



NUCLEAR ENERGY INSTITUTE

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PROPOSED RULE 50
(69FR 00879)

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

March 22, 2004 (4:15PM)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

ATTENTION: Rulemaking and Adjudications Staff

SUBJECT: Proposed Rulemaking on 10 CFR 50.55a, Codes and Standards
(69 FR879) RIN 3150-AH24; January 7, 2004
Public Comment

PROJECT NUMBER: 689

NEI's comments on the proposed changes to 10 CFR 50.55a, *Codes and Standards*, are provided as Attachment 1. Attachment 2 contains comments on the current version of this regulation that the NRC may consider to incorporate to improve on the implementation of 10 CFR 50.55a. These comments were developed with input from our utility members.

The NRC proposes to amend §50.55a by reference to the 2001 edition and 2002 and 2003 addenda of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPV Code). The proposed rule adopts the Code through the 2001 edition for Sections III, XI and the Operation and Maintenance Code. However, the proposed rule adopts numerous modifications and limitations to the referenced Code. These comments provide technical bases why some of the proposed limitations or modifications should not be imposed on the cited edition or addenda of the ASME Code or why the proposed limitations or modifications should be revised.

Incorporating NRC Order EA-03-009 into this proposed rulemaking is of particular concern. This Order was issued February 11, 2003, to impose enhanced reactor pressure vessel head inspections at pressurized water reactors (PWR) as a condition of the plant operating license. We believe it is impractical to include this Order in the proposed rulemaking because the Order has already been revised and has the potential to be revised again before the next 10CFR50.55a proposed rulemaking.

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The American Society of Mechanical Engineers (ASME) and the industry through the efforts of the EPRI Materials Reliability Program (MRP) are developing inspection plans for longer term management of stress corrosion cracking of reactor pressure vessel head nozzles. And, a number of plants are replacing the vessel heads. The dynamic nature of this materials degradation issue suggests that incorporating NRC inspection requirements into this rulemaking at this time is unnecessary.

A more general comment concerns the incorporation of implementation dates within select provisions of this regulation. Please refer to the discussion in Enclosure 2.

The NRC use of regulatory guides to establish regulatory positions continues to be troubling. (Refer to June 3 and June 10, 2002, comments on 67 Fed. Reg. 12488) Now that the regulatory guides have been incorporated into this regulation, the NRC is a continuing loop of activity that has, at best, marginal benefit to plant safety. The process continues to be inefficient, ineffective, and burdensome as demonstrated by this proposed rulemaking.

If you have any questions, please contact me at (202) 739-8080; am@nei.org or Heather Malikowski, (202) 739-8129; hmm@nei.org.

Sincerely,



Alexander Marion

Attachment

c: Stephen Tingen

ATTACHMENT 1

TABLE 1 -- COMMENTS ON PROPOSED 10 CFR 50.55A RULE

TABLE 2 -- COMMENTS ON EXISTING REQUIREMENTS OF
10CFR50.55A

TABLE 1 -- COMMENTS ON PROPOSED 10 CFR 50.55A RULE

COMMENT NUMBER	PROPOSED RULE PAGE	10 CFR 50.55A PARAGRAPH	COMMENT	PROPOSED REVISION
1	882	(b)(2)-Footnote 10	Utilities with operating PWR units received a revision to NRC Order EA-03-009, issued February 20, 2004. This proposed rulemaking incorporates the original version of the Order that was dated February 11, 2003. Incorporating the provisions of the Order into the rulemaking as written would put utilities in violation of the rule containing different requirements from what has been imposed as a condition of an operating license. This proposed rulemaking, the fact that the Order was issued in 2003 to establish "interim requirements," and the fact that NRC indicates in this proposed rulemaking that "[in] the near future, the NRC plans to institute rulemaking to incorporate the provisions of the Order into NRC rules and regulations" clearly demonstrate the evolving nature of NRC requirements for reactor vessel head nozzle inspections. Incorporating this Order into the regulation is unnecessary since the Order already imposes conditions on a plant's operating license. Moreover, the flexibility for NRC to issue future revisions to the Order would be severely limited.	Remove (b)(2)- Footnote 10
2	883	(b)(2)(xv)(J)	Paragraph 50.55a(b)(2)(xv)(J) references both N-522 and N-552. The current final rule only references N-552.	Correct the language to indicate that Code Case N-552 is impacted by this rulemaking, not N-522.
3	883	(b)(2)(xx)	Paragraph 50.55a(b)(2)(xx) title calls out "10 CFR 50.55a(b)(xx)" instead of "10 CFR 50.55a(b)(2)(xx)".	Call out paragraph "10 CFR 50.55a(b)(2)(xx)"
4	883	(b)(2)(xxii)	The rulemaking would allow any NDE method (but UT) as an alternative to a surface examination (PT). If the intent is to disallow ultrasonic examination as a substitute for a surface examination, then an alternative wording is needed. It appears that the NRC promotes the use of a performance based demonstration for ultrasonic examination such as that discussed in Appendix VIII.	Add the underlined text below so 50.55a(b)(2)(xxii) reads as follows: The use of the provisions in IWA-2220, "Surface Examination," of Section XI, 2001 Edition through the latest edition and addenda incorporated by reference in paragraph (b)(2) of this section, that allow the use of an ultrasonic examination method, is prohibited <u>unless the ultrasonic examination method has been demonstrated by a successful performance demonstration.</u>

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5	883	(b)(2)(xxiii)	<p>The proposed modification in 50.55a(b)(2)(xxiii) refers to the changes in IWA-4461.4 that were made in the 2001 Edition. These changes were made to allow an Owner to perform a documented evaluation to determine whether elimination of mechanical processing is acceptable when the mechanical processing is deemed impractical due to field conditions (e.g., dose, accessibility, etc).</p> <p>Prior to this 2001 Edition Code change, IWA-4460, as approved for use in 50.55a, allowed qualification testing as an option in lieu of mechanical grinding or machining following thermal processes. This 2001 Edition Code change added another option to allow performance of an application-specific evaluation to determine if elimination of mechanical processing was acceptable. IWA-4461.4 currently permits elimination of mechanical processing provided that either the qualification testing of IWA-4461.4.1 or the evaluation of IWA-4461.4.2 is performed.</p> <p>IWA-4461.4.2 specifies the adverse effects that are to be considered in the evaluation and requires this evaluation be documented and included in the Repair/Replacement Plan. The NRC's proposed modification would require that tests as well as the analysis to address each of the adverse effects listed in IWA-4461.4.2 must be performed, whenever a thermally cut surface is not mechanically processed.</p> <p>This is an unreasonable imposition. First, when qualification testing is performed in accordance with IWA-4461.4.1, then the evaluation provisions of IWA-4461.4.2 are not needed or used but the proposed modification would impose IWA-4461.4.2 in addition to the qualification testing.</p> <p>Additionally, based on the application specific evaluation, not all of the adverse effects listed would be necessarily be applicable and this would be required to be documented in the evaluation.</p>	<p>The proposed modification 50.55a(b)(2)(xxiii) should be deleted.</p>

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6	884	(b)(2)(xxv)	<p>The proposed rule prohibits the use of the provisions in IWA-4340 when using the 2001 Edition and the 2002 and 2003 Addenda of Section XI. Regretfully, these provisions were added by ASME committee members at the request of NRC staff and included in the 2000 Addenda because the NRC staff wanted to see provisions in Section XI that addressed the long standing industry practice of mitigating defects by performing a modification such that the structural integrity of the item no longer relied on the defective area. An example of such a modification would be an encapsulation of the defective area, which provides a new pressure boundary.</p> <p>Such modifications have always been allowed by performing what used to be called a Section XI "replacement", which included modifications and is now called a repair/replacement activity. The Section XI requirements invoke the Construction Code rules for materials and for designing, fabricating and examining the modification. Additionally, Section XI specifies the requirements for installing, testing and inspecting the modification.</p> <p>Now that ASME has added the provisions, the NRC appears to be using this to eliminate this long standing practice. In general the NRC appears to be expecting ASME to identify every conceivable modification and include all the specifics for each modification. However, this isn't done in constructing a new plant and isn't necessary for modifying an existing plant.</p> <p>The first concern stated in the Supplementary Information is that the scope of the activity envisioned by this provision is not clear and the NRC is unable to determine if the provisions of IWA-4340 would maintain safety and ensure protection of the public health and safety. ASME Codes do not provide details and examples of every configuration that a designer faces in designing a new plant nor for a designer modifying an existing plant. Designs that comply with the provisions of the Codes are acceptable. IWA-4340 is not limited to application nor to specific designs or configurations because the Code rules for materials, design, fabrication, examination, installation,</p>	Delete the proposed modification

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			<p>testing and inspection take the application into account in providing such rules and provide the general configuration requirements for assuring structural integrity. Since these rules must be met for the modification to be acceptable, the concern for the application and with maintaining safety and protecting the public is addressed by the existing Code rules.</p> <p>The second concern is that pressure testing of the modification may not be required for a new welded pressure boundary. Because the new weld makes a new pressure boundary, a Section XI pressure test would be required.</p> <p>The third concern is that the terminology "beyond the limits of the modification" needs to be more specifically defined. Section XI defines the terms flaw and defect and uses these terms with those specific definitions in mind. Therefore, a flaw outside of the modification might be acceptable until it reached the condition of a defect, which makes it unacceptable or a flaw outside of the modification might be acceptable until it violated the design or configuration requirements used in the design of the modification. The specifics depend on the type of degradation and the design of the modification.</p> <p>The fourth concern is that the NRC does not agree with the wording "when practicable" in IWA-4340(c), relating to validation of the projected flaw growth. The configuration of the modification may not allow validation of the projected flaw growth once the modification is installed, which is why such wording was added. Not being able to validate the projected flaw growth was considered in the approval of IWA-4340 and was accepted because the modification must be designed with an intended life that includes a projection of any growth in the defective area. The additional examinations to detect propagation of the flaw beyond the limits of the modification are confirming the adequacy of the original projected growth and assigned intended life of the modification. The intended life must be documented in accordance with IWA-4150(c)(5). If it is not practicable to validate the projected growth itself, the frequency of the</p>	

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			<p>examinations would need to be established based on the knowledge of the projected growth used in the design of the modification and the assigned intended life of the modification.</p> <p>The fifth concern is that the licensee would be responsible for determining the method, frequency and acceptance criteria of the additional examinations to detect propagation of the flaw beyond the limits of the modification. The method, frequency, and acceptance criteria are based on the type of degradation. In addition, if the projected flaw growth can be validated, these examinations are being performed in the defective area that is not credited for any structural integrity so the specifics of these examinations are not critical other than to assure the defective area doesn't grow outside the limits of the modification. In addition, licensees have structural integrity requirements in their Technical Specifications or in their Technical Requirements Manual that require licensees to assure structural integrity is maintained.</p> <p>Therefore, to assure structural integrity, licensees would be required to design the limits of the modification and the intended life of the modification based on a conservative determination of the projected growth of the defect; and establish the method and frequency of examination to confirm that the degradation has not propagated outside the limits of the modification. This is what IWA-4340 requires and it provides adequate assurance of structural integrity and therefore safety.</p> <p>Lastly, the NRC is concerned that the provisions of IWA-4340 could result in inconsistencies in application at different facilities for the same type of mitigating action. While consistency may be desirable in regulating licensees, it should be remembered that plants are not designed with consistency, because the designers have many options in designing to address similar conditions. The same is true of these modifications. The modifications may be different and the examination requirements will depend on the type of modification, the configuration of the component on which the modification has been installed, and the type and growth rate of the degradation. Therefore, safety, not</p>	

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			<p>consistency should be the criterion by which modifications are evaluated.</p> <p>The impact of the prohibition of the use of IWA-4340 on licensees and the NRC will be extensive in terms of cost, diversion of resources, and plant shutdowns. Some of the types of modifications addressed by IWA-4340, such as encapsulations of leaking socket welds on branch connections and MIC degradation (where Code Case N-513 cannot be used), have been designed and installed by most plants within the 72 hour Technical Specification Equipment Outage times. These modifications have been in full compliance with Section XI and its reference to the plant's construction code for the details of the modification and are usually chosen as the corrective action when replacement or excavation and repair welding of the defect cannot be performed within the Technical Specification allowed time. Therefore, these modifications can often be used to avoid a plant shutdown. By prohibiting IWA-4340, plants that want to consider such a modification rather than perform a plant shutdown will be forced to perform the design and either initiate an emergency relief request or a request for enforcement discretion. Both such requests will be a strain on plant and NRC resources. After approval, the modification would still need to be installed. This will likely result in numerous occasions where such activities, approvals, and return of the component to service can not be completed within the allowed 72 hours and a plant will have to shut down. It would not be unusual for a plant to have several such modifications in an operating cycle, so the collective impact on all 103 nuclear plants will be extensive! Given the impact on the industry and that use of such modifications have been allowed for years without prohibition, it is questioned whether the NRC has adequately considered the impact of the prohibition of IWA-4340. The significance of this prohibition on safe plant operation cannot be overstated!</p> <p>Based on the details provided above, the proposed modification 50.55a(b)(2)(xxv) should be deleted.</p>	

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COMMENT NUMBER	PROPOSED RULE PAGE	10 CFR 50.55A PARAGRAPH	COMMENT	PROPOSED REVISION
6	885	(b)(2)(xxvii)	<p>The ASME Code Committee has determined that a VT-2 visual examination may not be able to detect Stress Corrosion Cracking in 17-4 PH and 410 stainless steel installed in borated systems (refer to ASME Technical Basis for Code Case N-616, BC 02-2713). A VT-2 is a leak identification examination for evidence of leakage in pressure retaining components and may not be able to detect the infinitesimal leakage from Stress Corrosion Cracking. The NRC is putting an enormous amount of confidence in an examination that is not meant to detect Stress Corrosion Cracking. A VT-2 examination performed solely to detect Stress Corrosion Cracking cannot provide an acceptable level of quality and safety.</p>	Endorse Code Case N-616.

TABLE 2 -- COMMENTS ON EXISTING REQUIREMENTS OF 10CFR50.55A

10 CFR 50.55A PARAGRAPH	COMMENT	PROPOSED REVISION
N/A	<p>Issue: Incorporating implementation dates for specific provisions of this regulation.</p> <p>Discussion: Refer to NRC Regulatory Issue Summary 2003-01 dealing with examination of dissimilar metal welds, Section XI, Appendix VIII, Supplement 10. Although the NRC concluded that licensees are not in compliance with 50.55a(g)(6)(ii)(C), it is clear that compliance to a date has no safety significance. Therefore, the NRC should use this rulemaking an opportunity to remove similar implementation dates from this and other provisions of 50.55a.</p>	Remove implementation dates from 50.55a(g)(6)(ii)(C).
(g)(4)(ii)	<p>The following is a recommended change to the 120 month ISI Interval update requirement specified in 10CFR50.55a(g)(4)(ii). Although this issue is not addressed in the current draft rule, the NRC should consider incorporating this change into the next draft rulemaking on 10CFR50.55a.</p> <p><u>Background Information:</u></p> <p>A goal of the NRC is to amend 10CFR50.55a more frequently, perhaps as often as every 2 years, so that the regulation can adopt more recent editions and addenda of the ASME Code. Timely NRC endorsement of published versions of the Code is beneficial to utility licensees as end-users of the Code. Unfortunately, more frequent revision to 10CFR50.55a to adopt later editions and addenda of the ASME Code, Section XI may have some unintended consequences that could be burdensome to both the NRC and licensees. For licensees with multiple units at an operating plant, and for licensees with multiple units at multiple operating plants, the 120 month ISI Intervals for the units do not usually coincide because these 120 month intervals are based on the Commercial Operation date <i>for each unit</i>. As a result, it is possible that units at the same operating plant would be required to develop their successive ISI Plans using different Code editions and addenda endorsed by the regulation. In the past, this has not been a significant problem because 10CFR50.55a has not been revised frequently enough to cause this problem. Usually, the</p>	<p>Revise 10CFR50.55a(g)(4)(ii) as shown below with the underlined changes:</p> <p>(ii) Inservice examination of components and system pressure tests conducted during successive 120-month inspection intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section <u>no more than 48</u> months prior to the start of the 120-month inspection interval, subject to the limitations and modifications listed in paragraph (b) of this section.</p>

TABLE 2 -- COMMENTS ON EXISTING REQUIREMENTS OF 10CFR50.55A

	<p>successive 120 month ISI Plans for multiple units at a site could use the same edition and addenda of the Code, provided 10CFR50.55a was not amended near the end of the 120 month intervals for the multiple units. If 10CFR50.55a is amended more frequently, we would expect that more plants would be impacted and would seek relief from 10CFR50.55a(g)(4)(ii) to allow successive 120 month intervals for multiple units to use the same Code edition and addenda. One possible course of action to eliminate this problem would be for licensees to synchronize their ISI Intervals for the multiple units via a Request for Relief in accordance with 10CFR50.55a(a)(3). However, if a licensee chooses to synchronize their ISI Intervals, the 12 month update requirement would still apply, and all of the affected ISI Plans would have to be updated within the 12 month timeframe. The proposed revision to 10CFR50.55a(g)(4)(ii) would allow licensees to know 48 months in advance of the end of their current ISI Interval which Code editions/addenda could be used for the subsequent interval, and would allow for efficient use of resources to update all of the ISI Plans during this 48 month period.</p> <p>The proposed change to 10CFR50.55a(g)(4)(ii) to allow licensees to use the edition and addenda of the Code endorsed in the regulation no more than 48 months prior to the start of the 120-month inspection interval would, in most cases, eliminate this problem. As proposed, licensees would be permitted to use any Code edition and addenda endorsed by the regulation within the 48 month period just prior to the end of their current 120-month interval for their subsequent 120-month interval. This provision would continue to allow licensees to use the most current edition and addenda of the Code that has been endorsed by the NRC. The 48 month window should be acceptable because many licensees are still using editions and addenda of the Code that are more than 10 years old for their current ISI programs. In addition, the NRC would expect to see fewer requests for relief from licensees wanting to use the same Code edition and addenda for multiple units at one or more plants.</p>	
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