME does not support limiting the use of NQA-1 to the 1994 Edition as proposed, because later editions of NQA-1 are now considered acceptable to the NRC, as documented in Regulatory Guide 1.28, Revision 4, published in June, 2010. Revision 4 of R.G. 1.28 endorses Part I and Part II requirements included in NQA-1-2008 and the NQA-1a-2009 Addenda. ASME recommends that the proposed language in 10 CFR 50.55a(b)(1)(iv) be revised to reference R.G. 1.28 for editions and addenda of NQA-1 that the NRC finds acceptable for use in conjunction with Section III. Alternatively, ASME recommends that the proposed rule be revised to reference NQA-1-2008 with the NQA-1a-2009 Addenda.
8. <u>ASME B&PV Code, Section III</u> ■ Add a new condition in 10 CFR 50.55a(b)(1)(vii) to prohibit the use of paragraph NB–7742 of the 2006 Addenda up to and including the 2007 Edition and 2008 Addenda of the ASME B&PV Code, Section III. **Page 75 FR 24352** 10 CFR 50.55a(b)(1)(vii) *Capacity certification and demonstration of function of incompressible-fluid pressure-relief valves.* When applying the 2006 Addenda through the 2008 Addenda, applicants or licensees may not apply paragraph NB–7742 of the ASME B&PV Code, Section III. New Class 1 incompressible-fluid, pressure-relief valve designs must be tested at the highest values of set-pressure ranges as required by prior editions and addenda of the ASME B&PV Code, Section III.	● ASME Supports This Amendment *ASME will consider addressing this condition in a future Code revision.*
9. <u>ASME B&PV Code, Section XI</u> ■ Revise introductory text to 10 CFR 50.55a(b)(2) to clarify the wording and incorporate by reference the 2005 Addenda through 2008 Addenda of the ASME B&PV Code into § 50.55a; only Subsections IWA, IWB, IWC, IWD, IWE, IWF, IWL; Mandatory and Non-Mandatory Appendices of Division	● ASME Supports This Amendment

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◊ ASME Does Not Support This Amendment

1 are incorporated by reference into 10 CFR 50.55a, with conditions. Change "limitations and modifications" to "conditions." **Page 75 FR 24352** 10 CFR 50.55a(b)(2): 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 though the 1976 Winter Addenda, and the 1977 Edition through the 2007 Edition with the 2008 Addenda, subject to the following conditions:	
10. <u>ASME B&PV Code, Section XI</u> ■ Delete Existing 10 CFR 50.55a(b)(2)(i) *Limitations on Specific Editions and Addenda* because licensees are no longer using the 1974 and 1977 Editions and addenda of the ASME B&PV Code. **Page 75 FR 24333** The NRC proposes to remove § 50.55a(b)(2)(i) from the current regulations. This paragraph currently specifies which addenda may be used when applying the 1974 and 1977 Editions of Section XI of the ASME B&PV Code. Section 50.55a(g)(4)(ii) requires that licensees' successive 120- month inspection intervals comply with the requirements of the latest edition and addenda of the code incorporated by reference in § 50.55a(b)(2). Subsequently, licensees are no longer using these older editions (1974 and 1977 Editions) and addenda of the ASME B&PV Code, and therefore the NRC proposes to remove this paragraph.	● ASME Supports This Amendment
11. <u>ASME B&PV Code, Section XI</u> ■ Delete Existing 10 CFR 50.55a(b)(2)(iii) *Steam Generator Tubing* because the condition in the paragraph is redundant to the 1989 Edition through the 2008 Addenda of Section XI. **Page 75 FR 24333** The NRC proposes to remove § 50.55a(b)(2)(iii) from the current	● ASME Supports This Amendment

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

regulations. The current regulations in § 50.55a(b)(2)(iii) state that if the technical specifications of a nuclear power plant include surveillance requirements for steam generators different than those in Section XI, Article IWB–2000, the ISI program of steam generator tubing is governed by the requirements in the technical specifications. The 1989 Edition through the 2008 Addenda of Section XI IWB–2413, "Inspection Program for Steam Generator Tubing," state that "The examinations shall be governed by the plant Technical Specification." Since the condition in §50.55a(b)(2)(iii) is redundant to the 1989 Edition through the 2008 Addenda of Section XI, the NRC proposes to remove this condition.	
12. <u>ASME B&PV Code, Section XI</u> ■ Delete Existing 10 CFR 50.55a(b)(2)(iv) *Pressure-Retaining Welds in ASME Code Class 2 Piping* because licensees are no longer using these older editions and addenda of the code. **Page 75 FR 24333** The NRC proposes to remove § 50.55a(b)(2)(iv) from the current regulations. This paragraph states how to select appropriate Code Class 2 pipe welds in residual heat removal systems, emergency core cooling systems, and containment heat removal systems when applying editions and addenda up to the 1983 Edition through the Summer 1983 Addenda of Section XI of the ASME B&PV Code. Section 50.55a(g)(4)(ii) requires that licensee's successive 120-month inspection intervals comply with the requirements of the latest edition and addenda of the code incorporated by reference in § 50.55a(b)(2). Subsequently, licensees are no longer using these older editions and addenda of the code (editions and addenda up to the 1983 Edition through the Summer 1983 Addenda of Section XI), and therefore, the NRC proposes to remove the requirements of current § 50.55a(b)(2)(iv).	● ASME Supports This Amendment

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◆ ASME Does Not Support This Amendment

13. <u>ASME B&PV Code, Section XI</u> ■ Delete Existing 10 CFR 50.55a(b)(2)(v) *Evaluation Procedure and Acceptance Criteria for Austenitic Piping* because licensees are no longer using the Winter 1983 Addenda and the Winter 1984 Addenda of Section XI. **Page 75 FR 24334** The NRC proposes to remove § 50.55a(b)(2)(v) from the current regulations. This paragraph deals with evaluation procedures and acceptance criteria for austenitic piping when applying the Winter 1983 Addenda and the Winter 1984 Addenda of Section XI. Section 50.55a(g)(4)(ii) requires that licensees' successive 120-month inspection intervals comply with the requirements of the latest edition and addenda of the code incorporated by reference in § 50.55a(b)(2). Subsequently, licensees are no longer using these older editions and addenda of the code (editions and addenda up to the 1983 Edition through the Summer 1983 Addenda of Section XI), and therefore, the NRC proposes to remove the requirements of current § 50.55a(b)(2)(iv).	● ASME Supports This Amendment

Legend: ■ NRC Proposed Amendment
● ASME Supports This Amendment
◇ ASME Does Not Support This Amendment

14. <u>ASME B&PV Code, Section XI</u> ■ Renumber 10 CFR 50.55a(b)(2)(viii) to 10 CFR 50.55a(b)(2)(iv) and revise the introductory text to remove the conditions in redesignated paragraphs (b)(2)(iv)(F) and (b)(2)(iv)(G) when using the 2007 Edition with 2008 Addenda of the ASME Code, Section XI. **Page 75 FR 24353** (iv) *Examination of concrete containments.* Applicants or licensees applying Subsection IWL, 1992 Edition with the 1992 Addenda, shall apply paragraphs (b)(2)(iv)(A) of this section. Applicants or licensees applying Subsection IWL, 1995 Edition with the 1996 Addenda, shall apply paragraphs (b)(2)(iv)(A), (b)(2)(iv)(D)(*3*), and (b)(2)(iv)(E) of this section. Applicants or licensees applying Subsection IWL, 1998 Edition through the 2000 Addenda shall apply paragraphs (b)(2)(iv)(E) and (b)(2)(iv)(F) of this section. Applicants or licensees applying Subsection IWL, 2001 Edition through the 2004 Edition, up to and including the 2006 Addenda, shall apply paragraphs (b)(2)(iv)(E) through (b)(2)(iv)(G) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, shall apply paragraph (b)(2)(iv)(E) of this section.	● ASME Supports This Amendment (Except as Noted) ASME supports the removal of conditions applicable to the 2007 Edition with the 2008 Addenda of the ASME Code, Section XI, but not redesignating the paragraphs.

Legend: ■ NRC Proposed Amendment
● ASME Supports This Amendment
◇ ASME Does Not Support This Amendment

15. <u>ASME B&PV Code, Section XI</u> ■ Renumber 10 CFR 50.55a(b)(2)(ix) to 10 CFR 50.55a(b)(2)(v) and revise the introductory text to remove the conditions in redesignated paragraphs (b)(2)(v)(F), (b)(2)(v)(G), (b)(2)(v)(H) and (b)(2)(v)(I) when applying the 2004 Edition with 2006 Addenda through the 2007 Edition with 2008 Addenda of the ASME Code, Section XI and remove the condition in redesignated paragraph (b)(2)(v)(I) when applying the 2004 Edition, up to and including, the 2005 Addenda. Add a new condition as paragraph (b)(2)(v)(J) on the use of Article IWE–5000 of Subsection IWE when applying the 2007 Edition up to and including the 2008 Addenda of the ASME Code, Section XI.	● ASME Supports This Amendment (Except as Noted) ASME supports the removal of the conditions, but not redesignating the paragraphs and relative to the proposed 10 CFR 50.55a(b)(2)(v), ASME offers the following comments:
Page 75 FR 24353 (v) *Examination of metal containments and the liners of concrete containments.* Applicants or licensees applying Subsection IWE, 1992 Edition with the 1992 Addenda, or the 1995 Edition with the 1996 Addenda, shall satisfy the requirements of paragraphs (b)(2)(v)(A) through (b)(2)(v)(E) of this section. Applicants or licensees applying Subsection IWE, 1998 Edition through the 2001 Edition with the 2003 Addenda, shall satisfy the requirements of paragraphs (b)(2)(v)(A), (b)(2)(v)(B), and (b)(2)(v)(F) through (b)(2)(v)(I) of this section. Applicants or licensees applying Subsection IWE, 2004 Edition, up to and including, the 2005 Addenda, shall satisfy the requirements of paragraphs (b)(2)(v)(A), (b)(2)(v)(B), and (b)(2)(v)(F) through (b)(2)(v)(H) of this section. Applicants or licensees Licensees applying Subsection IWE, 2004 Edition with the 2006 Addenda, shall satisfy the requirements of paragraphs (b)(2)(v)(A) and (b)(2)(v)(B) of this section. Applicants or licensees applying Subsection IWE, 2007 Edition through the latest addenda incorporated by reference in paragraph (b)(2) of this section, shall satisfy the requirements of paragraphs (b)(2)(v)(A), (b)(2)(v)(B) and (b)(2)(v)(J) of this section.	◇ ASME Does Not Support This Amendment ASME does not support the application of the condition in the new (b)(2)(v)(A) to the 2006 Addenda, which incorporated requirements into IWE-2420(c) for evaluating the acceptability of inaccessible areas when conditions existed in accessible areas that could indicate the presence or result in degradation to such inaccessible areas. The condition should be modified so that for the implementation of the 2006 Addenda through the 2008 Addenda, information relative to inaccessible areas should be submitted in the ISI Summary Report. All conditions identified in the new designated (b)(2)(v)(A) should be limited to the 2005 Addenda and earlier editions and addenda. An editorial correction is recommended in the 4th line of (b)(2)(v) to delete the word "Licensees" which appears twice.
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(b)(2)(v)(J): In general, the cutting of a large hole in the containment pressure boundary for replacement of steam generators, reactor vessel heads, pressurizers, or other similar modification is considered a "major" modification or repair/replacement for Class MC and Class CC containment structures. When applying IWE–5000, any repair/replacement that is a "major" containment modification, as defined in this section, must be followed by a Type A test to provide assurance of containment structural 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 acceptance standard for the test must be in accordance with 10 CFR part 50, appendix J. In lieu of performing the Type A test, the applicant or licensee may conduct a short-duration structural test of the containment, which is a combination of actions to ensure that: (1) The modified containment meets the pre-service non-destructive examination (NDE) test requirements as required by the construction code; (2) The locally welded areas are examined for essentially zero leakage using a soap bubble test, or an equivalent test; (3) The entire containment is subjected to the peak calculated containment design basis accident pressure, P_a, for a minimum of 10 minutes (Class MC steel containment) and 1 hour (Class CC concrete containment); and (4) The outside surfaces of concrete containments are visually examined as required by Subsection IWL, during the peak pressure, and that the outside and inside surfaces of the steel containment surfaces are examined as required by Subsection IWE, during or immediately after the test.	◇ ASME Does Not Support This Amendment ASME does not support the addition of condition (b)(2)(v)(J) on the use of the 2007 Edition with the 2008 Addenda of the ASME Code, Section XI, Subsection IWE, for the following reasons: 1. This condition should not apply to metallic shell and penetration liners of Class CC components because these metallic liners do not serve a structural integrity function for Class CC components. Structural integrity of Class CC components is provided by the reinforced and/or post-tensioned concrete containment. Pressure test requirements in IWL-5000 of the 2008 Addenda are sufficient to ensure that the structural integrity of the Class CC component is demonstrated following major modifications or repair/replacement activities such as those identified in the proposed rule. As such, the proposed condition should not apply to Class CC components, and (b)(2)(v)(J) should be revised accordingly. 2. The actions described in (b)(2)(v)(J)(1) should be modified to not apply to the 2007 Edition with the 2008 Addenda of ASME Code, Section XI in the final rule. 3. The actions described in (b)(2)(v)(J)(2) should be modified to not apply in the final rule because IWE-5223 and IWE-5224 in the 2007 Edition with the 2008 Addenda already provide adequate test requirements to assure essentially zero leakage. 4. The actions described in (b)(2)(v)(J)(3) for Class MC components would prohibit the conduct of the pressure test at a pressure less than P_a. ASME recommends that (b)(2)(v)(J)(3) be revised to allow the test for Class MC components to be conducted at a test pressure consistent with the 10 CFR 50, Appendix J Type A Test, which is permitted to be conducted at a pressure of at least $0.96P_a$, as permitted by ANSI/ANS 56.8 – 1994. 5. New conditions proposed in (b)(2)(v)(J)(3) and (b)(2)(v)(J)(4) contain requirements that apply to Class CC concrete containments. These conditions, if needed, should be specified in (b)(2)(iv) *Examination of concrete containments*. However, ASME does not support these conditions for Class CC concrete containments when applying the

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	2007 Edition with the 2008 Addenda for the following reasons: • IWL-5220 in the 2007 Edition with 2008 Addenda specifies that concrete containment pressure test shall be conducted at the design basis accident pressure, P_a. • ASME believes that the examinations specified in IWL-5250 in the 2007 Edition with 2008 Addenda would necessitate maintaining the test pressure for a sufficient length of time and that specifying that the test pressure, P_a, be maintained for at least 1 hour is not necessary in the final rule. • IWL-5250 in the 2007 Edition with 2008 Addenda requires that surfaces "of all containment concrete placed during repair /replacement activities shall be examined in accordance with IWL-2310(b) prior to start of pressurization, at test pressure, and following completion of depressurization." As such, ASME believes that the conditions proposed in (b)(2)(v)(J)(4) for concrete containments is not necessary and should be removed from the final rule. 6. (b)(2)(v)(J) does not clearly define what constitutes a "major" modification or repair/replacement activity for Class MC and Class CC containment structures. Failure to provide a clear definition will cause potential confusion and possible conflict with requirements of 10 CFR 50, Appendix J, IV.A. 7. (b)(2)(v)(J) allows for an alternative to an Appendix J Type A test following "major" modifications or repair/replacement activities. However, performing a "short-duration structural test" as proposed would satisfy the condition in § 50.55a, but would not satisfy the requirements imposed by 10 CFR 50, Appendix J, Option A. As a result, a "short duration structural test" cannot be performed in lieu of a Type A Test, unless a licensee seeks an exemption from the Appendix J test requirement, or 10 CFR 50, Appendix J, Option A is revised to address the proposed alternative "short-duration structural test".
16. <u>ASME B&PV Code, Section XI</u> ■ <u>Redesignate paragraph (b)(2)(xv) as paragraph (b)(2)(xi) and</u>	● ASME Supports This Amendment (Except as Noted)

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revise it so that existing conditions would not apply to the 2007 Edition through the 2008 Addenda of Section XI. Change "provisions" to "conditions" in the introductory text to redesignated paragraphs (b)(2)(xi), (b)(2)(xi)(B), (b)(2)(xi)(C), (b)(2)(xi)(D), (b)(2)(xi)(E), (b)(2)(xi)(F), (b)(2)(xi)(G), (b)(2)(xi)(K), and (b)(2)(xi)(K)(1). Change "provisions of" to "conditions in" in paragraph (b)(2)(xi)(G)(3). Change "modified" and "modification" to "conditioned" and "condition" in (b)(2)(xi)(K)(2)(i), (b)(2)(xi)(K)(2)(iii), (b)(2)(xi)(K)(3)(i), (b)(2)(xi)(K)(3)(ii), (b)(2)(xi)(K)(4), and (b)(2)(xi)(L), where applicable. **Page 75 FR 24354** 10 CFR 50.55a(b)(2)(xi) *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)(xi)(A) through (b)(2)(xi)(M) of this section, except for paragraph (b)(2)(xi)(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 shall use the 2001 Edition of Appendix VIII, and may elect to comply with all of the provisions in paragraphs (b)(2)(xi)(A) through (b)(2)(xi)(M) of this section, except for paragraph (b)(2)(xi)(F) of this section, which may be used at the licensee's option.	ASME supports the removal of conditions applicable to the 2007 Edition with the 2008 Addenda of the ASME Code, Section XI. (Note that the condition in redesignated paragraph (b)(2)(xi)(A) was incorporated into the 2005 Addenda of ASME Section XI (record number 04-1561). However, ASME does not support redesignating the paragraphs.
17. <u>ASME B&PV Code, Section XI</u> ■ Redesignate paragraph (b)(2)(xvi) as paragraph (b)(2)(xii). Change "modified" to "conditioned" in redesignated paragraphs, with no change to the redesignated language. **Page 75 FR 24356** This change would extend the requirements of Appendix VIII, single-sided ferritic-vessel and piping and stainless steel piping examination, to the 2005 Addenda through the 2008 Addenda.	◇ ASME Does Not Support This Amendment ASME submitted to the NRC a Letter dated April 24, 2006 indicating that Appendix I in the 2005 Addenda was revised to address the condition identified in redesignated (b)(2)(xii). Appendix I was revised under record number 04-1561. Therefore, ASME believes that the proposed condition should not be applied to the 2005 Addenda through the 2008 Addenda. ASME also does not support redesignating the paragraph number.

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18. <u>ASME B&PV Code, Section XI</u> ■ Redesignate paragraph (b)(2)(xviii)(B) as paragraph (b)(2)(xiv)(B), and revise it so that existing condition would not apply to the 2007 Edition through the 2008 Addenda of Section XI. **Page 75 FR 24357** (B) 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).	◇ ASME Does Not Support This Amendment ASME supports the removal of conditions applicable to the 2007 Edition with the 2008 Addenda of the ASME Code, Section XI. However, ASME believes that the condition specified in proposed (b)(2)(xiv)(B) should not apply to the 2005 Addenda and later editions and addenda incorporated by reference in 10 CFR 50.55a because changes made in the 2005 Addenda (Record Number 04-618) have addressed this issue. ASME also does not support redesignating the paragraph number.
19. <u>ASME B&PV Code, Section XI</u> ■ Redesignate paragraph (b)(2)(xviii)(C) as paragraph (b)(2)(xiv)(C), and revise it such that the existing conditions on the qualification of VT–3 examination personnel would not apply to the 2005 Addenda through the 2008 Addenda of Section XI. **Page 75 FR 24357** (C) When applying editions and addenda prior to the 2004 Edition through 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.	● ASME Supports This Amendment (Except as Noted) ASME supports the removal of conditions applicable to the 2005 Addenda through the 2008 Addenda of the ASME Code, Section XI. However, ASME does not support redesignating the paragraph number.
20. <u>ASME B&PV Code, Section XI</u> ■ Redesignate paragraph (b)(2)(xix) as paragraph (b)(2)(xv), and revise it so that existing conditions for the substitution of alternative examination methods would not apply when using the 2005 Addenda through the 2008 Addenda. **Page 75 FR 24357**	● ASME Supports This Amendment (Except as Noted) ASME supports the removal of conditions restricting the use of IWA-2240 when using the 2005 Addenda through the 2008 Addenda of the ASME Code, Section XI. However, ASME does not support the new condition imposed on the use of IWA-4520(b)(2) and IWA-4521 of the 2008 Addenda.

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(xv) *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 B&PV 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 approved in paragraph (b)(2) of this section, allowing the substitution of ultrasonic examination for radiographic examination specified in the Construction Code are not approved for use.	The revisions to IWA-4520(b)(2) and IWA-4521 in the 2008 Addenda were made as a result of ASME Record Number BC04-1092. Justification for allowing the substitution of ultrasonic examination for radiographic examination specified in the Construction Code was documented in this record, and is also provided below: 2.2.2 Ultrasonic Examination in Lieu of Radiography "IWA-4520(b) includes a provision that will allow the substitution of the ultrasonic examination method for the radiographic method when performing certain repair/replacement activities (i.e. installation welds or welds for correction of flaws or defects). When using this alternative, the personnel qualifications, methods, and acceptance criteria of Section XI must be applied including procedures qualified in accordance with Appendix VIII. The subject change in IWA-4520(b) reads as follows: "If the Construction Code requires radiographic examination, the Owner may instead authorize use of ultrasonic examinations in accordance with IWA-4521." The new IWA-4521 reads: "...If permitted by IWA-4520(b), ultrasonic examination shall be performed using a procedure qualified in accordance with Appendix VIII..." Volumetric examination of repair/replacement welds has generally been performed using the radiographic method while ultrasonic examinations are usually performed during the performance of preservice and inservice inspections, However, it would be extremely beneficial to utilities if repair/replacement welds could be examined ultrasonically. For example, radiography requires the establishment of high radiation area boundaries that only the radiographers with dosimeters can enter. The area of the boundary is quite significant and can prevent the performance of other outage activities within a building or work area, Another example involves cost and schedule, Because Construction Code volumetric examinations are generally performed using radiography while preservice examinations are performed with the ultrasonic examination method, two different volumetric examinations must be performed before a weld can be finally accepted and ready for service. If a weld could be volumetrically

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	examined using the ultrasonic examination method only, Owners could see a substantial reduction in cost and schedule time. ASME has approved and published three code cases that allow the performance of ultrasonic examinations in lieu of radiography. They are Code Case 168, Use of Ultrasonic Examination In Lieu of Radiography for B31.1 Applications, Code Case 2235, Use of Ultrasonic Examination in Lieu of Radiography for Section I and Section VIII, Divisions 1 and 2, Code Case N-659, Use of Ultrasonic Examination in Lieu of Radiography for Weld Examinations, ASME Section III, Division 1. A new Section XI code case which will allow the performance of ultrasonic examinations in lieu of radiography has also been developed and is proceeding through the ASME committee review process, Additionally, the U,S, Navy and other industries have also allowed the alternative use of ultrasonic examination for radiographic examination, Therefore, the substitution of UT for RT is not a new concept. <u>Comparison of RT and UT</u> Radiography has performed well in validating the quality of the welding process and workmanship, It is most effective in detecting volumetric flaws such as slag or porosity, On the other hand, radiography is not very effective at detecting cracks or crack-like flaws unless the radiographer knows exactly what he is looking for and sets up specifically to find it. Interestingly, experience and fracture mechanics have demonstrated that many of the conditions (i.e., slag and porosity) that are rejectable by radiography do not significantly affect structural integrity, Better characterization of these detected conditions could allow for acceptance of these flaws while avoiding repair welding. That said, the radiographic method and acceptance standards do not allow for this. The ultrasonic examination method is most effective in detecting planar flaws such as cracks, lack of fusion, and lack of penetration. These are also the types of flaws that have the greatest impact on structural integrity. The ultrasonic method can measure the depth, length, and location of a flaw. This fundamental capability to characterize flaws allows for evaluation and acceptance of flaws that might otherwise require repair. Experience has also demonstrated that welds which successfully passed a radiographic examination do not always pass an ultrasonic examination. For example, preservice inspections of ASME Section III

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	welds by ultrasonic examination have sometimes identified defects that were missed by radiography. Conclusion The proposed change to allow UT in lieu of RT will be very beneficial to the industry and will not result in a reduction in safety. Three ASME code cases allowing UT for RT have already been approved by ASME, and a fourth code case (N-713) is proceeding through ASME committee reviews. If this UT for RT option is selected by an Owner, the UT will be performed in accordance with Appendix VIII using Section XI methods, personnel qualifications, and acceptance standards. Furthermore, because the Section XI acceptance standards are based on fracture mechanics, small planar flaws such as cracks, lack of fusion, or incomplete penetration can be accepted without repair. Additional justification for performing a Section XI ultrasonic examination in lieu of a Construction Code radiographic examination is provided in the white paper supporting Section XI Code Case N-713, Use of Ultrasonic Examination in Lieu of Radiography.
21. ASME B&PV Code, Section XI ■ Redesignate paragraph (b)(2)(xxiv) as paragraph (b)(2)(xx), and revise it so that existing condition would not apply when using the 2007 Edition through the 2008 Addenda. **Page 75 FR 24357** (xx) *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 B&PV Code, 2002 Addenda through the 2006 Addenda is prohibited.	● ASME Supports This Amendment (Except as Noted) ASME supports the removal of conditions applicable to the 2007 Edition with the 2008 Addenda of the ASME Code, Section XI. However, ASME does not support redesignating the paragraph number.
22. ASME B&PV Code, Section XI ■ Redesignate paragraph (b)(2)(xxvii) as paragraph (b)(2)(xxiii), and revise it to refer to IWA–5242 of the 2003 Addenda through the 2006 Addenda or IWA–5241 of the 2007 Edition through the 2008 Addenda of Section XI of the ASME B&PV Code for performing VT–2 visual examination of insulated	♦ ASME Does Not Support This Amendment ASME does not support applying the condition in proposed paragraph (b)(2)(xxiii) to the 2007 Edition through the 2008 Addenda of Section XI, or to the 2003 Addenda through the 2006 Addenda.

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components in systems borated for the purpose of controlling reactivity. **Page 75 FR 24357** (xxiii) *Removal of insulation*. When performing visual examination in accordance with IWA–5242 of Section XI of the ASME B&PV Code, 2003 Addenda through the 2006 Addenda, or IWA–5241 of the 2007 Edition through the latest edition and addenda incorporated in paragraph (b)(2) of the 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.	The basis for ASME's position on this matter is documented in a letter from ASME to Dr. Brian W. Sheron and Mr. Eric J Leeds, dated March 23, 2009. This information is also provided below: <u>Removal of Insulation from Bolted Joints.</u> Regulatory Guide 1.147 Rev. 15 contains a condition on Code Case N-616, which states, "(1) Insulation must be removed for VT-2 examination during the system pressure test for any 17-4 PH stainless steel of 410 stainless steel stud or bolt aged at a temperature below 1100°F or with hardness above R_c 30. (2) For A-286 stainless steel studs or bolts, the preload must be verified to be below 100 Ksi or the thermal insulation must be removed and the joint visually examined." 10CFR50.55a(b)(2)(xxvii) contains a similar condition, "Removal of Insulation." When performing visual examinations in accordance with IWA-5242 of Section XI, 2003 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of the 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." The purpose of this comment is to provide justification for ASME to not incorporate these conditions into IWA-5242 of Section XI or Case N-616, and to provide justification for the NRC to eliminate both of these conditions. ASME Section XI, IWA-5242(a), (1983 Edition with Winter 1984 Addenda through 2001 Edition with 2002 Addenda) requires that insulation be removed for VT-2 examination of bolted connections in systems borated for the purpose of controlling reactivity, because these bolted connections may be susceptible to boric acid corrosion. This is because carbon steel bolted connections experience accelerated corrosion under boric acid attack. Stainless steel, on the other hand, is relatively immune to boric acid attack. This has been well demonstrated by industry experience. Because of this, Code Case N-616 and the 2003 Addenda revision to IWA-5242(a) were developed to eliminate the insulation removal requirement for bolted materials that are not susceptible to general corrosion from boric acid attack.

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	In other words, if a bolted connection is susceptible to boric acid attack, Section XI requires removal of insulation to verify that the bolts have not been degraded by the boric acid. This is to ensure that the bolts have sufficient cross section remaining to carry the required clamping force. If a bolted connection is not susceptible to boric acid attack, removal of insulation is not necessary. The NRC condition identifies an unrelated concern regarding use of stainless steel bolting materials that have been excessively hardened such that they are susceptible to stress corrosion cracking (SCC). The imposed conditions do not address the reason for which ASME added the insulation removal requirements, nor the reason that those requirements were subsequently limited to systems borated for the purpose of controlling reactivity. For example, the stainless steel materials identified in the imposed condition could be present in systems not borated for reactivity control. In this case, insulation removal has never been required, but the bolting could still be susceptible to SCC. Furthermore, the removal of insulation and VT-2 visual examination are insufficient to detect SCC. The purpose of the VT-2 examination is to detect evidence of leakage from pressure retaining components, during the conduct of a system pressure test. Boric acid attack is caused by leakage and therefore falls within the purview of a VT-2 visual examination. If leakage is identified, the corrective actions required by IWA-5250 direct the Owner to perform a VT-3 visual examination of the bolting. The VT-3 examination is performed to "determine the general mechanical and structural condition of components and their supports ... and to detect discontinuities and imperfections, such as loss of integrity at bolted or welded connections, loose or missing parts, debris, corrosion, wear, or erosion." The VT-2 examination is unlikely to identify SCC, because a bolted-up connection renders all of the high stress locations inaccessible for visual examination. The first few turns of the bolting below the nut are the highest stress locations and therefore the locations most susceptible to SCC. Unfortunately, these locations are hidden from view, due to washers and the flange surface. Even if a bolt was completely severed by SCC, it is unlikely that it would be detected by the VT-2 visual

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	examination unless the broken bolt was to fall out. Because Stress Corrosion Cracking has such tight crack morphology, a more appropriate method to look for SCC might be ultrasonic examination. In fact, NRC Bulletin 89-02 addressed 410 stainless steel bolting, used in Anchor Darling swing check valves that had not been properly heat treated. Bulletin 89-02 required that similar bolting, if identified, be tested with surface examination techniques (MT or PT). Section XI does not mandate UT examinations of all bolting to look for SCC in inappropriately heat treated material, because an underlying assumption of Section XI is that materials have been properly manufactured in accordance with Section III, the Design Specifications or Owner's Requirements. Using inservice inspection as "last ditch" quality assurance verification is inappropriate. In response to SCC and other bolting issues, the industry has adopted bolting programs that specify the material to be used in bolted connections in Class 1, 2, and 3 applications. These bolting programs are adequate to ensure that SCC concerns are addressed. Therefore, the Regulatory Guide 1.147 and 10CFR50.55a(b)(2)(xxvii) conditions described above are, unnecessary and ineffective attempts to mandate material requirements. Section XI, and especially its VT-2 visual examination requirements to detect boric acid leakage, are an inappropriate location for such material requirements. In conclusion, there is no technical justification for ASME to adopt the Regulatory Guide 1.147 conditions on Code Case N-616 or the 10CFR50.55a(b)(2)(xxvii) conditions on IWA-5242 into ASME Section XI or Code Case N-616. Bolting that is excessively hardened beyond specifications is a procurement issue, not an inspection issue. The NRC has adequately addressed past procurement issues, such as the ones noted in Bulletin 89-02 through the issuance of information notices, bulletins, and other generic communications. Any procurement issues in the future can be handled in a like manner. Furthermore, no inspection technique exists in Section XI to ensure that the hardness of bolting is in accordance with design specifications. The bolting visual examination requirements in Section XI, IWA-5242 were added to ensure detection of boric acid leakage. The reason that insulation removal is required for borated systems is to ensure that leakage does not result in

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	unacceptable degradation of carbon steel bolting. Because the bolting addressed by Code Case N-616 and the 2003 Addenda and later of IWA-5242 is not susceptible to such degradation, removal of insulation is not necessary and does not improve safety. (Note that the hold time requirements cited in the Condition for Code Case N-616, Condition (3), not reproduced above) were added to Section XI, IWA-5213 in the 2003 Addenda.)
23. <u>ASME B&PV Code, Section XI</u> ■ Add new paragraph 10 CFR 50.55a(b)(2)(xxiv) to place conditions on the use of Section XI, Nonmandatory Appendix A, "Analysis of Flaws." **Page 75 FR 24357** (xxiv) *Analysis of flaws.* Licensees using ASME B&PV Code, Section XI, Appendix A shall 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 (σf). The flow stress is defined by $\sigma_f = ½ (\sigma_{ys} + \sigma_{ult})$, 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 $\Delta K_I = K_{max} - K_{min}$.	◇ ASME Does Not Support This Amendment The proposed condition is identical to that found in Appendix A, Article 4300(b) with the exception that the criterion for when the full K range ($K_{max} - K_{min}$) is to be used in a fatigue crack growth analysis was lowered from 1.12 times the flow stress (S_f) to 0.8 times 1.12 S_f. To accept the NRC amendment would result in more conservative crack growth rates to be computed when R-ratio is negative. The basis for 1.12 S_f factor was established from lab data for R<0 and considers crack closure effects. ASME recommends that the proposed condition be removed from the final rule, unless additional information is provided that justifies lowering the stress threshold for which ΔK is becomes the full K range of K_{max}-K_{min}.
24. <u>ASME B&PV Code, Section XI</u> ■ Add new paragraph 10 CFR 50.55a(b)(2)(xxv), to place condition specifying that Section E–1200 of the ASME B&PV Code, Section XI, Nonmandatory Appendix E, "Evaluation of Unanticipated Operating Events," is not acceptable for use. **Page 75 FR 24358** (xxv) *Evaluation of unanticipated operating events.* The provisions of ASME B&PV Code, Section XI, Appendix E, Section E–1200 are not approved for use. In addition, when using the	◇ ASME Does Not Support This Amendment ASME does not agree with the proposed change to prohibit the use of ASME B&PV Code, Section XI, Nonmandatory Appendix E, Section E-1200 or the provision to require that a "minimum initiation crack size" in Table E–2 shall be a 1/4T flaw. ASME believes that Section E-1200 is useful and conservative as is, and that prohibiting the use of Section E-1200 will ultimately result in added utility burden or loss of generation because of the additional time required

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◉ ASME Supports This Amendment
◇ ASME Does Not Support This Amendment

provisions of Section E–1300, the analytical procedure must be based on a postulated semi-elliptical surface flaw of a one-quarter vessel thickness (i.e., the "minimum initiation crack size" in Table E–2 shall be a 1/4T flaw) and the linear elastic fracture mechanics criteria be as follows: $1.4K_{Im} + K_{Ir} = K_{Ic}$ for the LTOP condition, and $1.4K_{Im} + K_{It} + K_{Ir} = K_{Ic}$, for the PTT condition	to perform analysis under Section E-1300. It is estimated that a Section E-1200 evaluation can be completed in hours while a Section E-1300 evaluation may require days or weeks. Furthermore, use of a 1/4T flaw size can produce unacceptable analytical results, even though crack initiation has not occurred, thereby complicating the resolution process following a fairly minor thermal transient or overpressure event. The requirement to use a "minimum initiation crack size" in Table E–2 of 1/4T is unnecessary. The current provision in Table E-2 for a crack size up to 1 inch deep is sufficient because 1. Real flaw sizes in vessels do not approach the 1 inch depth and are closer to a depth of approximately 0.10 inch deep or less based on actual vessel inspection data. Experience shows that the fabrication practice and inspection requirements for nuclear pressure vessels generally preclude the undetected presence of larger flaws, 2. Use of Section XI, EPRI PDI, and Appendix VIII provides continuous verification that the beltline region welds are either free of defects larger than approximately 0.10 inch or that they are documented and recorded. 3. Additional conservatism exists in the use of a lower bound reference toughness curve for prevention of crack initiation for these reference flaws. These results have been confirmed by inspections, extensive fracture mechanics analyses and testing programs to assure that reactor vessel integrity margins are maintained by the current ASME Code methods.
25. <u>ASME B&PV Code, Section XI</u> ■ Add new paragraph 10 CFR 50.55a(b)(2)(xxvi), "*Nonmandatory Appendix R*" to add condition that would require licensees to submit an alternative in accordance with § 50.55a(a)(3), and obtain NRC authorization of the proposed alternative prior to implementing Section XI, Non-Mandatory Appendix R, RI–ISI programs. **Page 75 FR 24358** (xxvi) *Nonmandatory Appendix R.* Nonmandatory Appendix R,	◇ ASME Does Not Support This Amendment The draft rule indicates that the purpose of this condition is to "ensure that future RI–ISI programs continue to comply with RG 1.178, "An Approach for Plant-Specific Risk-Informed Decisionmaking for Inservice Inspection of Piping," RG1.200, "An Approach for Determining the Technical Adequacy of Probabilistic Risk Assessment Results for Risk-Informed Activities," and NRC Standard Review Plan 3.9.8, "Risk-Informed Inservice Inspection of Piping.'".

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"Risk- Informed Inspection Requirements for Piping," of Section XI, 2005 Addenda through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, may not be implemented without prior NRC authorization of the proposed alternative in accordance with paragraph (a)(3)(i) of this section.	ASME does not support the (xxvi) requirement that licensees submit relief in accordance with 10 CFR 50.55a(a)(3) and obtain NRC approval prior to using Nonmandatory Appendix R. If the NRC intends to require that Risk-Informed ISI Programs comply with R.G. 1.178, R.G. 1.200, and NRC SRP 3.9.8, then ASME recommends that, in lieu of the proposed condition in (xxvi), the proposed condition be revised to specify that use of Nonmandatory Appendix R is acceptable, provided licensees comply with these applicable Regulatory Guides and the Standard Review Plan 3.9.8.
26. <u>ASME OM Code</u> ■ Revise introductory text to 10 CFR 50.55a(b)(3) to incorporate by reference the 2005 and 2006 Addenda of the ASME OM Code; Subsections ISTA, ISTB, ISTC, ISTD; Mandatory Appendices I and II; and Nonmandatory Appendices A through H and J of the ASME OM Code into § 50.55a. Change "limitations and modifications" to "conditions." **Page 75 FR 24358** 10 CFR 50.55a(b)(3): 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, and ISTD, Mandatory Appendices I and II, and Nonmandatory Appendices A through H and J, and include the 1995 Edition through the 2006 Addenda subject to the following conditions:	● ASME Supports This Amendment

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◊ ASME Does Not Support This Amendment

27. <u>ASME OM Code</u> ■ Revise 10 CFR 50.55a(b)(3)(v) to recognize that snubbers are tested in accordance with Section ISTD of the ASME OM Code when using the 2006 Addenda and later editions and addenda of Section XI of the ASME B&PV Code. **Page 75 FRN 24358** (v) *Subsection ISTD.* Article IWF– 5000, "Inservice Inspection Requirements for Snubbers," of the ASME B&PV Code, Section XI, must be used when performing inservice inspection examinations and tests of snubbers at nuclear power plants. (A) 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 (b)(3) of this section, in place of the requirements for snubbers in the editions and addenda up to the 2005 Addenda of the ASME B&PV 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) Licensees shall 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 B&PV Code.	• ASME Supports This Amendment (Except as Noted) ASME recommends that 10 CFR 50.55a(b)(3)(v) be revised as follows for clarification: *(v) Subsection ISTD. Article IWF– 5000, "Inservice Inspection Requirements for Snubbers," of the ASME B&PV Code, Section XI, must be used when performing inservice inspection examinations and tests of snubbers at nuclear plants, except as modified in (A) and (B) below.*
28. <u>ASME OM Code</u> ■ Revise 10 CFR 50.55a(b)(3)(vi) to state that this paragraph applies only when using the 1999 through 2005 Addenda of the ASME OM Code, as the 2006 Addenda of the ASME OM	• ASME Supports This Amendment

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Code was revised to be consistent with the conditions in paragraph (b)(3)(vi). **Page 75 FR 24358** (vi) *Exercise interval for manual valves.* Manual valves must be exercised on a 2-year interval rather that 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.	
29. Inservice Inspection ■ Revise text in 10 CFR 50.55a(g)(2), (g)(3), and (g)(4) to include the provisions for examination and testing snubbers in Subsection ISTD of the ASME OM Code, and the optional ASME code cases listed in Regulatory Guide 1.192 and to change "limitations and modifications" to "conditions." ***See Page 75 FR 24359 for specific paragraphs and proposed changes.***	● ASME Supports This Amendment
30. Inservice Inspection ■ Revise 10 CFR 50.55a(g)(4)(iii) to provide the proper references to Section XI, Table IWB– 2500–1, "Examination Category B–J," Item Numbers B9.20, B9.21 and B9.22. **Page 75 FR 24360** (iii) When applying editions and addenda prior to the 2003 Addenda of Section XI of the ASME B&PV 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.	● ASME Supports This Amendment
31. Inservice Inspection ■ Revise 10 CFR 50.55a(g)(5)(iii) to clarify that a request for relief must be submitted to the NRC no later than 12 months after the examination has been attempted during a given ISI interval and the ASME B&PV Code requirement determined	◇ ASME Does Not Support This Amendment ASME offers the following comments on the proposed change to 10 CFR 50.55a(g)(5)(iii):

Legend:
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- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

to be impractical. **Page 75 FR 24360** (iii) If the licensee has determined that conformance with a code requirement is impractical for its facility, the licensee shall notify the Commission 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 examination has been attempted.	1. ASME believes that there may some instances where licensees may find it impractical to perform an examination in its entirety. If a licensee determines that an examination requirement is completely impractical (no examination coverage is possible), it is not clear when the regulation would require a licensee to seek relief since it would not be practical to attempt to perform the examination. ASME supports the position that relief should not be requested until after an examination has been attempted for those examinations where the licensee expects some examination coverage to be possible. 2. ASME believes that compliance with the proposed requirement will be impossible for some licensees that have not yet submitted relief requests based on impracticality during their current inservice inspection intervals. For examinations that have been completed for more than 12 months (and for which the licensee determines the requirement to be impractical), it is unclear how compliance with the 12 month requirement can be met. ASME recommends that the NRC consider whether the proposed change should be applicable only to examinations performed following the effective date of the rule. 3. ASME believes that the proposed requirement to submit relief "no later than 12 months after the examination has been attempted" conflicts with the proposed change to 10 CFR 50.55a(g)(5)(iv). If it is the intent of 10 CFR 50.55a(g)(5)(iii) to require that relief requests based on impracticality be submitted within 12 months after the examination has been attempted, then the requirement in 10 CFR 50.55a(g)(5)(iv) to submit these relief requests within 12 months after the expiration of the ISI interval is no longer required. 4. ASME notes that a similar condition to require submittal of relief requests within 12 months of attempting a specified test has not been proposed for inservice testing. 5. ASME believes that the proposed language will result in an increase in the number of relief requests that will be required. Some licensees could elect to schedule all anticipated limited examinations later in an inspection interval solely to avoid having to comply with the requirement to submit relief within 12 months after attempting the examination. These type of relief requests are often similar in nature

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	and may be collected and grouped into one relief request letter using a tabular format as outlined in the NEI White Paper, "Standard Format for Requests from Commercial Reactor Licensees Pursuant to 10 CFR50.55(a)", Rev 1, June 2004, Appendix B, Template 6. This method seems practical to minimize preparation and review time for both the utility and the Commission. 6. ASME agrees that improvements in NDE techniques over time may allow licensees to obtain increased examination coverage. If a licensee chooses to defer completion of an examination so that improved techniques may be used in the future to obtain the required examination coverage, it is counter-productive to require that the licensee seek relief within the specified 12 month timeframe. 7. ASME believes that the proposed amendment to require that requests for relief based on impracticality "must be submitted to the NRC no later than 12 months after the examination has been attempted" is not necessary and should be removed in the final rule. In the event that the NRC continues to believe that this amendment is necessary, ASME believes that the requirement should be revised as follows: (iii) If the licensee has determined that conformance with a code requirement is impractical for its facility, the licensee shall notify the Commission 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 end of the inspection period in which the examination was completed.
32. <u>Inservice Inspection</u> ■ Revise 10 CFR 50.55a(g)(5)(iv) to clarify that licensees are required to submit requests for relief based on impracticality within 12 months after the expiration of the ISI interval for which relief is being sought.	● ASME Supports This Amendment ASME offers the following comments on the proposed change to 10 CFR 50.55a(g)(5)(iv): 1. ASME supports the proposed change that clarifies when requests for

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Page 75 FR 24360 (iv) Where the licensee determines that an examination required by Code edition or addenda is impractical, and is not included in the revised inservice inspection program as permitted by paragraph (g)(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 or subsequent 120-month inspection interval for which relief is sought.	relief based on impracticality must be submitted. 2. ASME believes that clarification of the words "and is not included in the revised inservice inspection program as permitted by paragraph (g)(4) of this section" is warranted. This language seems to imply that a licensee need not seek relief if the inservice inspection program is revised to identify the impractical requirement. ASME requests that the intent of this requirement be clarified in the final rule.
33. <u>Inservice Inspection</u> ■ Revise 10 CFR 50.55a(g)(6)(ii)(E)(1), (2), and (3) to update the requirements to Code Case N–722–1. **Page 75 FR 24360** (E) * * * (1) All licensees of pressurized water reactors shall 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 (g)(6)(ii)(E)(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 crack(s) in Alloy 600 nozzle wrought material and location, orientation, and length of crack(s) 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 shall	● ASME Supports This Amendment

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- ♦ ASME Does Not Support This Amendment

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.	
34. Inservice Inspection ■ Add new paragraph 10 CFR 50.55a(g)(6)(ii)(F) to incorporate ASME Code Case N–770, "Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated with UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities, Section XI, Division 1," with conditions, into 10 CFR 50.55a. **Pages 75 FR 24360 - 24361**	● ASME Supports This Amendment (Except as Noted) ASME supports the inclusion of Code Case N-770, but recommends that the final rule incorporate by reference Code Case N-770-1 approved by ASME on Dec. 25, 2009, in lieu of Code Case N-770. By doing so, many of the conditions proposed in the draft rule on the use of this case could be eliminated because they have been addressed in the revised case. The specific conditions that are addressed by Code Case N-770-1 are identified below:
(F) *Inspection requirements for class 1 pressurized-water reactor piping and vessel nozzle butt welds.* (1) Licensees of existing operating pressurized-water reactors as of [publication date of the final rule] shall implement the requirements of ASME Code Case N–770, subject to the conditions specified in paragraphs (g)(6)(ii)(F)(2) through (g)(6)(ii)(F)(16) of this section, by the first refueling outage after [date that is 60 days after the date of publication of the final rule].	
(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 stress improvement without welding 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 shall be categorized as Inspection Items A–1, A–2 or B until the NRC staff has reviewed the mitigation and authorized an alternative code case Inspection Item for the mitigated weld, or until an alternative code case	● ASME Supports This Amendment (Except as Noted) The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(2) to require that welds mitigated by inlays, cladding, or stress improvement by welding, be categorized as unmitigated welds pending plant-specific NRC review of the mitigation techniques and NRC authorization of an alternative ASME Code Case N–770 Inspection Item for the mitigated weld. ASME Code Case N–770 provides inspection methods and frequencies for welds mitigated by certain specified techniques. Inspections of mitigated welds are performed much less frequently than

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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 in this section.	unmitigated welds. Requirements for most of the mitigation methods are contained in other ASME code cases under development. The NRC has typically approved the application of pressure boundary weld mitigation techniques on a case-by-case basis. This condition is necessary to ensure that appropriate mitigation techniques are applied to welds before they are categorized as mitigated under Code Case N–770. All mitigation techniques, with the exception of Mechanical Stress Improvement Process (MSIP™), discussed in Code Case N–770 are the subject of separate Code Cases which will be subject to approval by the NRC. MSIP™ meets the requirements of Appendix I of Code Case N–770 and has been separately approved by the NRC. If approved mitigation techniques are employed a separate review of the reclassification of the welds should not be required. This proposed section, requiring that welds that have been mitigated by weld inlay or onlay of corrosion resistant cladding be categorized for ISI frequency as Inspection Item A-1, A-2, or B, is not consistent with other proposed requirements, or with later revisions of Code Case N-770. For example, (g)(6)(ii)(F)(6) requires that a weld that has been mitigated by inlay or corrosion resistant cladding, and then is found to be cracked, be reclassified as and inspected using the frequencies of Inspection Item A-1, A-2, or B. This indicates that an uncracked weld that has been mitigated by inlay or corrosion resistant cladding would NOT be categorized as inspection Items A-1, A-2 or B following an acceptable preservice examination. Another example is proposed in (g)(6)(ii)(F)(7), which requires that a weld mitigated by inlay or corrosion resistant cladding be examined each interval if at hot leg temperatures, and as part of a 25 percent sample plan on a 20 year frequency if at cold leg temperatures, which is not consistent with Inspection Item A-1, A-2, or B.
(3) Welds in Table 1, Inspection Items A–1, A–2, and B, that have not received a baseline examination using Section XI, Appendix VIII requirements, shall be examined at the next refueling outage after [the effective date of the final rule].	● ASME Supports This Amendment (Except as Noted) The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(3) to require that the baseline examination of welds in Inspection Items A–1, A–2, and B (unmitigated welds) be completed at the next refueling outage after the effective date of the final rule. Paragraph –2200 of Code Case N–770 permits welds in Inspection Items A–1, A–2, and B (unmitigated welds) that have not received a baseline examination to be examined within the

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	next two refueling outages from adoption of the Code Case. Welds in Inspection Items A–1, A–2, and B are the welds most likely to experience PWSCC and some of these welds may not have received a baseline examination, even under the industry initiative, MRP–139. This condition is necessary to ensure the integrity of these welds by requiring that all welds in Inspection Items A–1, A–2 and B be inspected at the first opportunity to perform the inspections. For some plants, the final rule approval timing may be such that there is not adequate time to plan and prepare for the required baseline inspection and prepare repair contingencies (e.g., approval of the rule in June and the next refueling outage for a plant is in September). By providing a window of the next two refueling outages, the required planning and preparation can be accommodated.
(4) The axial examination coverage requirements of –2500(c) may not be considered to be satisfied unless essentially 100 percent coverage is achieved.	◇ ASME Does Not Support This Amendment The NRC proposes to add a condition §50.55a(g)(6)(ii)(F)(4) to require essentially 100 percent coverage for axial flaws. Paragraph –2500(c) of Code Case N–770 permits examination of axial flaws with inspection coverage limitations provided essentially 100 percent coverage for circumferential flaws is achieved and the maximum coverage practical is achieved for axial flaws. This requirement on inspection limitations is inconsistent with comparable inspection requirements of the ASME B&PV Code, Section XI. Axial flaws can lead to through wall cracks and leakage of reactor coolant, which is a safety concern. This condition is necessary for the NRC to ensure that, through NRC review of an authorization of alternative inspection coverage, appropriate actions are being taken to address potential inspection limitations for axial flaws. The requirement was put in Code Case N–770 for those instances where essentially 100% coverage cannot be achieved due to interferences from other structures. In this case, if essentially 100% coverage for circumferential flaws (100% of the susceptible material volume) and the maximum coverage practical achieved for axial flaws, and limitations noted in the examination report, the coverage requirements were considered to be satisfied. This would assure that examinations necessary to prevent a "break before leak" were completed. The modifications required to obtain larger coverage for the axial flaws would

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

	result in increased dose to personnel which would not be justified for safety concerns. It is not uncommon for the DM welds in the PWR plants to have a taper transition from one side of the weld to the other side of the weld. This taper transition typically will not meet the flatness requirements needed to achieve essentially 100% coverage of the exam volume for a PDI qualified examination when examining for axially oriented flaws. The taper transition cannot be removed by simply removing excess weld material in the weld crown. It would typically require a change to the design of the components and welded connection to obtain a surface geometry that would allow essentially 100% coverage of the exam volume when examining for axially oriented flaws. Because an axially oriented PWSCC flaw is limited to the PWSCC susceptible material, the axial flaw size would not be large enough to result in a safety concern. Because the axially oriented PWSCC flaw does not present a safety concern, it should not be necessary to achieve essentially 100% coverage of the exam volume when examining for axially oriented flaws.
(5) Replace paragraph—3132.3(b) with "Previously-evaluated flaws that were mitigated by the techniques identified in Table 1 need not be reevaluated nor have additional successive or additional examinations performed if new planar flaws have not been identified or previously evaluated flaws have remained essentially unchanged."	◎ ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(5) to reword Paragraph –3132.3(b) on determining flaw growth using wording consistent with that used in the ASME B&PV Code, Section XI. Paragraph –3132.3(b) contains the statement that a "flaw is not considered to have grown if the size difference (from a previous examination) is within the measurement accuracy of the nondestructive examination (NDE) technique employed." The "measurement accuracy of the NDE technique employed" is not defined in the code case or in the ASME B&PV Code. Use of this terminology may result in a departure from the past practice when applying ASME B&PV Code, Section XI. Under the requirements of Section XI, one concludes that flaw growth has not occurred when a "previously evaluated flaw has remained essentially unchanged." The proposed condition uses this wording. This condition is necessary to clarify the requirements for determining whether flaw growth has occurred and make the requirements consistent with ASME B&PV Code requirements endorsed by the NRC in 10 CFR 50.55a.

Legend:
- ■ NRC Proposed Amendment
- ◎ ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

	Code Case N-770-1, approved by the ASME on Dec. 25, 2009, Paragraph –3132.3(b) has been modified to read as follows: *Previously evaluated flaws that were mitigated by the techniques identified in Table 1 need not be reevaluated nor have additional or successive examinations performed if new planar flaws have not been identified or the previously evaluated flaws have remained essentially unchanged.* Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.
(6) If a weld mitigated by inlay or cladding is determined through a volumetric examination to have cracking that penetrates beyond the thickness of the inlay or cladding, the weld must be reclassified as and inspected using the frequencies of Inspection Item A–1, A–2, or B, as appropriate, until corrected by repair/ replacement activity in accordance with IWA–4000 or by corrective measures beyond the scope of Code Case N–770.	● ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(6) on welds that are determined through a volumetric examination to have cracking that penetrates beyond the thickness of the inlay or cladding. The condition would require such welds to be reclassified as Inspection Item A–1, A–2, or B, as appropriate, until corrected by repair/ replacement activity in accordance with IWA–4000 or by corrective measures beyond the scope of Code Case N–770. Code Case N–770 would permit welds mitigated by inlay or cladding (i.e., onlay) in Inspection Items G, H, J, and K, to remain in those Inspection Items if cracking that penetrates through the thickness of the inlay or cladding occurs. The purpose of an inlay or cladding is to provide a corrosion resistant barrier between reactor coolant and the underlying Alloy 82/182 weld material that is susceptible to PWSCC. If cracking penetrates through the thickness of an inlay or cladding, the inspection frequencies of Inspection Items G, H, J, and K would no longer be appropriate even after satisfying the successive examination requirements of paragraph –2420. This condition is necessary because welds with cracking that penetrates beyond the thickness of the protective barrier of the inlay or cladding would no longer be mitigated and would need to be inspected under one of the Inspection Items for unmitigated welds. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, added the following to the end of Note 16(c): *If cracking penetrates beyond the thickness of the inlay or onlay, the weld shall be reclassified as Inspection Item A-1, A-2, or B,*

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

	as appropriate, until corrected by repair/replacement activity in accordance with IWA-4000 or by corrective measures beyond the scope of this Case (e.g., stress improvement). Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.
(7) For Inspection Items G, H, J, and K, the surface examination requirements of Table 1 must apply whether the inservice volumetric examinations are performed from the weld outside diameter or the weld inside diameter. All hot leg operating temperature welds in inspection items G, H, J, and K must be inspected each interval. A 25 percent sample of 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.	● ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(7) on welds in Inspection Items G, H, J, and K, (welds mitigated by inlay or cladding) that the ISI surface examination requirements of Table 1 should apply whether the inservice volumetric examinations are performed from the weld outside diameter or the weld inside diameter. Code Case N–770 only requires a surface examination for welds in Inspection Items G, H, J, and K if a volumetric examination is performed from the weld inside diameter surface. A volumetric examination performed from the weld outside diameter surface would not be capable of detecting flaws in an inlay or cladding. This condition is necessary to ensure that weld inlays or cladding are still performing their intended function of providing a protective barrier between the reactor coolant and the underlying Alloy 82/182 weld that is susceptible to PWSCC. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, modified the "Extent and Frequency of Examination" column in Table 1 to state: *".....Twenty-five percent of this population shall receive surface examination (17) performed from the weld inside surface and a volumetric examination (16) performed from either the inside or outside surface....."* This same modification was applied to Inspection Item G, H, J, and K. Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ♦ ASME Does Not Support This Amendment

(8) The first examination following weld inlay, cladding, weld overlay or stress improvement for Inspection Items D, G, and H may not be deferred to the end of the interval.	♦ ASME Does Not Support This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(8) to prohibit the first examination following weld inlay, cladding, or stress improvement for Inspection Items D, G, and H from being deferred to the end of the interval. Code Case N–770 provides requirements on the timing of the first examination following weld inlay, cladding, or stress improvement. While this condition might be appropriate for mitigation of cracked welds, it should be noted that Items D, G, and H address mitigation of uncracked welds. Therefore, ASME does not support the proposed condition, which ASME believes should be removed from the final rule.
(9) In applying Measurement or Quantification Criterion I–1.1 of Appendix I, a construction weld repair from the inside diameter to a depth of 50 percent of the weld thickness extending 360° around the weld shall be assumed.	● ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(9) on Measurement or Quantification Criterion I–1.1 of Appendix I to require the assumption in the weld residual stress (WRS) analysis of a construction weld repair from the inside diameter to a depth of 50 percent of the weld thickness extending 360°around the weld. Measurement or Quantification Criterion I–1.1 does not specify the circumferential extent of the repair that must be assumed. This condition is necessary to clarify the size of the repair to be assumed in the weld residual stress analysis which would ensure that appropriate criteria for the WRS analysis are used for mitigation by stress improvement. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, modified paragraph I-1.1 to read as follows: *".....A pre-stress improvement residual stress condition resulting from a construction weld repair from the inside surface to a depth of 50% of the weld thickness and extending for 360 deg. shall be assumed."* Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ♦ ASME Does Not Support This Amendment

(10) The last sentence of Measurement or Quantification Criterion I–2.1 of Appendix I shall be replaced by, "The analysis or demonstration test shall account for (a) load combinations that could relieve plastic stress due to shakedown and (b) any material properties related to stress relaxation over time."	● ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(10) on Measurement or Quantification Criterion I–2.1 of Appendix I to require that the last sentence be replaced. This criterion was inappropriately worded since this criterion pertains to the permanence of a mitigation process by stress improvement and plastic "shakedown" rather than "ratcheting" is the phenomenon that could lead to stress relaxation. This condition is necessary to clarify the type of analysis necessary to ensure that the mitigation process is permanent and that the inspection frequencies associated with the process continue to be correct. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, modified paragraph I-2.1 to read as follows: *"....The analysis or demonstration test shall account for (a) load combinations that could relieve stress due to shakedown and (b) any material properties related to stress relaxation over time."* Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.
(11) Replace Measurement or Quantification Criterion I–7.1 of Appendix I, with "An analysis shall be performed using IWB–3600 evaluation methods and acceptance criteria to verify that the mitigation process will not cause any existing flaws to grow.	● ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(11) to require that in applying Measurement or Quantification Criterion I–7.1 of Appendix I, an analysis be performed using IWB–3600 evaluation methods and acceptance criteria to verify that the mitigation process will not cause any existing flaws to grow. Measurement or Quantification Criterion I–7.1 permits the growth of existing flaws in welds mitigated by stress improvement. This is an inappropriate provision since the process of mitigating by stress improvement is intended to prevent growth of existing flaws which could lead to leakage or rupture of the weld. This condition is necessary to ensure that stress improvement of welds with existing flaws is an effective mitigation technique consistent with the inspection frequency in the code case. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, modified

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◆ ASME Does Not Support This Amendment

	paragraph I-7.1 to read as follows: *An analysis shall be performed using IWB-3600 evaluation methods and acceptance criteria to verify that the mitigation process will not result in any existing flaws to become unacceptable over the life of the weld, or before the next scheduled examination.* This wording will assure that stress improvement of welds with existing flaws is an effective mitigation technique consistent with the inspection frequency in the code case. It is also consistent with the Code Case methodology. If we were to require that flaws do not grow, than why would subsequent examinations need to be performed? Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.
(12) For any mitigated weld whose volumetric examination detects new flaws or growth of existing flaws in the required examination volume that exceed the acceptance standards of IWB–3514 and are found to be acceptable for continued service through an analytical evaluation meeting the requirements of IWB–3600 or a repair meeting the requirements of IWA–4000 or the alternative requirements of an ASME code case, a report summarizing the evaluation, along with inputs, methodologies, assumptions, and cause 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.	⊛ ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(12) to require that the NRC be provided with a report if the volumetric examination of any mitigated weld detects new flaws or growth of existing flaws that exceed the acceptance standards of IWB–3514 and are found to be acceptable for continued service through an analytical evaluation or a repair or the alternative requirements of an ASME code case. The report would summarize the evaluation, along with inputs, methodologies, assumptions, and cause of the new flaw or flaw growth and would be provided to the NRC prior to the weld being placed in service. Welds that are mitigated have been modified by a technique, such as weld inlays, cladding, or stress improvement. Mitigation techniques are designed to prevent new flaws from occurring and prevent the growth of any existing flaws. If volumetric examination detects new flaws or growth of existing flaws in the required examination volume, the mitigation will not be performing as designed and the NRC will need to evaluate the licensee's actions to address the problem. Therefore, this condition is needed to verify the acceptability of the weld prior to being placed back in service. ASME agrees that requiring submittal of this report to the NRC is appropriate.

Legend:
- ■ NRC Proposed Amendment
- ⊛ ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

(13) Replace the last sentence of the Extent and Frequency of Examination for Inspection Items C and F with, "Twenty-five percent of this population shall be added to the ISI Program in accordance with –2410 and shall be examined the shorter of once each inspection interval or the life of the overlay."	● ASME Supports This Amendment The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(13) to require that the last sentence of the Extent and Frequency of Examination for Inspection Items C and F be revised. Inspection Items C and F apply to butt welds mitigated by full structural weld overlays of Alloy 52/152 material. Note 10 of the Code Case requires that welds in Inspection Items C and F that are not included in the 25 percent sample be examined prior to the end of the mitigation evaluation period if the plant is to be operated beyond that time. This condition would ensure that welds in the 25 percent sample are also examined prior to the end of the mitigation evaluation period; that is, prior to the end of life of the overlay predicted by the mitigation evaluation. Inspection prior to the end of the mitigation evaluation period is necessary to ensure that appropriate information has been obtained to verify the condition of the weld overlay and update the analysis for the predicted life of the weld overlay. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, added the following sentence to the Extent and Frequency of Examination for Inspection Items C and F: *For each overlay in the 25% sample that has a design life of less than 10 yr., at least one inservice inspection shall be performed prior to exceeding the life of the overlay.* Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition.
(14) In Figures 2(b) and 5(b), the dimension "b" must be used in place of 1/2 inch (13 mm), where "b" is equivalent to the nominal thickness of the nozzle or pipe being overlaid, as appropriate.	● ASME Supports This Amendment (Except as Noted) The NRC proposes to add a condition §50.55a(g)(6)(ii)(F)(14) on the 1/2-inch (13 mm) dimension shown in Figures 2(b) and 5(b) of Code Case N–770. The condition would require that a dimension "b" be used instead of c inch, where "b" is equivalent to the nominal thickness of the nozzle or pipe being overlaid, as appropriate. The code case contains information on component thicknesses to be used in application of the acceptance standards of ASME B&PV Code, Section XI, IWB–3514, to evaluate flaws

Legend:
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- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

	detected during preservice inspection of weld overlays. The 1/2-inch (13 mm) dimension shown in Figures 2(b) and 5(b) is unconservative. The appropriate dimension is a function of the nominal thickness of the nozzle or pipe being overlaid and not a single specified value for all pipes and nozzles. This condition is necessary to ensure that acceptance standards used for evaluation of any flaws detected during preservice inspection of weld overlays assure an appropriate level of safety. Code Case N-770-1, approved by the ASME on Dec. 25, 2009, removed the 1/2-inch (13 mm) dimension shown in Figures 2(b) and 5(b) of Code Case N–770 and replaced them with dimensions "X" and "Y". The notes beneath each figure define dimensions "X" and "Y" as follows: *Dimension "x" or "y" is equivalent to the nominal thickness of the nozzle end preparation or the pipe, respectively, being overlaid.* Adoption of Code Case N-770-1 in lieu of N-770 in the final rule would allow the NRC to remove this condition. The proposed condition 10CFR50.55a(g)(6)(ii)(F)(14) would extend the examination volume of an overlay in the axial direction. Pre-existing overlays may not be long enough to meet this requirement. This condition should be revised to specify that pre-existing weld overlays shall be examined to the specified volume, or the extent possible if the overlay is not long enough to meet the new examination volume axial length. The examination volume specified in Figures 2(b) and 5(b) of revision zero of N-770 were revised/corrected in revision one of N-770 such that volume A-B-C-D is entirely contained within the overlay material. In addition, the thickness "t2" was revised/corrected to reflect the total thickness of the original pipe plus the overlay. If Code Case N-770-1 is not adopted in the final rule, the proposed NRC condition needs to be revised to incorporate these changes.
(15) For Inspection Items G, H, J, and K, when applying the acceptance standards of ASME B&PV Code, Section XI, IWB–3514, the thickness "t" in IWB– 3514 is the thickness of the inlay or onlay.	● ASME Supports This Amendment (Except as Noted) The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(15) on the use of the acceptance standards of ASME B&PV Code, Section XI, IWB–3514, for evaluating indications in inlays or onlays. The proposed

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◇ ASME Does Not Support This Amendment

	condition specifies that the thickness "t" in IWB–3514 is the thickness of the inlay or onlay. The code case requires that the preservice examination for inlays or onlays consist of a surface examination, which does not allow planar flaws, and a volumetric examination. The volumetric examination allows the use of the acceptance standards of IWB–3514 provided the surface examination acceptance standards are satisfied. That is, it would allow the acceptance of some subsurface indications, but IWB–3514 acceptance standards would only allow very small flaws. However, the code case does not specify the value "t" to be used in the application of IWB–3514. The appropriate value "t" when applying IWB–3514 to inlays or onlays is the thickness of the inlay or onlay, since the acceptance standards in this case only apply to accepting flaws within the inlay or onlay. This condition is necessary to preclude the misapplication of the acceptance standards of IWB–3514 and potential acceptance of flaws that could compromise the integrity and function of the inlay or onlay as a protective barrier. The use of "t" equal to the thickness of the inlay or onlay in using the acceptance criteria of IWB–3514 is inferred but not explicitly stated in the Code Case. It is an appropriate clarification. In a typical inlay or onlay mitigation, no structural credit is taken for the inlay/onlay material (cladding). Existing ASME Section XI rules should be applied for acceptance criteria for cladding (flaws in the inlay/onlay material) and base metal (for flaws that are in structural materials) when the inlay/onlay is not credited for structural qualification. The condition as proposed will not accomplish what was intended. As proposed, for a flaw in the original nozzle/weld material we would have to use t = the inlay/onlay thickness to determine the acceptable size per IWB-3514. Nothing would be acceptable under that condition. For flaws that are not contained within the inlay/onlay/cladding, the value of t used should be the full structural wall thickness. If the NRC feels that there still needs to be a condition specified in this area, it needs to be re-structured to specify appropriate t values for flaws that are contained within the inlay/onlay, and t values for flaws that are contained in the original structural material.
(16) Welds mitigated by optimized weld overlays in Inspection	● ASME Supports This Amendment (Except as Noted)

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◆ ASME Does Not Support This Amendment

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.	The NRC proposes to add a condition § 50.55a(g)(6)(ii)(F)(16) on welds mitigated by stress improvement by welding in Inspection Items D and E to not permit them to be placed into a population to be examined on a sample basis after the initial examination. Stress improvement by welding is also called an optimized weld overlay. Code Case N–770 permits welds mitigated by this technique to be placed in a 25 percent inspection sample after the initial examination. Sample inspections could result in three-quarters of the welds never being examined after the initial examination. Although full structural weld overlays have been used extensively in the nuclear industry for many years, the industry does not have experience with optimized weld overlays. Optimized weld overlays are designed to rely on the outer 25 percent of the original Alloy 82/182 material to satisfy the design margins and would not satisfy design margins if significant cracking were to occur. If significant cracking were to occur in the Alloy 82/182 material, the optimized weld overlay material would prevent the weld from leaking and could potentially rupture without prior evidence of leakage under design basis conditions. The proposed condition is necessary to ensure that all optimized weld overlays are periodically inspected for potential degradation. Code Case N–770 requires that a preservice inspection and at least one inservice inspection be performed before a weld mitigated by an optimized overlay can be put in the 25% population. This would provide early crack detection and the detection of any fabrication induced cracks. Thereafter, the leading indicator approach is taken in that the hottest, most susceptible, welds are inspected each interval. If these show indications of new cracking or growth of existing cracks, then the additional and successive examination paragraphs of the Case would apply to expand the examination. This is consistent with the philosophy applied to all the other mitigation techniques employed in the Case. <u>Additional comment for NRC to consider for the final rule:</u> Code Case N-770, Table 1, Inspection Item "D", Uncracked butt welds mitigated by stress improvement, has a requirement in the second sentence of "Extent and Frequency of Examination" to spread out the population of mitigated welds in years 3 through 10 following applications of the mitigation. This provision creates an unintended penalty when

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◆ ASME Does Not Support This Amendment

	compared to other mitigation categories which allows all of the population to be performed at once. A change was brought to the attention of the ASME Alloy 600 Task Group preparing revisions to the N-770-1 and accepted for incorporation into its next revision. The proposed change is being documented in ASME Codes & Standards Tracking number BC-09-1145. The change was to replace the 1st two sentences under the "Extent and Frequency of Examination" column of inspection Item "D" with the following sentence: *Examine all welds no sooner than the third refueling outage and no later than 10 years following stress improvement application.* The basis for this proposed change is as follows: The proposed change was made because the current wording in Table 1, "Category D, Uncracked butt weld mitigated with stress improvement, Extent and Frequency of Examination," creates an unnecessary penalty (compared to other mitigation categories) for dissimilar metal piping welds that are mitigated by stress improvement by spreading the examination population for the 1st examination through years 3 through 10. This provision was originally considered as consistent with the ASME Code Section XI, Table IWB-2412-1 and provisions in Table IWB-2500-1 for deferral to end of interval, which are only applicable for RV Nozzle to safe end welds, Category B-F welds item B5.10 and B5.20. However, when the population is applied to small quantity of mitigated welds other than the RV nozzles, it results in multiple mobilizations with possibly 1 weld per inspection period. The multiple mobilizations for these uncracked welds that are mitigated by stress improvement, creates an unrecognized inequity in N-770 and N-770-1 when compared to uncracked welds that are not mitigated (and remain in a larger population) as well as cracked welds that are mitigated by the same stress improvement method (Category E). This inequity is clear when recognizing that all other categories of mitigated welds, Categories E-K, do not require the spreading of the mitigated population for the 1st exam after mitigation. The spreading out of the population of mitigated welds in Category D as currently written is considered punitive in the first interval when compared to inspection without mitigation and could result in an impediment to performing mitigation.

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◆ ASME Does Not Support This Amendment

35. Inservice Inspection ■ Revise 10 CFR 50.55a, footnote 1 to clarify what portion of welds has to be inspected during the plant interval that remains after January 1, 2009. **Page 75 FR 24361** [1] For inspections to be conducted once per interval, the inspections shall 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 shall be performed in accordance with the schedule in Section XI, paragraph IWB–2400, of the 1994 Addenda.	● ASME Supports This Amendment
36. Inservice Testing 10 CFR 50.55a(f)	The proposed rule does not include any draft amendments to 10 CFR 50.55a(f). However, ASME offers the following comment for consideration for the final rule or for a future § 50.55a rulemaking: Unlike 10 CFR 50.55a(g), which specifies requirements for both inservice and preservice inspection, 10 CFR 50.55a(f) does not include a requirement to perform preservice testing or specify a code of record for preservice testing in accordance with the OM Code. The omission of preservice testing requirements in 10 CFR 50.55a(f) appears to be an oversight because the ASME OM Code includes requirements for preservice testing.

Legend:
- ■ NRC Proposed Amendment
- ● ASME Supports This Amendment
- ◆ ASME Does Not Support This Amendment

Rulemaking Comments

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Attachments:	Proposed Rule 50.55a May 4, 2010 ASME Comments Final.pdf

Corrected ASME Comments on the Proposed Rule for 10 CFR 50.55a Federal Register / Vol. 75, No. 85, pp. 24324-24361 / Tuesday, May 4, 2010 / Proposed Rules

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