From:	Kathryn Hyam
To:	RulemakingComments Resource
Cc:	Nove, Carol; Mark Ferlisi; Tom Vogan; rcl@tnorthconsulting.com; PRESSBURGER, MAURY A; Oliver Martinez; Kimberly Verderber; Daniel Miro-Quesada; Adams, Timothy; Rick Swayne; skulat@inserviceeng.com; dlamond@tnorthconsulting.com; cnpendle@southernco.com; trugs@comcast.net; Allyson B. Byk; Robert Keating; MATTHEWS Dale (Framatome) (dale.matthews@framatome.com); MCINTYRE, JAMES W; sparkmand@sparkmanandassociates.com; tauniav@lanl.gov; Kathryn Hyam
Subject:	[External_Sender] ASME Comments on Draft 50.55a 2019-2020 Edition Rule – RIN 3150-AK22, Docket ID NRC–2018–0290
Date:	Tuesday, May 25, 2021 3:09:51 PM
Attachments:	ASME Comments on Draft 50.55a 2019-2020 Edition Rule 05-24-2021.pdf
Importance:	High

To whom it may concern:

ASME is pleased to have the opportunity to provide comments and suggestions on Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, 10 CFR Part 50, RIN 3150- AK22, Docket ID NRC-2018-0290.

Please find attached the compiled comments from ASME for consideration during this rulemaking.

Sincerely,

Kate Hyam

Kate Hyam
Director
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May 24, 2021

Secretary, U.S. Nuclear Regulatory Commission Washington, DC 20555-0001

Attention: Rulemakings and Adjudications Staff

Subject: **Comments on Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, 10 CFR Part 50, RIN 3150-AK22, Docket ID NRC-2018-0290**

Reference:
1. Federal Register / Vol. 86, No. 57, pp. 16087-16114 / Friday, March 26, 2021/Proposed Rule
2. Federal Register/ Vol. 86, No. 90, pp. 25977-25978 / Wednesday, May 12, 2021, Proposed Rule; Correction

Dear Sir or Madam:

ASME is pleased to have the opportunity to provide comments and suggestions on your Nuclear Regulatory Commission (NRC), 10 CFR Part 50, RIN 3150-AK22, Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, Proposed Amended Requirements, published in Reference 1, as corrected in Reference 2.

Specifically, ASME supports the NRC's endorsement of later editions, addenda, and revisions to its Nuclear Codes, Standards, and Code Cases 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 following ASME Codes, Standards, and Code Cases:

1. The 2019 Editions of Section III, Division 1 and Section XI, Division 1 of the ASME Boiler and Pressure Vessel (BPV) Code, with conditions
2. The 2020 Edition of the ASME Operation and Maintenance (OM) Code, with conditions
3. NQA-1b-2011 Addenda, and the 2012 and 2015 Editions of ASME NQA-1, Quality Assurance Requirements for Nuclear Facility Applications

The ASME comments included in Enclosures 1 and 2 are intended to support the nuclear industry while protecting the health and safety of the public, without placing unnecessary burden on licensees. Thus, Enclosures 1 and 2 are provided for the use by the NRC staff to support, reconsider, remove, or modify its proposed (and existing) conditions where comments are provided. It is hoped that upon review of these ASME comments 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 concerning the contents of this letter, please direct them to Ms. Kathryn Hyam, Director, ASME Nuclear Codes & Standards by telephone (212) 591-8704 or by e-mail hyamk@asme.org.

Very Truly Yours,

Thomas J. Vogan, Chair
ASME Board on Nuclear Codes and Standards
Tomvogan45@gmail.com

Enclosures:

1. ASME Comments on 10 CFR 50.55a Proposed Rule
2. ASME Comments on 10 CFR 50.55a(b)(2)(xl) Condition in the Proposed Rule

cc: Carol Nove, USNRC (carol.nove@nrc.gov)
Officers of the ASME Board on Nuclear Codes and Standards
Officers of the ASME Standards Committee on Nuclear Inservice Inspection
Officers of the ASME Standards Committee on Construction of Nuclear Facility Components
Officers of the ASME Standards Committee on Operation and Maintenance of Nuclear Power Plants
Officers of the ASME Standards Committee on Nuclear Quality Assurance (NQA)

<table>
<tr><th>§50.55a Paragraph</th><th>Existing §50.55a Regulations (as of 03/26/2021)</th><th>Proposed Changes to §50.55a Regulations</th><th>ASME Comments on §50.55a Regulations - Existing and Proposed Changes</th></tr>
<tr><td>§50.55a(b)(1)</td><td>(1) Conditions on ASME BPV Code Section III. Each manufacturing license, standard design approval, and design certification under 10 CFR part 52 is subject to the following conditions. As used in this section, references to Section III refer to Section III of the ASME BPV Code and include the 1963 Edition through 1973 Winter Addenda and the 1974 Edition (Division 1) through the 2017 Edition (Division 1), subject to the following conditions:</td><td>(1) Conditions on ASME BPV Code Section III. Each manufacturing license, standard design approval, and design certification under 10 CFR part 52 is subject to the following conditions. As used in this section, references to Section III refer to Section III of the ASME BPV Code and include the 1963 Edition through 1973 Winter Addenda and the 1974 Edition (Division 1) through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, subject to the following conditions:</td><td>ASME has no comments on the proposed change.</td></tr>
<tr><td>§50.55a(b)(1)(ii), Table I</td><td>Table I - Prohibited Code Provisions.
<table>
<tr><th>Editions and addenda</th><th>Code provision</th></tr>
<tr><td>1989 Addenda through 2013 Edition</td><td>Subparagraph NB–3683.4(c)(1); Subparagraph NB–3683.4(c)(2).</td></tr>
<tr><td>1989 Addenda through 2003 Addenda</td><td>Footnote 11 to Figure NC–3673.2(b)–1; Footnote 11 to Figure ND–3673.2(b)–1.</td></tr>
<tr><td>2004 Edition through 2010 Edition</td><td>Footnote 13 to Figure NC–3673.2(b)–1; Footnote 13 to Figure ND–3673.2(b)–1.</td></tr>
<tr><td>2011 Addenda through 2017 Edition</td><td>Footnote 11 to Table NC–3673.2(b)–1; Footnote 11 to Table ND–3673.2(b)–1.</td></tr>
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<tr><td>2011 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section.</td><td>Footnote 11 to Table NC–3673.2(b)–1; Note 11 to Table ND–3673.2(b)–1.</td></tr>
</table></td><td>ASME has no comments on the proposed changes to §50.55a(b)(1)(ii), Table I – Prohibited Code Provisions.</td></tr>
<tr><td>§50.55a(b)(1)(iii)</td><td>(iii) Section III condition: Seismic design of piping. Applicants or licensees may use Subarticles NB–3200, NB–3600, NC–3600, and ND–3600 for seismic design of piping, up to and including the 1993 Addenda, subject to the condition specified in paragraph (b)(1)(ii) of this section. Applicants or licensees may not use</td><td>(iii) Section III condition: Seismic design of piping. Applicants or licensees may use Subarticles NB–3200, NB– 3600, NC–3600, and ND–3600 for seismic design of piping, up to and including the 1993 Addenda, subject to the condition specified in paragraph (b)(1)(ii) of this section. Applicants or licensees may not use</td><td>ASME has no comments on the proposed change.</td></tr>
</table>

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	these subarticles for seismic design of piping in the 1994 Addenda through the 2005 Addenda incorporated by reference in paragraph (a)(1) of this section, except that Subarticle NB–3200 in the 2004 Edition through the 2017 Edition may be used by applicants and licensees, subject to the condition in paragraph (b)(1)(iii)(A) of this section. Applicants or licensees may use Subarticles NB–3600, NC–3600, and ND–3600 for the seismic design of piping in the 2006 Addenda through the 2017 Edition, subject to the conditions of this paragraph corresponding to those subarticles.	these subarticles for seismic design of piping in the 1994 Addenda through the 2005 Addenda incorporated by reference in paragraph (a)(1) of this section, except that Subarticle NB–3200 in the 2004 Edition through the 2017 Edition may be used by applicants and licensees, subject to the condition in paragraph (b)(1)(iii)(A) of this section. Applicants or licensees may use Subarticles NB–3600, NC– 3600, and ND–3600 for the seismic design of piping in the 2006 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, subject to the conditions of this paragraph (b)(1)(iii) corresponding to those subarticles.	
§50.55a(b)(1)(iv)	(iv) *Section III condition: Quality assurance*. When applying editions and addenda later than the 1989 Edition of Section III, the requirements of NQA–1, "Quality Assurance Requirements for Nuclear Facility Applications," 1994 Edition, 2008 Edition, and the 2009–1a Addenda specified in either NCA–4000 or NCA–7000 of that edition and addenda of Section III may be used by an applicant or licensee, provided that the administrative, quality, and technical provisions contained in that edition and addenda of Section III are used in conjunction with the applicant's or licensee's appendix B to this part quality assurance program; and that the applicant's or licensee's Section III activities comply with those commitments contained in the applicant's or licensee's quality assurance program description. Where NQA–1 and Section III do not address the commitments contained in the applicant's or licensee's appendix B quality assurance program description, those licensee commitments must be applied to Section III activities.	(iv) *Section III condition: Quality assurance.* When applying editions and addenda later than the 1989 Edition of Section III, an applicant or licensee may use the requirements of NQA–1, ‘‘Quality Assurance Requirements for Nuclear Facility Applications,’’ that is both incorporated by reference in paragraph (a)(1)(v) of this section and specified in either NCA–4000 or NCA– 7000 of that Edition and Addenda of Section III, provided that the administrative, quality, and technical provisions contained in that Edition and Addenda of Section III are used in conjunction with the applicant’s or licensee’s appendix B to this part quality assurance program; and that the applicant’s or licensee’s Section III activities comply with those commitments contained in the applicant’s or licensee’s quality assurance program description. Where NQA–1 and Section III do not address the commitments contained in the applicant’s or licensee’s appendix B quality assurance program description, those licensee commitments must be applied to Section III activities.	*ASME supports the proposed revision to §50.55a(b)(1)(iv).*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
§50.55a(b)(1)(vii)	(vii) *Section III condition: Capacity certification and demonstration of function of incompressible-fluid pressure-relief valves*. When applying the 2006 Addenda through all editions and addenda up to and including the 2017 Edition, applicants and licensees may use paragraph NB–7742, except that paragraph NB–7742(a)(2) may not be used. For a valve design of a single size to be certified over a range of set pressures, the demonstration of function tests under paragraph NB–7742 must be conducted as prescribed in NB–7732.2 on two valves covering the minimum set pressure for the design and the maximum set pressure that can be accommodated at the demonstration facility selected for the test.	(vii) *Section III condition: Capacity certification and demonstration of function of incompressible-fluid pressure-relief valves*. When applying the 2006 Addenda through all editions and addenda up to and including the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, applicants and licensees may use paragraph NB–7742, except that paragraph NB–7742(a)(2) may not be used. For a valve design of a single size to be certified over a range of set pressures, the demonstration of function tests under paragraph NB–7742 must be conducted as prescribed in NB–7732.2 on two valves covering the minimum set pressure for the design and the maximum set pressure that can be accommodated at the demonstration facility selected for the test.	*ASME has no comments on the proposed change.*
§50.55a(b)(1)(x)	(x) *Section III Condition: Visual examination of bolts, studs and nuts*. Applicants or licensees applying the provisions of NB–2582, NC–2582, ND–2582, NE–2582, NF–2582, NG–2582 in the 2017 Edition of Section III, must apply paragraphs (b)(1)(x)(A) through (B) of this section. (A) Visual examination of bolts, studs, and nuts: First provision. When applying the provisions of NB–2582, NC–2582, ND–2582, NE–2582, NF–2582, NG–2582 in the 2017 Edition of Section III, the visual examinations are required to be performed in accordance with procedures qualified to NB–5100, NC–5100, ND–5100, NE–5100, NF–5100, NG–5100 and performed by personnel qualified in accordance with NB–5500, NC–5500, ND–5500, NE–5500, NF–5500, and NG–5500. (B) Visual examination of bolts, studs, and nuts: Second provision. When applying the provisions of NB–2582, NC–2582, ND–2582, NE–2582,	(x) *Section III Condition: Visual examination of bolts, studs and nuts.* Applicants or licensees applying the provisions of NB–2582, NC–2582, ND– 2582, NE–2582, NF–2582, NG–2582 in the 2017 Edition of Section III through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, must apply paragraphs (b)(1)(x)(A) through (B) of this section. (A) Visual examination of bolts, studs, and nuts: First provision. When applying the provisions of NB–2582, NC–2582, ND–2582, NE–2582, NF– 2582, NG–2582 in the 2017 Edition of Section III through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, the visual examinations are required to be performed in accordance with procedures qualified to NB–5100, NC– 5100, ND–5100, NE–5100, NF–5100, NG–5100 and performed by personnel qualified in accordance with NB–5500, NC–5500, ND–5500, NE–5500, NF– 5500, and NG–5500.	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	NF–2582, and NG–2582 in the 2017 Edition of Section III, bolts, studs, and nuts must be visually examined for discontinuities including cracks, bursts, seams, folds, thread lap, voids, and tool marks.	(B) Visual examination of bolts, studs, and nuts: Second provision. When applying the provisions of NB–2582, NC–2582, ND–2582, NE–2582, NF– 2582, and NG–2582 in the 2017 Edition of Section III through the latest edition and addenda incorporated by reference in paragraph (a)(1)(i) of this section, bolts, studs, and nuts must be visually examined for discontinuities including cracks, bursts, seams, folds, thread lap, voids, and tool marks.	
§50.55a(b)(1)(xiii)	N/A	(xiii) *Section III Condition: Preservice Inspection of Steam Generator Tubes*. Applicants or licensees applying the provisions of NB–5283 and NB–5360 in the 2019 Edition of Section III, must apply paragraphs (b)(1)(xiii)(A) through (B) of this section. (A) Preservice Inspection of Steam Generator Tubes: First provision. When applying the provisions of NB–5283 in the 2019 Edition of Section III, a full-length preservice examination of 100 percent of the steam generator tubing in each newly installed steam generator must be performed prior to plant startup. (B) *Preservice Inspection of Steam Generator Tubes: Second provision*. When applying the provisions of NB– 5360 in the 2019 Edition of Section III, flaws revealed during preservice examination of steam generator tubing performed in accordance with paragraph (b)(1)(xiii)(A) of this section must be evaluated using the criteria in the design specifications.	*Prior to the 2017 Code edition, the Section III requirement for PSI for steam generator tubes was required by Section XI and existed to provide a baseline for Section XI exams. It was not related to any inspections or testing required to construct, stamp, or completed the NV-1 form. Therefore, it had no relevance on the Section III construction of the Steam generator. It was just provided to support a requirement in Section XI.* *Section XI deleted the requirements for PSI as a Section XI requirement in IWB-2200 via record 10-129 (incorporated in the 2017 Code Edition) and now just states that "Steam generator examinations are conducted in accordance with the program required by the plant Technical Specification." Section XI action 10-129 (incorporated in the 2017 Code Edition) changed IWB-2200(a) to remove steam generator tubing from the category of items requiring PSI prior to initial plant startup and created new Table IWB-2500-1 (B-Q) which states that Steam generator examinations are conducted in accordance with the program required by the plant Technical Specification. Therefore, Section XI does not require a Section III manufacturer to provide a PSI for Steam Generator tubes nor do they require a PSI for steam generator tubes to be completed prior to initial plant startup.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
			At the time of the Section III Construction when the manufacturer would perform the PSI, the manufacturer does not have access to the plant Technical Specifications. Therefore, the Section III manufacturer needs to be provided with the inspection requirements and criteria. To accomplish this a requirement to conduct the PSI with the appropriate inspection criteria would need to be in the Section III Design Specification. Lacking this information any inspection done by the Section III manufacturer, could be a meaningless activity, at additional cost, since there is no certainty that the inspection would meet the requirements of the plant Technical Specifications. *Since the only reason for the requirement for the Section III requirement for a PSI of steam generator tubes was to support a Section XI requirement and Section XI removed that requirement, this change to Section III was made to align Section III with the change that had already been incorporated in Section XI. The USNRC conditions to impose a specific PSI for steam generator tubes be done by the Section III manufacturer imposes additional costs on the manufacturer, is not required for Section III construction, may end up being not used, and is not consistent with Section XI requirements.* *Therefore, ASME strongly recommends that this condition be removed in the final rule.*
§50.55a(b)(2)(viii)	(viii) *Section XI condition: Concrete containment examinations.* Applicants or licensees applying Subsection IWL, 1992 Edition with the 1992 Addenda, must apply paragraphs (b)(2)(viii)(A) through (E) of this section. Applicants or licensees applying Subsection IWL, 1995 Edition with the 1996 Addenda, must apply paragraphs (b)(2)(viii)(A),	(viii) *Section XI condition: Concrete containment examinations.* Applicants or licensees applying Subsection IWL, 2001 Edition through the 2004 Edition, up to and including the 2006 Addenda, must apply paragraphs (b)(2)(viii)(E) through (G) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition up to and including the 2008 Addenda must apply paragraph	*This condition removes references to several older editions and addenda of Section XI that are no longer in use in the United States.* *ASME supports the proposed revision to §50.55a(b)(2)(viii).*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	(b)(2)(viii)(D)(*3*), and (b)(2)(viii)(E) of this section. Applicants or licensees applying Subsection IWL, 1998 Edition through the 2000 Addenda, must apply paragraphs (b)(2)(viii)(E) and (F) of this section. Applicants or licensees applying Subsection IWL, 2001 Edition through the 2004 Edition, up to and including the 2006 Addenda, must apply paragraphs (b)(2)(viii)(E) through (G) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition up to and including the 2008 Addenda must apply paragraph (b)(2)(viii)(E) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition with the 2009 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, must apply paragraphs (b)(2)(viii)(H) and (I) of this section.	(b)(2)(viii)(E) of this section. Applicants or licensees applying Subsection IWL, 2007 Edition with the 2009 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, must apply paragraphs (b)(2)(viii)(H) and (I) of this section.	
§50.55a(b)(2)(viii)(A)	(A) *Concrete containment examinations: First provision.* Grease caps that are accessible must be visually examined to detect grease leakage or grease cap deformations. Grease caps must be removed for this examination when there is evidence of grease cap deformation that indicates deterioration of anchorage hardware.	(A) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(viii)(A).*
§50.55a(b)(2)(viii)(B)	(B) *Concrete containment examinations: Second provision*. When evaluation of consecutive surveillances of pre-stressing forces for the same tendon or tendons in a group indicates a trend of pre-stress loss such that the tendon force(s) would be less than the minimum design pre-stress requirements before the next inspection interval, an evaluation must be performed and reported in the Engineering Evaluation Report as prescribed in IWL–3300.	(B) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(viii)(B).*
§50.55a(b)(2)(viii)(C)	(C) *Concrete containment examinations: Third provision*. When the elongation	(C) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(viii)(C).*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	corresponding to a specific load (adjusted for effective wires or strands) during re-tensioning of tendons differs by more than 10 percent from that recorded during the last measurement, an evaluation must be performed to determine whether the difference is related to wire failures or slip of wires in anchorage. A difference of more than 10 percent must be identified in the ISI Summary Report required by IWA–6000.		
§50.55a(b)(2)(viii)(D)	(D) *Concrete containment examinations: Fourth provision*. The applicant or licensee must report the following conditions, if they occur, in the ISI Summary Report required by IWA–6000: (1) The sampled sheathing filler grease contains chemically combined water exceeding 10 percent by weight or the presence of free water; (2) The absolute difference between the amount removed and the amount replaced exceeds 10 percent of the tendon net duct volume; and (3) Grease leakage is detected during general visual examination of the containment surface.	(D) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(viii)(D).*
§50.55a(b)(2)(ix)	(ix) *Section XI condition: Metal containment examinations.* Applicants or licensees applying Subsection IWE, 1992 Edition with the 1992 Addenda, or the 1995 Edition with the 1996 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) through (E) and (b)(2)(ix)(K) of this section. Applicants or licensees applying Subsection IWE, 1998 Edition through the 2001 Edition with the 2003 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B) and (b)(2)(ix)(F) through (I) and (b)(2)(ix)(K) of this section. Applicants or licensees applying Subsection IWE, 2004 Edition, up to and including the 2005	(ix) *Section XI condition: Metal containment examinations*. Applicants or licensees applying Subsection IWE, 2001 Edition up to and including the 2003 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B), (F) through (I), and (K) of this section. Applicants or licensees applying Subsection IWE, 2004 Edition, up to and including the 2005 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B), (F) through (H), and (K) of this section. Applicants or licensees applying Subsection IWE, 2004 Edition with the 2006 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and	*This condition removes references to several older editions and addenda of Section XI that are no longer in use in the United States.* *ASME supports the proposed revision to §50.55a(b)(2)(ix).*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A) and (B) and (b)(2)(ix)(F) through (H) and (b)(2)(ix)(K) of this section. Applicants or licensees applying Subsection IWE, 2004 Edition with the 2006 Addenda, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and (b)(2)(ix)(K) of this section. Applicants or licensees applying Subsection IWE, 2007 Edition through the 2015 Edition, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and (J) and (K) of this section. Applicants or licensees applying Subsection IWE, 2017 Edition, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and (J) of this section.	(K) of this section. Applicants or licensees applying Subsection IWE, 2007 Edition through the 2015 Edition, must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B), (J), and (K) of this section. Applicants or licensees applying Subsection IWE, 2017 Edition, through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section must satisfy the requirements of paragraphs (b)(2)(ix)(A)(2) and (b)(2)(ix)(B) and (J) of this *section.*	
§50.55a(b)(2)(ix)(B)	(B) *Metal containment examinations: Second provision.* When performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA–2210–1 (1992 Edition through 2004 Edition) or Table IWA–2211–1 (2005 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1) of this section) may be extended and the minimum illumination requirements specified may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.	(B) *Metal containment examinations: Second provision.* When performing remotely the visual examinations required by Subsection IWE, the maximum direct examination distance specified in Table IWA–2210–1 (2001 Edition through 2004 Edition) or Table IWA–2211–1 (2005 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1) of this section) may be extended and the minimum illumination requirements specified may be decreased provided that the conditions or indications for which the visual examination is performed can be detected at the chosen distance and illumination.	*ASME supports the proposed revision to §50.55a(b)(2)(ix)(B).*
§50.55a(b)(2)(ix)(C)	(C) *Metal containment examinations: Third provision.* The examinations specified in Examination Category E–B, Pressure Retaining Welds, and Examination Category E–F, Pressure Retaining Dissimilar Metal Welds, are optional.	(C) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(ix)(C).*
§50.55a(b)(2)(ix)(D)	(D) *Metal containment examinations: Fourth provision.* This paragraph (b)(2)(ix)(D) may be used as an alternative to the requirements of	(D) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(ix)(D).*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	IWE– 2430. If the examinations reveal flaws or areas of degradation exceeding the acceptance standards of Table IWE– 3410–1, an evaluation must be performed to determine whether additional component examinations are required. For each flaw or area of degradation identified that exceeds acceptance standards, the applicant or licensee must provide the following in the ISI Summary Report required by IWA–6000: (1) A description of each flaw or area, including the extent of degradation, and the conditions that led to the degradation; (2) The acceptability of each flaw or area and the need for additional examinations to verify that similar degradation does not exist in similar components; (3) A description of necessary corrective actions; and (4) The number and type of additional examinations to ensure detection of similar degradation in similar components.		
§50.55a(b)(2)(ix)(E)	(E) *Metal containment examinations: Fifth provision.* A general visual examination as required by Subsection IWE must be performed once each period.	(E) [Reserved]	*ASME supports the proposed deletion of §50.55a(b)(2)(ix)(E).*
§50.55a(b)(2)(ix)(J)	(J) *Metal containment examinations: Tenth provision.* In general, a repair/replacement activity such as replacing a large containment penetration, cutting a large construction opening in the containment pressure boundary to replace steam generators, reactor vessel heads, pressurizers, or other major equipment; or other similar modification is considered a major containment modification. When applying IWE–5000 to Class MC pressure-retaining components, any major containment	(J) *Metal containment examinations: Tenth provision.* In general, a repair/ replacement activity such as replacing a large containment penetration, cutting a large construction opening in the containment pressure boundary to replace steam generators, reactor vessel heads, pressurizers, or other major equipment; or other similar modification is considered a major containment modification. When applying IWE–5000 to Class MC pressure-retaining components, any major containment modification	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	modification or repair/replacement must be followed by a Type A test to provide assurance of both containment structural integrity and leak-tight integrity prior to returning to service, in accordance with 10 CFR part 50, Appendix J, Option A or Option B on which the applicant's or licensee's Containment Leak-Rate Testing Program is based. When applying IWE–5000, if a Type A, B, or C Test is performed, the test pressure and acceptance standard for the test must be in accordance with 10 CFR part 50, Appendix J.	or repair/replacement must be followed by a Type A test to provide assurance of both containment structural integrity and leak-tight integrity prior to returning to service, in accordance with appendix J to this part, Option A or Option B, on which the applicant's or licensee's Containment Leak-Rate Testing Program is based. When applying IWE–5000, if a Type A, B, or C Test is performed, the test pressure and acceptance standard for the test must be in accordance with appendix J to this part.	
§50.55a(b)(2)(x)	(x) *Section XI condition: Quality assurance.* When applying the editions and addenda later than the 1989 Edition of ASME BPV Code, Section XI, the edition and addenda of NQA–1, "Quality Assurance Requirements for Nuclear Facility Applications," 1994 Edition, the 2008 Edition, and the 2009–1a Addenda specified in either IWA–1400 or Table IWA 1600–1 of that edition and addenda of Section XI, may be used by a licensee provided that the licensee uses its appendix B to this part quality assurance program in conjunction with Section XI requirements and the commitments contained in the licensee's quality assurance program description. Where NQA–1 and Section XI do not address the commitments contained in the licensee's appendix B quality assurance program description, those licensee commitments must be applied to Section XI activities.	(x) *Section XI condition: Quality assurance.* When applying the editions and addenda later than the 1989 Edition of ASME BPV Code, Section XI, licensees may use any edition or addenda of NQA–1, ''Quality Assurance Requirements for Nuclear Facility Applications,'' that is both incorporated by reference in paragraph (a)(1)(v) of this section and specified in Table IWA 1600–1 of that edition and addenda of Section XI, provided that the licensee uses its appendix B to this part quality assurance program in conjunction with Section XI requirements and the commitments contained in the licensee's quality assurance program description. Where NQA–1 and Section XI do not address the commitments contained in the licensee's appendix B quality assurance program description, those licensee commitments must be applied to Section XI activities.	*ASME has no comments on the proposed change.*
§50.55a(b)(2)(xii)	(xii) *Section XI condition: Underwater welding.* The provisions in IWA–4660, "Underwater Welding," of Section XI, 1997 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, are approved for use on irradiated material with the following conditions:	(xii) *Section XI condition: Underwater welding.* The provisions in IWA–4660, ''Underwater Welding,'' of Section XI, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, are approved for use on irradiated material with the following conditions:	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	(A) *Underwater welding: First provision*. Licensees must obtain NRC approval in accordance with paragraph (z) of this section regarding the welding technique to be used prior to performing welding on ferritic material exposed to fast neutron fluence greater than 1 × 10^{17} n/cm2 (E > 1 MeV). (B) *Underwater welding: Second provision.* Licensees must obtain NRC approval in accordance with paragraph (z) of this section regarding the welding technique to be used prior to performing welding on austenitic material other than P-No. 8 material exposed to thermal neutron fluence greater than 1 × 10^{17} n/cm2 (E < 0.5 eV). Licensees must obtain NRC approval in accordance with paragraph (z) regarding the welding technique to be used prior to performing welding on P-No. 8 austenitic material exposed to thermal neutron fluence greater than 1 × 10^{17} n/cm2 (E < 0.5 eV) and measured or calculated helium concentration of the material greater than 0.1 atomic parts per million.	(A) *Underwater welding: First provision*. Licensees must obtain NRC approval in accordance with paragraph (z) of this section regarding the welding technique to be used prior to performing welding on ferritic material exposed to fast neutron fluence greater than 1 × 10^{17} n/cm2 (E > 1 MeV). (B) *Underwater welding: Second provision.* Licensees must obtain NRC approval in accordance with paragraph (z) of this section regarding the welding technique to be used prior to performing welding on austenitic material other than P-No. 8 material exposed to thermal neutron fluence greater than 1 × 10^{17} n/cm2 (E < 0.5 eV). Licensees must obtain NRC approval in accordance with paragraph (z) regarding the welding technique to be used prior to performing welding on P-No. 8 austenitic material exposed to thermal neutron fluence greater than 1 × 10^{17} n/ cm2 (E < 0.5 eV) and measured or calculated helium concentration of the material greater than 0.1 atomic parts per million.	
§50.55a(b)(2)(xiv)	(xiv) *Section XI condition: Appendix VIII personnel qualification.* All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII must receive 8 hours of annual hands-on training on specimens that contain cracks. Licensees applying the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section may use the annual practice requirements in VII–4240 of Appendix VII of Section XI in place of the 8 hours of annual hands-on training provided that the supplemental practice is performed on material or welds that contain cracks, or by analyzing prerecorded data from material or welds that contain cracks. In either case, training must be completed no earlier than 6 months prior to	(xiv) *Section XI condition: Appendix VIII personnel qualification*. All personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII must receive 8 hours of annual hands-on training on specimens that contain cracks. Licensees applying the 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section may use the annual practice requirements in VII–4240 of Appendix VII of Section XI in place of the 8 hours of annual hands-on training provided that the supplemental practice is performed on material or welds that contain cracks, or by analyzing prerecorded data from material or welds that contain cracks. In either case, training must be completed no earlier	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	performing ultrasonic examinations at a licensee's facility.	than 6 months prior to performing ultrasonic examinations at a licensee's facility.	
§50.55a(b)(2)(xv)	(xv) *Section XI condition: Appendix VIII specimen set and qualification requirements.* Licensees using Appendix VIII in the 1995 Edition through the 2001 Edition of the ASME Boiler and Pressure Vessel Code may elect to comply with all of the provisions in paragraphs (b)(2)(xv)(A) through (M) of this section, except for paragraph (b)(2)(xv)(F) of this section, which may be used at the licensee's option. Licensees using editions and addenda after 2001 Edition through the 2006 Addenda must use the 2001 Edition of Appendix VIII and may elect to comply with all of the provisions in paragraphs (b)(2)(xv)(A) through (M) of this section, except for paragraph (b)(2)(xv)(F) of this section, which may be used at the licensee's option.	N/A	*ASME recommends that the condition be revised to apply only to the 2001 Edition and later editions and addenda. ASME notes that the NRC's markup of the existing regulations included this change, but the proposed change was not included in the Federal Register Notice for the proposed rule.*
§50.55a(b)(2)(xviii)(A)	(A) *NDE personnel certification: First provision*. Level I and II nondestructive examination personnel must be recertified on a 3-year interval in lieu of the 5-year interval specified in the 1997 Addenda and 1998 Edition of IWA–2314, and IWA–2314(a) and IWA–2314(b) of the 1999 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.	(A) *NDE personnel certification: First provision.* Level I and II nondestructive examination personnel must be recertified on a 3-year interval in lieu of the 5-year interval specified in IWA–2314(a) and IWA–2314(b) of the 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.	*ASME has no comments on the proposed change.*
§50.55a(b)(2)(xviii)(D)	(D) *NDE personnel certification: Fourth provision.* The use of Appendix VII, Table VII–4110–1 and Appendix VIII, Subarticle VIII–2200 of the 2011 Addenda through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section is prohibited. When using ASME BPV Code, Section XI editions and addenda later than the 2010 Edition, licensees and applicants must use the prerequisites for ultrasonic examination personnel certifications in Appendix VII, Table VII–4110–1 and Appendix VIII, Subarticle VIII–2200 in the 2010 Edition.	(D) *NDE personnel certification: Fourth provision.* The use of Appendix VII, Table VII–4110–1 and Appendix VIII, Subarticle VIII–2200 of the 2011 Addenda through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section is prohibited. When using ASME BPV Code, Section XI editions and addenda later than the 2010 Edition, licensees and applicants must use the prerequisites for ultrasonic examination personnel certifications in Appendix VII, Table VII–4110–1 and Appendix VIII, Subarticle VIII–2200 in the 2010 Edition.	*ASME supports the proposed changes to provide alternative personnel qualification provisions.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
		(1) As an alternative to Note (c) in Table VII–4110–1 of ASME BPV Code, Section XI, 2010 Edition, the 250 hours of Level I experience time may be reduced to 175 hours, if the experience time includes a minimum of 125 hours of field experience and 50 hours of laboratory practice beyond the requirements of for training in accordance with Appendix VII Subarticle 4220, provided those practice hours are dedicated to the Level I or Level II skill areas as described in ANSI/ ASNT CP–189. (2) As an alternative to Note (d) in Table VII–4110–1 of ASME BPV Code, Section XI, 2010 Edition, the 800 hours of Level II experience time may be reduced to 720 hours, if the experience time includes a minimum of 400 hours of field experience and a minimum of 320 hours of laboratory practice. The practice must be dedicated to scanning specimens containing flaws in materials representative of those in actual power plant components. Additionally, for Level II Certification, the candidate must pass a Mandatory Appendix VIII, Supplement 2 performance demonstration for detection and length sizing.	
§50.55a(b)(2)(xix)	(xix) *Section XI condition: Substitution of alternative methods.* The provisions for substituting alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA–2240 must be applied when using the 1998 Edition through the 2004 Edition of Section XI of the ASME BPV Code. The provisions in IWA–4520(c), 1997 Addenda through the 2004 Edition, allowing the substitution of alternative methods, a combination of methods, or newly developed techniques for the methods specified in the Construction Code, are not approved for use. The provisions in IWA–4520(b)(2) and	(xix) *Section XI condition: Substitution of alternative methods.* The provisions for substituting alternative examination methods, a combination of methods, or newly developed techniques in the 1997 Addenda of IWA–2240 must be applied when using the 2001 Edition through the 2004 Edition of Section XI of the ASME BPV Code. The provisions in IWA–4520(c), 2001 Edition 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–	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	IWA–4521 of the 2008 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, allowing the substitution of ultrasonic examination for radiographic examination specified in the Construction Code, are not approved for use.	4521 of the 2008 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, allowing the substitution of ultrasonic examination for radiographic examination specified in the Construction Code, are not approved for use.	
§50.55a(b)(2)(xx)(A)	(A) *System leakage tests: First provision*. When performing system leakage tests in accordance with IWA–5213(a), 1997 through 2002 Addenda, the licensee must maintain a 10-minute hold time after test pressure has been reached for Class 2 and Class 3 components that are not in use during normal operating conditions. No hold time is required for the remaining Class 2 and Class 3 components provided that the system has been in operation for at least 4 hours for insulated components or 10 minutes for uninsulated components.	(A) *System leakage tests: First provision*. When performing system leakage tests in accordance with IWA–5213(a), 2001 Edition through 2002 Addenda, the licensee must maintain a 10-minute hold time after test pressure has been reached for Class 2 and Class 3 components that are not in use during normal operating conditions. No hold time is required for the remaining Class 2 and Class 3 components provided that the system has been in operation for at least 4 hours for insulated components or 10 minutes for uninsulated components.	*ASME supports the proposed change to limit the condition to the 2001 Edition through the 2002 Addenda. ASME also recommends that the NRC consider removing this condition in the subsequent §50.55a rule to incorporate by reference the 2021 Edition of Section XI if the 2001 Edition through the 2002 Addenda is no longer incorporated by reference in §50.55a(a).*
§50.55a(b)(2)(xx)(B)	(B) *System leakage tests: Second provision.* The NDE provision in IWA–4540(a)(2) of the 2002 Addenda of Section XI must be applied when performing system leakage tests after repair and replacement activities performed by welding or brazing on a pressure retaining boundary using the 2003 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section.	N/A	*ASME continues to believe that this condition is unnecessary for reasons documented in our letter dated November 30, 2015 to Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Subject: Comments on Incorporation by Reference of American Society of Mechanical Engineers Codes and Code Cases, 10 CFR Part 50, RIN 3150-AI97.*
§50.55a(b)(2)(xx)(C)	(C) *System leakage tests: Third provision.* The use of the provisions for an alternative BWR pressure test at reduced pressure to satisfy IWA–4540 requirements as described in IWA–5213(b)(2), IWB–5210(c) and IWB–5221(d) of Section XI, 2017 Edition may be used subject to the following conditions: (1) The use of nuclear heat to conduct the BWR Class 1 system leakage test is prohibited	(C) *System leakage tests: Third provision.* The use of the provisions for an alternative BWR pressure test at reduced pressure to satisfy IWA–4540 requirements as described in IWB–5210(c) of Section XI, 2017 Edition and IWA–5213(b)(2) and IWB–5221(d) of Section XI, 2017 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section may be used subject to the following conditions:	*ASME continues to support the Section XI Code requirements and original technical white paper developed to support the current IWA-5213(b)(2). To date, ASME has not received any technical analysis or evaluation supporting the increased hold time of 1 hour for non-insulated components.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	(i.e., the reactor must be in a non-critical state), except during refueling outages in which the ASME Section XI Category B–P pressure test has already been performed, or at the end of mid-cycle maintenance outages fourteen (14) days or less in duration. (2) In lieu of the test condition holding time of IWA–5213(b)(2), after pressurization to test conditions, and before the visual examinations commence, the holding time shall be 1 hour for non-insulated components.	(1) The use of nuclear heat to conduct the BWR Class 1 system leakage test is prohibited (i.e., the reactor must be in a non-critical state), except during refueling outages in which the ASME Section XI Category B–P pressure test has already been performed, or at the end of mid-cycle maintenance outages fourteen (14) days or less in duration. (2) In lieu of the test condition holding time of IWA–5213(b)(2), after pressurization to test conditions, and before the visual examinations commence, the holding time shall be 1 hour for non-insulated components.	
§50.55a(b)(2)(xxi)(B)	(B) *Table IWB–2500–1 examination.* Use of the provisions of IWB–2500(f) and (g) and Table IWB–2500–1 Notes 6 and 7 of the 2017 Edition of ASME Section XI for examination of Examination Category B–D Item Numbers B3.90 and B3.100 shall be subject to the following conditions: (1) A plant-specific evaluation demonstrating the criteria of IWB–2500(f) are met must be maintained in accordance with IWA–1400(l). (2) The use of the provisions of IWB–2500(f) and Table IWB–2500–1 Note 6 for examination of Examination Category B–D Item Numbers B3.90 is prohibited for plants with renewed licenses in accordance with 10 CFR part 54. (3) The provisions of IWB–2500(g) and Table IWB–2500–1 Notes 6 and 7 for examination of Examination Category B–D Item Numbers B3.90 and B3.100 shall not be used to eliminate the preservice or inservice volumetric examination of plants with a Combined Operating License pursuant to 10 CFR part 52, or a plant that receives its operating license after October 22, 2015.	(B) *Table IWB–2500–1 examination*. Use of the provisions of IWB–2500(f) and (g) and Table IWB–2500–1 Notes 6 and 7 of Section XI, 2017 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section, for examination of Examination Category B–D Item Numbers B3.90 and B3.100 shall be subject to the following conditions: (1) A plant-specific evaluation demonstrating the criteria of IWB– 2500(f) are met must be maintained in accordance with IWA–1400(l). (2) The use of the provisions of IWB–2500(f) and Table IWB–2500–1 Note 6 for examination of Examination Category B–D Item Numbers B3.90 is prohibited for plants with renewed licenses in accordance with 10 CFR part 54. (3) The provisions of IWB–2500(g) and Table IWB–2500–1 Notes 6 and 7 for examination of Examination Category B–D Item Numbers B3.90 and B3.100 shall not be used to eliminate the preservice or inservice volumetric examination of plants with a Combined Operating License pursuant to 10 CFR part 52, or a plant that	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
		receives its operating license after October 22, 2015.	
§50.55a(b)(2)(xxv)	(xxv) *Section XI condition: Mitigation of defects by modification*. Use of the provisions of IWA–4340 shall be subject to the following conditions: (A) *Mitigation of defects by modification: First provision.* The use of the provisions for mitigation of defects by modification in IWA–4340 of Section XI 2001 Edition through the 2010 Addenda, is prohibited. (B) *Mitigation of defects by modification: Second provision.* The provisions for mitigation of defects by modification in IWA–4340 of Section XI 2011 Edition through the 2017 Edition may be used subject to the following conditions: (1) The use of the provisions in IWA 4340 to mitigate crack-like defects or those associated with flow accelerated corrosion are prohibited. (2) The design of a modification that mitigates a defect shall incorporate a loss of material rate either 2 times the actual measured corrosion rate in that pipe location (established based on wall thickness measurements conducted at least twice in two prior consecutive or nonconsecutive refueling outage cycles in the 10 year period prior to installation of the modification), or 4 times the estimated maximum corrosion rate for the piping system. (3) The licensee shall perform a wall thickness examination in the vicinity of the modification and relevant pipe base metal. Except as provided in paragraphs (b)(2)(xxv)(B)(3)(i) and (ii), the examination must be performed during each refueling outage cycle to detect propagation of the defect into the	(xxv) *Section XV Condition: Mitigation of defects by modification*. Use of the provisions of IWA–4340 must be subject to the following conditions: (A) *Mitigation of defects by modification: First person*. The use of the provisions for mitigation of defects by modification in IWA–4340 of Section XI 2001 Edition through the 2010 Addenda, is prohibited. (B) *Mitigation of defects by modification: Second provision*. The provisions for mitigation of defects by modification in IWA–4340 of Section XI, 2011 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section, may be used subject to the following conditions: (1) The use of the provisions in IWA 4340 to mitigate crack-like defects or those associated with flow accelerated corrosion are prohibited. (2) The design of a modification that mitigates a defect must incorporate a loss of material rate either 2 times the actual measured corrosion rate, which must be established based on wall thickness measurements conducted at least twice, in that pipe location or another location with similar corrosion conditions, similar flow characteristics, and the same piping configuration (e.g., straight run of pipe, elbow, tee) as the encapsulated area, or 4 times the estimated maximum corrosion rate for the piping system. (3) The licensee must perform a wall thickness examination in the vicinity of the modification and relevant pipe base metal at half its expected life or, if the modification has an	*ASME provides the following comments on the proposed changes to §50.55a(b)(2)(xxv):* 1. *ASME notes that there are two typographical errors in the proposed revision to this condition. In §50.55a(b)(2)(xxv), "Section XV Condition" should be changed to "Section XI Condition", and in 50.55a(b)(2)(xxv)(A), "First person" should be changed to "First provision".* 2. *ASME supports the proposed change to §50.55a(b)(2)(xxv)(B)(2) to clarify that corrosion rates may be determined at alternative locations.* 3. *ASME recommends that the re-examination required by §50.55a(b)(2)(xxv)(B)(3) be changed from "once per interval" to "once every ten years" to clarify that the re-examination need not be performed in the current inspection interval if less than 10 years remain in that inspection interval.* 4. *ASME suggests that §50.55a(b)(2)(xxv)(B)(3)(ii) might be clearer if revised to read as follows:* *(ii) For buried pipe locations where loss of material has occurred due to external corrosion, the modification must be examined at half its expected life or 10 years, whichever is sooner. Alternatively, when the modification has been recoated prior to return to service, the modification may be examined at half its expected life or during the subsequent 10-year inspection interval after installation, whichever is sooner.*

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	material credited for structural integrity of the item unless the examinations in the two refueling outage cycles subsequent to the installation of the modification are capable of validating the projected flaw growth. Where the projected flaw growth has been validated, the modification must be examined at half its expected life or once per interval, whichever is smaller. (i) For buried pipe locations where the loss of material has occurred due to internal corrosion, the refueling outage interval wall thickness examinations may be conducted at a different location in the same system as long as: Wall thickness measurements were conducted at the different location at the same time as installation of the modification; the flow rate is the same or higher at the different location; the piping configuration is the same (e.g., straight run of pipe, elbow, tee), and if pitting occurred at the modification location, but not the different location, wall loss values must be multiplied by four. Where wall loss values are greater than that assumed during the design of the modification, the structural integrity of the modification shall be reanalyzed. Additionally, if the extent of degradation is different (i.e., through wall, percent wall loss plus or minus 25 percent) or the corrosion mechanism (e.g., general, pitting) is not the same at the different location as at the modification location, the modification must be examined at half its expected life or 10 years, whichever is smaller. (ii) For buried pipe locations where loss of material has occurred due to external corrosion, the modification must be examined at half its expected life or 10 years, whichever is smaller.	expected life greater than 19 years, once per interval, and the results must be used to confirm corrosion rates, determine the next inspection date, and confirm the design inputs. (i) For buried pipe locations where the loss of material has occurred due to internal corrosion, the wall thickness examinations may be conducted at a different location in the same system as long as: Wall thickness measurements were conducted at the different location at the same time as installation of the modification; the flow rate is the same or higher at the different location; the piping configuration is the same (e.g., straight run of pipe, elbow, tee); and if pitting occurred at the modification location, but not the different location, wall loss values must be multiplied by four (instead of two) times the actual measured corrosion rate. Where wall loss values are greater than that assumed during the design of the modification, the structural integrity of the modification must be reanalyzed. Additionally, if the extent of degradation is different (i.e., percent wall loss plus or minus 25 percent) or the corrosion mechanism (e.g., general, pitting) is not the same at the different location as at the modification location, the modification must be examined at half its expected life or 10 years, whichever is sooner. (ii) For buried pipe locations where loss of material has occurred due to external corrosion, the modification must be examined at half its expected life or 10 years, whichever is sooner. Alternatively, when the modification has been recoated prior to return to service, the modification may be examined at half its expected life or during the first full 10-year inspection interval after installation, whichever is sooner.	

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§50.55a(b)(2)(xxvi)	(xxvi) *Section XI condition: Pressure testing Class 1, 2, and 3 mechanical joints.* When using the 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, licensees shall pressure test in accordance with IWA–5211(a) mechanical joints in Class 1, 2, and 3 piping and components greater than NPS–1 which are disassembled and reassembled during the performance of a Section XI repair/replacement activity requiring documentation on a Form NIS–2. The system pressure test and NDE examiners shall meet the requirements of the licensee's/applicant's current ISI code of record.	(xxvi) *Section XI condition: Pressure Testing of Class 1, 2, and 3 Mechanical Joints.* Mechanical joints in Class 1, 2, and 3 piping and components greater than NPS–1 which are disassembled and reassembled during the performance of a Section XI repair/ replacement activity requiring documentation on a Form NIS–2 shall be leak tested to ensure leak tightness. The owner shall establish the type of leak test, test medium, test pressure, acceptance criteria that would demonstrate the joint's leak tightness, and the qualifications of the personnel who will perform the leak test.	*ASME supports the NRC's proposal to eliminate the requirement to perform a pressure test and VT-2 examination in accordance with IWA-5211(a) of mechanical connections in Class 1, 2, and 3 piping and components greater than NPS–1 which are disassembled and reassembled during the performance of a Section XI repair/replacement activity requiring documentation on a Form NIS–2. However, ASME continues to believe that this condition, including the proposed change, is unnecessary, based on comments submitted during the previous rulemaking to incorporate by reference the 2017 Edition of the ASME Code, Section XI, and for reasons listed below:* *1. ASME considers the disassembly and reassembly of a mechanical joint to be a maintenance activity that is not subject to Section XI repair/replacement requirements, unless the reassembly involves the installation of replacement pressure retaining parts or components in the mechanical joint, or the activity involves welding or brazing on parts or components in the mechanical joint. ASME also considers the disassembly of a mechanical joint solely to facilitate the performance of a repair/replacement activity that does not affect the mechanical joint to be a maintenance activity. As proposed, Owners could interpret this condition to apply, even if the repair/replacement activity is not being performed on items within the mechanical joint, or if the repair/replacement activity is exempt from pressure testing in accordance with IWA-4540(b). In these cases, ASME believes that there is no technical reason to require Section XI pressure testing and VT-2 examination. Post-maintenance pressure testing performed in accordance with an Owner's procedures should be sufficient to verify that the reassembled mechanical joint is leak-tight.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
			2. In order to comply with the proposed condition, an Owner would be required to document the type of leak test, test medium, test pressure, acceptance criteria, and personnel qualifications for leakage tests that would demonstrate the joint's leak tightness following a repair replacement activity requiring documentation on an NIS-2 form. Currently, this level of detail may not exist in the Owner's procedures for post-maintenance leakage testing, and the addition of these requirements creates an unnecessary burden for the utilities with no corresponding increase in quality or safety. To comply with the proposed condition, an Owner may have to revise their post-maintenance test procedures to include these additional requirements. *3. Owner's quality assurance programs already require verification of leak tightness following maintenance activities, and ASME believes that the leak-tight integrity of mechanical connections can be assured without the proposed condition.* *ASME strongly recommends that this condition be removed from the final rule.* *If the NRC does not accept ASME's recommendation to remove this condition in the final rule, ASME recommends that the NRC consider revising this condition to address the following:* *1. In lieu of specifying that "The owner shall establish the type of leak test, test medium, test pressure, acceptance criteria that would demonstrate the joint's leak tightness, and the qualifications of the personnel who will perform the leak test", ASME recommends that this sentence be deleted, and instead specify that "Leak-testing mechanical joints shall be performed in accordance with IWA-5211(a) in the*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
			2001 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, or in accordance with requirements of the Owner's Quality Assurance Program". This would allow Owners to avoid having to revise their current procedures to implement the revised condition. *2. This condition should not apply to mechanical joints that are disassembled and reassembled during the performance of a repair/replacement activity requiring documentation on an NIS-2 Form if the pressure retaining parts or components in the mechanical joint are not affected by the repair/replacement activity. ASME notes that a pressure test in accordance with IWA-4540 would be required if a repair/replacement activity performed by welding or brazing on pressure retaining parts or components in the mechanical joint is not exempt by IWA-4540(b).*
§50.55a(b)(2)(xxix)	(xxix) *Section XI condition: Nonmandatory Appendix R.* Nonmandatory Appendix R, "Risk-Informed Inspection Requirements for Piping," of Section XI, 2005 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, may not be implemented without prior NRC authorization of the proposed alternative in accordance with paragraph (z) of this section.	(xxix) *Section XI condition: Nonmandatory Appendix R.* (A) Nonmandatory Appendix R, ''Risk- Informed Inspection Requirements for Piping Supplement 1—Risk-Informed Selection Process—Method A,'' of Section XI, 2005 Addenda through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, may not be implemented without prior NRC authorization of the proposed alternative in accordance with paragraph (z) of this section. (B) Nonmandatory Appendix R, ''Risk-Informed Inspection Requirements for Piping, Supplement 2—Risk-Informed Selection Process— Method B'' of Section XI, 2005 Addenda through the 2015 Edition, may not be implemented without prior NRC authorization of the proposed alternative in accordance with paragraph (z) of this section.	*ASME supports the endorsement of Nonmandatory Appendix R, Supplement 2 in the 2017 Edition and appreciates the NRC proposing this change to allow use of Appendix R, Supplement 2 without requiring prior NRC authorization in accordance with §50.55a(z).*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
		(C) Nonmandatory Appendix R, ''Risk-Informed Inspection Requirements for Piping, Supplement 2—Risk-Informed Selection Process— Method B'' of Section XI, 2017 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, may be implemented without prior NRC authorization of the proposed alternative in accordance with paragraph (z) of this section.	
§50.55a(b)(2)(xxxii)	(xxxii) *Section XI condition: Summary report submittal.* When using ASME BPV Code, Section XI, 2010 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, Summary Reports and Owner's Activity Reports described in IWA–6230 must be submitted to the NRC. Preservice inspection reports for examinations prior to commercial service shall be submitted prior to the date of placement of the unit into commercial service. For preservice and inservice examinations performed following placement of the unit into commercial service, reports shall be submitted within 90 calendar days of the completion of each refueling outage.	(xxxii) *Section XI condition: Summary report submittal.* When using ASME BPV Code, Section XI, 2010 Edition through the latest edition and addenda incorporated by reference in paragraph (a)(1)(ii) of this section, Summary Reports and Owner's Activity Reports described in IWA–6230 must be submitted to the NRC. Preservice inspection reports for examinations prior to commercial service must be submitted prior to the date of placement of the unit into commercial service. For preservice and inservice examinations performed following placement of the unit into commercial service, reports must be submitted within 120 calendar days of the completion of each refueling outage.	*ASME supports the proposed change to these administrative requirements, but recommends that the condition not be limited to the 2010 Edition and later editions and addenda. Some U.S. plants may still be using the 2007 Edition with the 2008 Addenda, and ASME would like to see the use of the extended timeframe for submitting the Owner's Activity Reports permitted for those plants, as well as those using the 2010 Edition and later editions and addenda.*
§50.55a(b)(2)(xxxvi)	(xxxvi) *Section XI condition: Fracture toughness of irradiated materials.* When using the 2013 through 2017 Editions of the ASME BPV Code, Section XI, Appendix A paragraph A–4400, the licensee shall obtain NRC approval under paragraph (z) of this section before using irradiated T0 and the associated RTT0 in establishing fracture toughness of irradiated materials.	(xxxvi) *Section XI condition: Fracture toughness of irradiated materials.* When using the 2013 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section of the ASME BPV Code, Section XI, Appendix A paragraph A–4400, the licensee shall obtain NRC approval under paragraph (z) of this section before using irradiated T_0 and the associated RT_{T0} in establishing fracture toughness of irradiated materials.	*ASME has no comments on the proposed change.*
§50.55a(b)(2)(xxxix)	(xxxix) *Section XI condition: Defect Removal.* The use of the provisions for removal of defects by welding or brazing in IWA–4421(c)(1) and	(xxxix) *Section XI condition: Defect Removal.* The use of the provisions for removal of defects by welding or brazing in IWA–4421(c)(1) and IWA–4421(c)(2) of Section XI, 2017 Edition	*ASME has no comments on the proposed change.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	IWA–4421(c)(2) of Section XI, 2017 Edition may be used subject to the following conditions: (A) *Defect removal requirements: First provision.* The provisions of subparagraph IWA–4421(c)(1) shall not be used to contain or isolate a defective area without removal of the defect. (B) *Defect removal requirements: Second provision.* The provisions of subparagraph IWA–4421(c)(2) shall not be used for crack-like defects.	through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section may be used subject to the following conditions: (A) *Defect removal requirements: First provision.* The provisions of subparagraph IWA 4421(c)(1) shall not be used to contain or isolate a defective area without removal of the defect. (B) *Defect removal requirements: Second provision.* The provisions of subparagraph IWA–4421(c)(2) shall not be used for crack-like defects.	
§50.55a(b)(2)(xl)	(xl) *Section XI condition: Prohibitions on use of IWB–3510.4(b).* The use of ASME BPV Code, Section XI, 2017 Edition, Subparagraphs IWB–3510.4(b)(4) and IWB–3510.4(b)(5) is prohibited.	(xl) *Section XI condition: Prohibitions and Restrictions on use of IWB– 3510.4(b), IWC–3510.5(b), Table A– 4200–1, and Table G–2110–1.* The use of Subparagraphs IWB–3510.4(b)(4) and IWB–3510.4(b)(5) of ASME BPV Code, Section XI, 2017 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section is prohibited. The use of ASME BPV Code, Section XI, 2019 Edition, Subparagraphs IWC–3510.5(b)(4) and IWC–3510.5(b)(5), is prohibited. For ASME BPV Code, Section XI, 2019 Edition, Table A–4200–1 and Table G–2110–1, use of Figure A–4200–1 and Figure G–2210–1 to describe the toughness of material SA–533 Type B Class 2 is prohibited without satisfying the requirements of IWB–3510.4(c) or IWC–3510.5(c).	*ASME provides the following comments on the proposed condition:* 1. *ASME does not support the restriction on the use of IWB-3510.4(b)(5) and IWC-3510.5(b)(5) for SA-508 Class 1 material, and recommends that this condition be revised in the final rule so that it does not apply to SA-508 Class 1 material.* 2. *The proposed condition (restriction or prohibition) on SA-533 Type B Class 2 is unnecessary and ASME recommends that this condition be removed in the final rule.* *Information supporting the above comments and recommendations is provided in Enclosure 2.*
§50.55a(b)(2)(xliii)	N/A	(xliii) *Section XI condition: Section XI Condition: Regulatory Submittal Requirements*. Licensees shall submit for NRC review and approval the following analyses: (A) The analytical evaluation determining the effects of an out-of-limit condition on the structural integrity of the Reactor Coolant System, as described in IWB–3720(a);	*ASME has no comments on the proposed conditions.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
		(B) Determination of T_0 and RT_{T0}, as described in Nonmandatory Appendix A, A–4200(c); and (C) Determination of T_0 and RT_{T0}, as described in Nonmandatory Appendix G, G–2110(c).	
§50.55a(b)(3)(iii)	(iii) *OM condition: New reactors*. In addition to complying with the provisions in the ASME OM Code with the conditions specified in paragraph (b)(3) of this section, holders of operating licenses for nuclear power reactors that received construction permits under this part on or after the date 12 months after August 17, 2017, and holders of combined licenses issued under 10 CFR part 52, whose initial fuel loading occurs on or after the date 12 months after August 17, 2017, shall also comply with the following conditions, as applicable: (A) *Power-operated valves*. Licensees shall periodically verify the capability of power-operated valves to perform their design-basis safety functions. (B) *Check valves*. Licensees must perform bi-directional testing of check valves within the IST program where practicable. (C) *Flow-induced vibration*. Licensees shall monitor flow-induced vibration from hydrodynamic loads and acoustic resonance during preservice testing or inservice testing to identify potential adverse flow effects on components within the scope of the IST program. (D) *High risk non-safety systems*. Licensees shall assess the operational readiness of pumps, valves, and dynamic restraints within the scope of the Regulatory Treatment of Non-Safety Systems for applicable reactor designs.	(iii) *OM condition: New reactors*. In addition to complying with the provisions in the ASME OM Code with the conditions specified in paragraph (b)(3) of this section, holders of operating licenses for nuclear power reactors that received construction permits under this part on or after August 17, 2018, and holders of combined licenses issued under 10 CFR part 52, whose initial fuel loading occurs on or after August 17, 2018, must also comply with the following conditions, as applicable: (A) *Power-operated valves.* Licensees must periodically verify the capability of power-operated valves to perform their design-basis safety functions. (B) *Check valves.* Licensees must perform bi-directional testing of check valves within the IST program where practicable. (C) *Flow-induced vibration.* Licensees must monitor flow-induced vibration from hydrodynamic loads and acoustic resonance during preservice testing or inservice testing to identify potential adverse flow effects on components within the scope of the IST program. (D) *High risk non-safety systems.* Licensees must assess the operational readiness of pumps, valves, and dynamic restraints within the scope of the Regulatory Treatment of Non-Safety Systems for applicable reactor designs.	*ASME has no comments on the proposed changes to these conditions.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
§50.55a(b)(3)(viii)	(viii) *OM condition: Subsection ISTE*. Licensees may not implement the risk-informed approach for inservice testing (IST) of pumps and valves specified in Subsection ISTE, "Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants," in the ASME OM Code, 2009 Edition through the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, without first obtaining NRC authorization to use Subsection ISTE as an alternative to the applicable IST requirements in the ASME OM Code, pursuant to paragraph (z) of this section.	(viii) *OM condition: Subsection ISTE.* Licensees may not implement the risk-informed approach for inservice testing (IST) of pumps and valves specified in Subsection ISTE, ‘‘Risk-Informed Inservice Testing of Components in Light-Water Reactor Nuclear Power Plants,’’ in the ASME OM Code, 2009 Edition through the 2017 Edition, without first obtaining NRC authorization to use Subsection ISTE as an alternative to the applicable IST requirements in the ASME OM Code, pursuant to paragraph (z) of this section.	*ASME has no comments on the proposed change to this condition.*
§50.55a(b)(3)(ix)	(ix) *OM condition: Subsection ISTF.* Licensees applying Subsection ISTF, 2012 Edition or 2015 Edition, shall satisfy the requirements of Mandatory Appendix V, "Pump Periodic Verification Test Program," of the ASME OM Code in that edition. Subsection ISTF, 2011 Addenda, is prohibited for use.	(ix) *OM condition: Subsection ISTF.* Licensees applying Subsection ISTF, 2012 Edition must satisfy the requirements of Mandatory Appendix V, ‘‘Pump Periodic Verification Test Program,’’ of the ASME OM Code in that edition.	*ASME has no comments on the proposed change to this condition.*
§50.55a(b)(3)(xi)	(xi) *OM condition: Valve Position Indication*. When implementing paragraph ISTC–3700, "Position Verification Testing," in the ASME OM Code, 2012 Edition through the latest edition and addenda of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, licensees shall verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC including its mandatory appendices and their verification methods and frequencies.	(xi) *OM condition: Valve Position Indication.* When implementing paragraph ISTC–3700, ‘‘Position Verification Testing,’’ in the ASME OM Code, 2012 Edition through the latest edition of the ASME OM Code incorporated by reference in paragraph (a)(1)(iv) of this section, licensees must verify that valve operation is accurately indicated by supplementing valve position indicating lights with other indications, such as flow meters or other suitable instrumentation to provide assurance of proper obturator position for valves with remote position indication within the scope of Subsection ISTC including its mandatory appendices and their verification methods and frequencies. For valves not susceptible to stem-disk separation, the position verification testing specified in paragraph ISTC–3700 may be performed on a 10-year interval	*ASME supports the relaxation of this condition for valves that are not susceptible to stem-disk separation.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
		where the licensee documents a justification, which is made available for NRC review, demonstrating that the stem-disk connection is not susceptible to separation based on the internal design and evaluation of the stem-disk connection using plant-specific and industry operating experience and vendor recommendations.	
§50.55a(f)(4)	(4*) Inservice testing standards requirement for operating plants.* Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the inservice test requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in paragraphs (f)(2) and (3) of this section and that are incorporated by reference in paragraph (a)(1)(iv) of this section, to the extent practical within the limitations of design, geometry, and materials of construction of the components. The inservice test requirements for pumps and valves that are within the scope of the ASME OM Code but are not classified as ASME BPV Code Class 1, Class 2, or Class 3 may be satisfied as an augmented IST program in accordance with paragraph (f)(6)(ii) of this section without requesting relief under paragraph (f)(5) of this section or alternatives under paragraph (z) of this section. This use of an augmented IST program may be acceptable provided the basis for deviations from the ASME OM Code, as incorporated by reference in this section, demonstrates an acceptable level of quality and safety, or that implementing the Code provisions would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, where documented and available for NRC review.	(4) *Inservice testing standards requirement for operating plants.* Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, pumps and valves that are within the scope of the ASME OM Code must meet the inservice test requirements (except design and access provisions) set forth in the ASME OM Code and addenda that become effective subsequent to editions and addenda specified in paragraphs (f)(2) and (3) of this section and that are incorporated by reference in paragraph (a)(1)(iv) of this section, to the extent practical within the limitations of design, geometry, and materials of construction of the components. The inservice test requirements for pumps and valves that are within the scope of the ASME OM Code but are not classified as ASME BPV Code Class 1, Class 2, or Class 3 may be satisfied as an augmented IST program in accordance with paragraph (f)(6)(ii) of this section. This use of an augmented IST program may be acceptable provided the basis for deviations from the ASME OM Code, as incorporated by reference in this section, demonstrates an acceptable level of quality and safety, or that implementing the Code provisions would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety, where documented and available for NRC review. When using the 2006 Addenda or later of the ASME BPV Code, Section XI, the inservice examination, testing, and service life monitoring requirements for	*ASME believes that the §50.55a(f) requirements for snubbers has been confusing to Owners, so the proposed change may help clarify these requirements. ASME questions whether the conditions specified in §50.55a(b)(3)(v) are still needed as a result of the proposed changes to §50.55a(f)(4) and §50.55a(g)(4).* *ASME also suggests that the reference to (b)(3)(v) in the last sentence of this condition be changed to (b)(3)(v)(A) for clarity.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
		dynamic restraints (snubbers) must meet the requirements set forth in the applicable ASME OM Code as specified in paragraph (b)(3)(v)(B) of this section. When using the 2005 Addenda or earlier edition or addenda of the ASME BPV Code, Section XI, the inservice examination, testing, and service life monitoring requirements for dynamic restraints (snubbers) must meet the requirements set forth in either the applicable ASME OM Code or ASME BPV Code, Section XI as specified in paragraph (b)(3)(v) of this section.	
§50.55a(f)(7)	N/A	(7) *Inservice testing reporting requirements.* Inservice Testing Program Test and Examination Plans (IST Plans) for pumps, valves, and dynamic restraints (snubbers) prepared to meet the requirements of the ASME OM Code must be submitted to the NRC as specified in § 50.4. IST Plans must be submitted within 90 days of their implementation for the applicable 120- month IST Program interval. IST Plan revisions must be submitted when the final safety analysis report for the applicable nuclear power plant is updated. Electronic submission is preferred.	*ASME has no comment on the proposed administrative condition.*
§50.55a(g)(4)	(4) *Inservice inspection standards requirement for operating plants*. Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions and addenda of the ASME BPV Code (or ASME OM Code for snubber examination and testing) that become effective subsequent to editions specified in paragraphs (g)(2) and (3) of this section and that are incorporated by reference in paragraph (a)(1)(ii) or (iv) for snubber examination and testing of this section, to the extent practical within the limitations of design,	(4) *Inservice inspection standards requirement for operating plants*. Throughout the service life of a boiling or pressurized water-cooled nuclear power facility, components (including supports) that are classified as ASME Code Class 1, Class 2, and Class 3 must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of editions and addenda of the ASME BPV Code that become effective subsequent to editions specified in paragraphs (g)(2) and (3) of this section and that are incorporated by reference in paragraph (a)(1)(ii) or (iv) of this section for snubber examination and testing of this section, to the extent practical within the limitations of design, geometry, and materials of construction of the components. Components	*ASME believes that the §50.55a(g) requirements for snubbers has been confusing to Owners, so the proposed change may help clarify these requirements.*

§50.55a Paragraph	Existing §50.55a Regulations (as of 03/26/2021)	Proposed Changes to §50.55a Regulations	ASME Comments on §50.55a Regulations - Existing and Proposed Changes
	geometry, and materials of construction of the components. Components that are classified as Class MC pressure retaining components and their integral attachments, and components that are classified as Class CC pressure retaining components and their integral attachments, must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of the ASME BPV Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section and the conditions listed in paragraphs (b)(2)(viii) and (ix) of this section, to the extent practical within the limitation of design, geometry, and materials of construction of the components.	that are classified as Class MC pressure retaining components and their integral attachments, and components that are classified as Class CC pressure retaining components and their integral attachments, must meet the requirements, except design and access provisions and preservice examination requirements, set forth in Section XI of the ASME BPV Code and addenda that are incorporated by reference in paragraph (a)(1)(ii) of this section subject to the condition listed in paragraph (b)(2)(vi) of this section and the conditions listed in paragraphs (b)(2)(viii) and (ix) of this section, to the extent practical within the limitation of design, geometry, and materials of construction of the components. When using the 2006 Addenda or later of the ASME BPV Code, Section XI, the inservice examination, testing, and service life monitoring requirements for dynamic restraints (snubbers) must meet the requirements set forth in the applicable ASME OM Code as specified in paragraph (b)(3)(v)(B) of this section. When using the 2005 Addenda or earlier edition or addenda of the ASME BPV Code, Section XI, the inservice examination, testing, and service life monitoring requirements for dynamic restraints (snubbers) must meet the requirements set forth in either the applicable ASME OM Code or ASME BPV Code, Section XI as specified in paragraph (b)(3)(v) of this section.	

ASME Section XI Working Group on Operating Plant Criteria Comments to proposed Section XI condition: "Prohibitions and Restrictions on use of IWB-3510.4(b), IWC-3510.5(b), Table A-4200-1, and Table G-2110-1"

Proposed Condition §50.55a(b)(2)(xl):

> (xl) *Section XI condition: Prohibitions and Restrictions on use of IWB–3510.4(b), IWC–3510.5(b), Table A–4200–1, and Table G–2110–1.* The use of Subparagraphs IWB–3510.4(b)(4) and IWB–3510.4(b)(5) of ASME BPV Code, Section XI, 2017 Edition through the latest edition incorporated by reference in paragraph (a)(1)(ii) of this section is prohibited. The use of ASME BPV Code, Section XI, 2019 Edition, Subparagraphs IWC–3510.5(b)(4) and IWC–3510.5(b)(5), is prohibited. For ASME BPV Code, Section XI, 2019 Edition, Table A–4200–1 and Table G–2110–1, use of Figure A–4200–1 and Figure G–2210–1 to describe the toughness of material SA–533 Type B Class 2 is prohibited without satisfying the requirements of IWB–3510.4(c) or IWC–3510.5(c).

Per the 2019-2020 Code Editions Proposed Rule, (see Federal Register/Vol. 86, No.57/Friday, March 26, 2021, *https://www.federalregister.gov/documents/2021/03/26/2021-06085/american-society-of-mechanical-engineers-2019-2020-code-editions*), the above condition is placed on ASME Section XI IWB–3510.4(b), IWC–3510.5(b), Table A–4200–1, and Table G–2110–1 in the 2017 to latest Edition of ASME Code, Section XI.

Two grades of ferritic steels are affected by the above condition:

- SA-508 Class 1, which is listed in IWB-3510.4(b)(5) of 2017 and 2019 editions, and in IWC-3510.5(b)(5) of 2019 edition.
- SA-533 Type B Class 2 (former designation SA-533 Grade B Class 2), which is listed in IWB-3510.4(b)(4) of 2017 and 2019 editions, in IWC-3510.5(b)(4) of 2019 edition, and in Table A-4200-1 and Table G-2110-1 of 2019 edition.

Comment on proposed condition on SA-508 Class 1

SA-508 Class 1 designation was changed to SA-508 Grade 1 during the 1990s. SA-508 Class 1 has a specified minimum yield strength (YS) at room temperature of 36 ksi as provided in ASME Section II Part A and Part D. Because its specified minimum YS does not exceed 50 ksi, SA-508 Class 1 is among the permitted materials by IWB-3510.4(a) and IWC-3510.5(a). Furthermore, SA-508 Class 1 has always been permitted by Section XI Appendix G-2110(a) to use the minimum curve in Figure G-2210-1 since Section XI Appendix G was first adopted in 1987. Note, SA-508 Class 1 is listed as "SA-508-1" in G-2110(a), and the minimum curve of Figure G-2210-1 was changed from K_{Ia} to K_{Ic} in 1999.

As a background, IWB-3510.4(b)(5) and IWC-3510.5(b)(5) were provided in those paragraphs for information purposes only, and for ease of use to the Code users. The long-term goal of the IWB-3510.4 and IWC-3510.5 paragraphs were to identify commonly used ferritic materials in the nuclear industry when applying the Acceptance Standards in IWB-3500. It should be noted, neither ASME Section XI nor

10CFR50 Appendix G requires fracture-mechanics test data of ferritic steels with specified minimum YS not higher than 50 ksi (including SA-508 Class 1).

In light of the above, the proposed condition (restriction or prohibition) on IWB-3510.4(b)(5) and IWC-3510.5(b)(5) should be removed for SA-508 Class 1.

Comment on proposed condition SA-533 Type B Class 2

Prior to the 2019 edition, Section XI G-2110(b) requires fracture-mechanics test data for materials with specified minimum YS between 50 and 90 ksi before the lower-bound minimum K_{Ic} curve in Figure G-2210-1 can be used. The minimum K_{Ic} curve is identical in Figure A-4200-1 and Figure G-2210-1.

SA-533 Type B Class 2 has a specified minimum YS of 70 ksi; therefore, fracture-mechanics test data were required by Section XI Appendix G-2110(b) prior to the 2019 edition. The fracture-mechanics test data requirement of G-2110(b) is also imposed by 10CFR50 Appendix G. The 2019 edition of Section XI Appendix G-2110(b) and Code Case N-890 exempted the following four grades of ferritic steels with specified minimum YS of 65 or 70 ksi:

- SA-508 Grade 2 Class 2 (former designation SA-508 Class 2A)
- SA-508 Grade 3 Class 2 (former designation SA-508 Class 3A)
- SA-533 Type A Class 2 (former designation SA-533 Grade A Class 2)
- SA-533 Type B Class 2 (former designation SA-533 Grade B Class 2)

Per the Proposed Rule for Approval of ASME Code Cases, 86 FR 7820, NRC-2017-0025, (https://www.federalregister.gov/documents/2021/02/02/2021-00890/approval-of-american-society-of-mechanical-engineers-code-cases), the Staff stated that the condition on SA-533 Type B Class 2 material in Code Case N-890 was because:

> "SA-533 Type B, Class 2 materials, the NRC observed that in the technical basis document, there is no fracture toughness data associated with the weld and heat affected zone to support exclusion of the fracture toughness testing requirements for these materials"

The technical basis including supporting fracture-mechanics test data was presented in PVP2019-93988 "Technical Basis for Expansion of ASME BPVC Section XI, K_{Ic} Curve Applicability." Of the four grades of ferritic steels, only SA-533 Type B Class 2 will be restricted or prohibited by the proposed rules, due to a lack of fracture-mechanics test data for weld and HAZ.

The following fracture-mechanics test data for SA-533 Type B Class 2 were not included in PVP2019-93988 because they were uncovered after the paper was already accepted for publication:

- J.R. Hawthorne and T.R. Mager, "Relationship Between Charpy V and Fracture Mechanics K_{Ic}, Assessments of A533-B Class 2 Pressure Vessel Steel," Fracture Toughness, Proceedings of the 1971 National Symposium on Fracture Mechanics, Part II, ASTM STP 514, 1972, pp. 151-263
- K. Hayashi, et al., "High Performance Steel Plates for Tanks and Pressure Vessels - High Strength Steel Plates with Excellent Weldability and Superior Toughness for Energy Industry," JFE 技報No. 5, （2004年8 月）p. 56–62 [JEF Technical Report No 5, p. 56-62, August 2004]

Hawthorne, 1972

The testing was performed by Naval Research Laboratory and Westinghouse. The test material was removed from a 6-3/8"-thick plate per ASTM A-533 Type B Class 2. ASTM A-533 Type B Class 2 is identical to SA-533 Type B Class 2. Table 1 lists the chemical composition and unirradiated room-temperature tensile property, which met SA-533 Type B Class 2 requirements.

Figure 1 plots the unirradiated K_{Ic} data assuming RT-NDT = 0°F. The unirradiated T-NDT was 0°F; RT-NDT was not reported because RT-NDT was first adopted by Section III, NB-2300 in 1973. Judging from the unirradiated Charpy curve, the unirradiated RT-NDT per NB-2300 definition may be higher than T-

NDT. If RT-NDT were higher than 0°F, the plotted K_{Ic} test data in Figure 1 would shift toward the left, resulting in higher margin against the minimum K_{Ic} curve than shown in Figure 1. Therefore, the K_{Ic} test data exceeded the minimum K_{Ic} curve in Figure G-2210-1 and Figure A-4200-1.

Hayashi, 2004

The testing was performed by JEF Steel in Japan. The test material was removed from a 120-mm-thick (4.7”-thick) plate of Japanese SQV2B steel, which is equivalent to ASME SA-533 Type B Class 2. Table 2 lists the chemical composition and room-temperature tensile property, which met SA-533 Type B Class 2 requirements.

Figure 2 plots the K_{Ic} and K_{Id} test data. The RT-NDT was -33°C (-27°F). Figure 2 shows that the K_{Ic} test data exceeded the minimum K_{Ic} curve in Figure G-2210-1 and Figure A-4200-1. The K_{Ic} test data were significantly above the K_{Id} test data, and even the K_{Id} test data met the minimum K_{Ic} curve.

Discussion

The above test data for SA-533 Type B Class 2 were not included in PVP2019-93988; they provide additional support to the PVP2019-93988 conclusion that the four grades of ferritic steels can be considered as one group for the applicability of the minimum K_{Ic} curve in Section XI Appendix A and Appendix G. In light of the additional test data, the proposed condition (restriction or prohibition) on SA-533 Type B Class 2 is unnecessary.

Table 1, ASTM A-533 Type B Class 2 [Hawthorne, 1972]

Composition	**SA-533 Type B (Class 1 and 2)**	**A533B Class 2, Hawthorne-1972**
C	0.25 max	0.24
Mn	1.15 – 1.50	1.27
P	0.025 max	0.008
S	0.025 max	0.015
Si	0.15 – 0.40	0.19
Ni	0.40 – 0.70	0.53
Cr	Not specified	0.14
Mo	0.45 – 0.60	0.48
Cu	Not specified	0.09
V	Not specified	0.02
Al	Not specified	0.031
Room Temperature Tension	**SA-533 Type B Class 2**	**A533B Class 2, Hawthorne-1972**
Yield Strength	70 ksi min	74.2 ksi 75.6 ksi
Tensile Strength	90 – 115 ksi	94.2 ksi 94.5 ksi

Table 2, SQV2B [Hayashi, 2004]

Composition	**SA-533 Type B (Class 1 and 2)**	**SQV2B, Hayashi-2004**
C	0.25 max	0.17
Mn	1.15 – 1.50	1.44
P	0.025 max	0.005
S	0.025 max	0.001
Si	0.15 – 0.40	0.25
Ni	0.40 – 0.70	0.66
Cr	Not specified	0.13
Mo	0.45 – 0.60	0.55
Room Temperature Tension	**SA-533 Type B Class 2**	**SQV2B, Hayashi-2004**
Yield Strength	70 ksi min	75 to 79 ksi
Tensile Strength	90 – 115 ksi	93 to 98 ksi

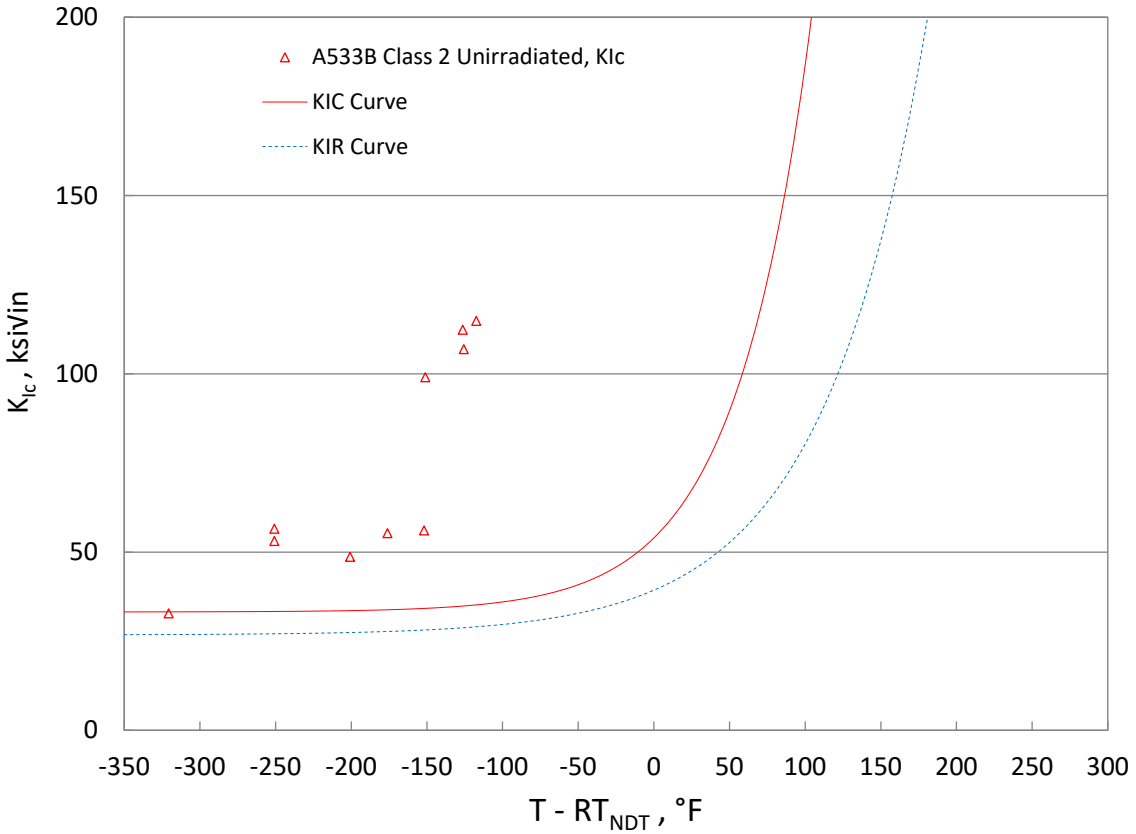

Figure 1, K_{Ic} vs T-RT_{NDT} for ASTM A-533 Type B Class 2 [Hawthorne, 1972]

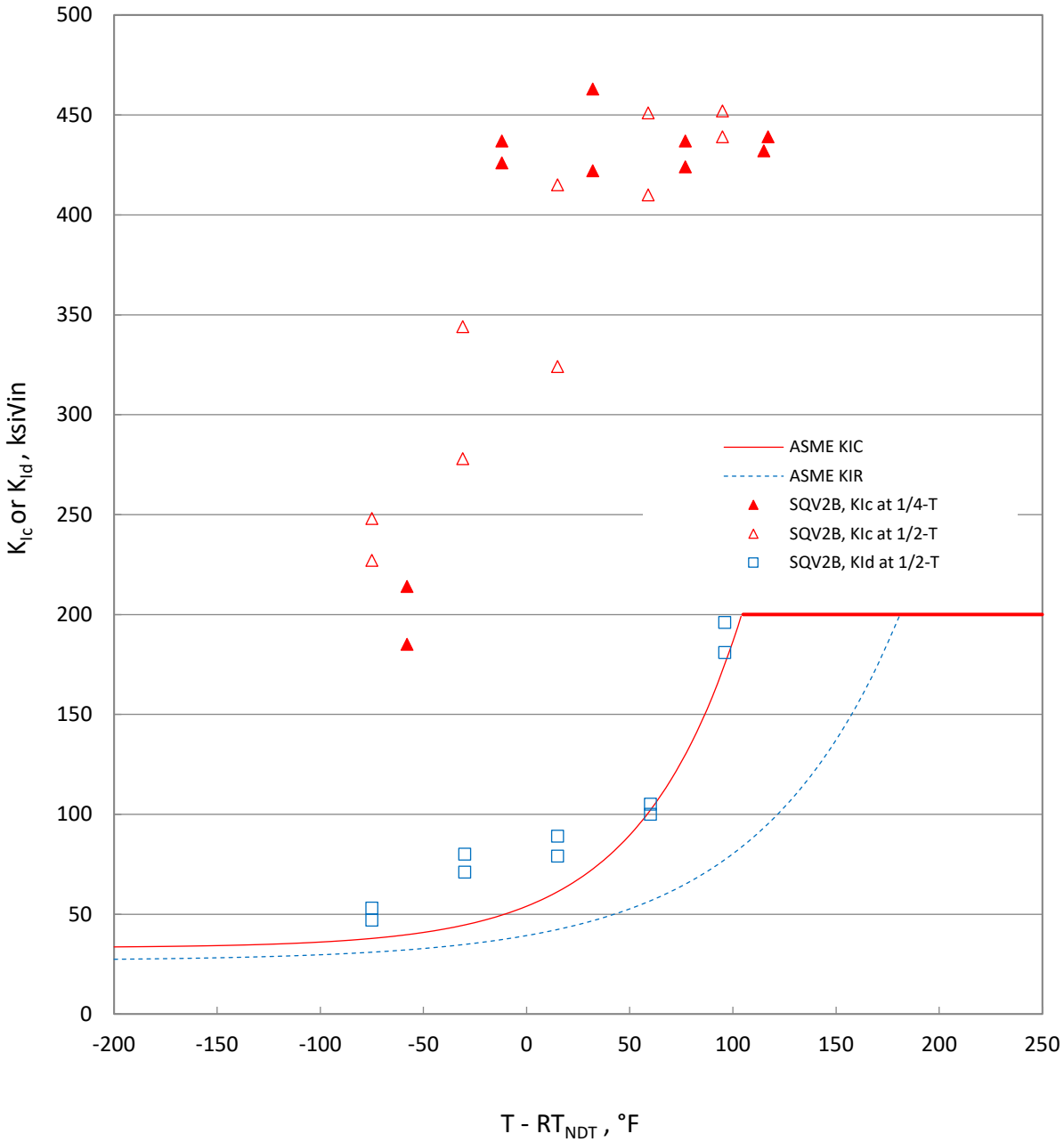

Figure 2, K_{Ic} and K_{Id} vs T-RT_{NDT} for SQV2B [Hayashi, 2004]

Code Interpretation on ASME Section III Appendix G-2110 (b) requirements

The original technical basis for the ASME IWB-3510.4(b), was based on data presented in PVP2010-25214, “Facture Toughness of Pressure Bo0undary Steels with Higher Yield Strength,” by Gupta, Hoffman, Hamilton, DeLose, July 2010.

As discussed in PVP2010-25214, the authors submitted an ASME Section III Inquiry in November 2008 on the amount of testing data required per G-2110(b) for similar materials with minimum specified yield strength greater than 50 ksi. The ASME Section III Committee provided the interpretation (III-1-07-47, File 08-1636) that the ASME Section III Appendix G-2110(b) requirements (same as Section XI G-2110(b)) apply to a group of like materials rather than to each specific grade of material. Based on this inquiry (as shown below), the fracture toughness testing data for SA-533 and SA-508 Class 2 materials can be used as a combined set to determine that the K_{Ic} curve can be used to bound similar types of base materials, including HAZ and weld metals.

Therefore, since the Staff has already approved the use of SA-508 Grade 2, Class 2, SA-508 Grade 3, Class 2, and SA-533 Type A Class 2 in ASME Section XI IWB-3510.4(b), then per the Code Interpretation III-1-07-47 (shown below), SA-533 Type B Class 2 is also an acceptable material for use as part of IWB-3510.4(b) and IWC-3510.5(b)), based on the combined set of fracture toughness data for (65 ksi and 70 ksi) materials of SA-533 and SA-508, which also include HAZ and weld metals, as provided in PVP2010-25214.

Subject:	Section III, Division 1, Nonmandatory Appendix G, Fracture Toughness Criteria for Protection Against Failure, Para. G-2110(b)
Date Issued:	11/24/2008
Record Number:	08-1636
Interpretation Number:	III-1-07-47
Question:	Does a combined set of fracture toughness data for SA-533 plate and SA-508 forging Class 2 materials, with minimum specified yield strengths greater than 50 ksi (350 MPa) but not exceeding 90 ksi (620 MPa), satisfy the requirements of G-2110(b), when three or more heats of base metal test data are available for plates and for forgings and at least three sets of test data are available on HAZ and weld metal for each specification for one or more grades of the plate and forging materials?
Reply:	Yes.