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Alexander Marion
DIRECTOR ENGINEERING
NUCLEAR GENERATION DIVISION

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Rules and Directives Branch
Office of Administration
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Comments on Draft Regulatory Guides Adopting ASME Code Cases
(66 Fed. Reg. 67335)

PROJECT NUMBER: 689

Enclosed are the Nuclear Energy Institute's¹ comments on four draft regulatory guides that address adoption of ASME Code Cases that have been reviewed by the NRC. The draft regulatory guides are:

- DG-1089, *Operation and Maintenance Code Case Acceptability, ASME OM Code*
- DG-1090, *Design, Fabrication, and Materials Code Case Acceptability, ASME Section III*
- DG-1091, *Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1*
- DG-1112, *ASME Code Cases Not Approved for Use*

Tables 1 through 4 provide detailed comments on the four draft regulatory guides. The majority of these comments address specific concerns with NRC conditions imposed on individual ASME Code Cases. However, we also have concerns with the NRC process for endorsement of ASME Code Cases.

¹ NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry

Template = ADM-013

E-RIDS = ADM-03
Add = A. BEIANEK (AFB)
W. NORRIS (WEN)



Section B of DG-1089, 1090 and 1091 requires immediate implementation of a later edition of the Code Case once the regulatory guide is referenced in a revision to 10CFR50.55a. This is inconsistent with the existing regulatory requirements (50.55a(f)(4)(ii) and (g)(4)(ii), which permit licensees to defer implementation of new ASME Code criteria until the end of the 10-year interval. The three draft regulatory guides should be revised to be consistent with the existing regulation.

NRC Directive 6.5, *NRC Participation in the Development and Use of Consensus Standards, Section (B)(4)*, permits the NRC staff to impose limitations or modification on consensus standards when "...the consensus standard does not adequately address a specific regulatory issue, the standard is technically incorrect, or it is inconsistent with current regulations." These draft regulatory guides contain NRC positions that impose conditions, limitations or modifications on code cases developed by the ASME consensus standard development process. The NRC recently published for public comment a proposed rule to incorporate these regulatory guides by reference in 10 CFR 50.55a, Codes and Standards (67 Fed. Reg. 12488). In effect, the NRC is developing new regulatory requirements without providing a technical basis for the stated conditions, limitations or modifications. These new NRC positions and regulatory requirements are being imposed via rulemaking without the analysis required by the backfitting rule, 10 CFR 50.109.

The NRC process for review of ASME Code Cases is not consistent with the NRC Strategic Goal for improving efficiencies in the regulatory process. During the past several years the industry and NRC have been working on licensing process improvements under the auspices of the Licensing Action Task Force. We will contact NRC senior management to schedule public meetings to discuss options for improvement in the NRC process for dealing with ASME Code Cases.

If you have questions, please contact me at 202-739-8080, am@nei.org or Kurt Cozens at 202-739-8085, koc@nei.org.

Sincerely,



Alex Marion

KOC/maa
Enclosure

C: Mr. Mike Mayfield, U. S. Nuclear Regulatory Commission
Mr. Wallace E. Norris, U. S. Nuclear Regulatory Commission

TABLE 1: COMMENTS ON DG-1089

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
1.	A	--	<p>In Section A, "Introduction", the OM Code is referred to as the document that contains the rules for inservice testing of pumps and valves. DG-1089 does not reference snubbers, which are also included in the OM Code.</p>	<p>Add snubbers to the scope of DG-1089.</p>
2.	B	--	<p>Section B, "Discussion," third paragraph, second sentence states:</p> <p style="padding-left: 40px;">"The proposed amendment to 10 CFR 50.55a being developed would require that when a licensee initially implements a Code Case, the most recent version of that Code Case as listed in Tables 1 and 2 be implemented. If a Code Case is implemented by a licensee and a later version of the Code Case is incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2 during the licensee's present 120-month IST program interval, that licensee could use either the later version or the previous version (unless a specific limitation or condition is placed on the use of that Code Case, in which case the modification or limitation applies). Licensees who choose to continue use of the Code Case during the subsequent 120-month IST program interval will be required to implement the latest version incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2."</p> <p>The second sentence of this paragraph is inconsistent with the existing regulatory requirements contained in 10 CFR 50.55a (f)(4)(ii) and (g)(4)(ii), which are essentially the same. Section (f)(4)(ii) states:</p> <p style="padding-left: 40px;">(ii) Inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed in paragraph (b) of this section.</p> <p>As worded, the adoption of a revised code case with an NRC imposed condition would require immediate implementation by the licensee. The existing regulations permit a licensee to defer implementation of new ASME Code criteria endorsed by reference in 50.55a until the end of the 10-year interval.</p> <p>This is a change of an existing NRC regulatory position. While the provisions of the 10CFR50.109 backfitting rule do not apply to NRC adoption of new editions of the ASME Code, it does apply to the change of the rule. Adoption of this immediate implementation criterion requires a NRC staff regulatory response to the backfitting rule criteria.</p>	<p>Delete sentence 2 or provide justification for its retention in accordance with the criteria of 10 CFR 50.109.</p>

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
3.	Table 2	OMN-12, Rev. 0	<p>Item 1: Paragraph 4200</p> <p>This condition requires a "mix" of static and dynamic testing. The term "mix" is not defined. A reasonable assumption is that some dynamic testing, i.e., not zero, dynamic testing must be performed. However the condition given in DG-1089 is silent on how an appropriate mix is to be determined nor does it provide guidance on which population should be considered when determining an appropriate mix.</p> <p>A technical basis for the NRC condition to impose dynamic testing is not provided. This is a concern because performance of dynamic tests is a considerable increase in risk to the plant and the personnel performing the test as a result from the high energies involved. Dynamic tests should not be arbitrarily performed.</p>	Delete Condition 1 on OMN-12.
4.	Table 2	OMN-12, Rev. 0	<p>Item 5: Paragraph 5000</p> <p>While this condition endorses a "less rigorous" approach to low safety significant components, implementing this approach is not feasible. Quantifying the operating margin on a safety related valve would necessitate the same level of effort regardless of risk categorization. These processes are rooted in the licensing of quality assurance programs and applying a different standard for valves is not feasible.</p>	Restate this condition, as "any design issue discovered through industry feedback or operating experience that applies to an LSSC must be evaluated for potential effects on that LSSC."
5.	Table 2	OMN-12, Rev. 0	<p>Item 6: Paragraph 5100</p> <p>This condition states that set points for low safety significant components (LSSC) must be based on "direct dynamic test information, a test-based methodology, or grouping with dynamically tested valves." Similar to Item 5, this condition imposes the same level of effort as high safety significant components (HSSC). The set points for safety related LSSCs should be based on the manufacturer's original specification unless industry feedback or operating experience has revealed a design issue related to that LSSC.</p>	Restate this condition, as "any design issue discovered through industry feedback or operating experience that applies to an LSSC must be evaluated for potential effects on that LSSC."
6.	Table 2	OMN-12, Rev. 0	<p>Item 7: Paragraph 5400</p> <p>This condition specifically requires "diagnostic" testing to validate set points on low safety significant components. Typically, "diagnostic" testing refers to acquiring time based digital signatures. Many set points can be validated with a simple calibrated pressure gage and ruler. Imposing "diagnostic" testing for all LSSCs is an unjustified burden.</p>	Delete item 7

TABLE 2: COMMENTS ON DG-1090

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
1.	B		<p>Section B, "Discussion," fourth paragraph states:</p> <p align="center">"The proposed amendment to 10 CFR 50.55a being developed would require that when a licensee initially implements a Code Case, the most recent version of that Code Case as listed in Tables 1 and 2 be implemented. If a Code Case is implemented by a licensee and a later version of the Code Case is incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2 during the licensee's present ISI interval, that licensee will be able to use either the later version or the previous version (unless a specific limitation or condition is placed on the use of that Code Case, in which case the modification or limitation applies). Licensees who choose to continue use of the Code Case during the subsequent ISI interval will be required to implement the latest version incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2."</p> <p>The second sentence of this paragraph is inconsistent with the existing regulatory requirements contained in 10 CFR 50.55a (f)(4)(ii) and (g)(4)(ii), which are essentially the same. Section (f)(4)(ii) states:</p> <p align="center">(ii) Inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed in paragraph (b) of this section.</p> <p>As worded, the adoption of a revised code case with an NRC imposed condition would require immediate implementation by the licensee. The existing regulations permit a licensee to defer implementation of new ASME Code criteria endorsed by reference in 50.55a until the end of the 10-year interval.</p> <p>This is a change of an existing NRC regulatory position. While the provisions of the 10CFR50.109 backfitting rule do not apply to NRC adoption of new editions of the ASME Code, it does apply to the change of the rule. Adoption of this immediate implementation criterion requires a NRC staff regulatory response to the backfitting rule criteria.</p>	<p>Delete sentence 2 or provide justification for its retention in accordance with the criteria of 10 CFR 50.109.</p>

TABLE 3: COMMENTS ON DG-1091

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
1.	B	--	<p>Section B, "Discussion," the third paragraph states:</p> <p style="padding-left: 40px;">"The proposed amendment to 10 CFR 50.55a being developed would require that when a licensee initially implements a Code Case, the most recent version of that Code Case as listed in Tables 1 and 2 be implemented. If a Code Case is implemented by a licensee and a later version of the Code Case is incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2 during the licensee's present ISI interval, that licensee will be able to use either the later version or the previous version (unless a specific limitation or condition is placed on the use of that Code Case, in which case the modification or limitation applies). Licensees who choose to continue use of the Code Case during the subsequent ISI interval will be required to implement the latest version incorporated by reference into 10 CFR 50.55a and listed in Tables 1 and 2."</p> <p>The second sentence of this paragraph is inconsistent with the existing regulatory requirements contained in 10 CFR 50.55a (f)(4)(ii) and (g)(4)(ii), which are essentially the same. Section (f)(4)(ii) states:</p> <p style="padding-left: 40px;">(ii) Inservice tests to verify operational readiness of pumps and valves, whose function is required for safety, conducted during successive 120-month intervals must comply with the requirements of the latest edition and addenda of the Code incorporated by reference in paragraph (b) of this section 12 months prior to the start of the 120-month interval, subject to the limitations and modifications listed in paragraph (b) of this section.</p> <p>As worded, the adoption of a revised code case with an NRC imposed condition would require immediate implementation by the licensee. The existing regulations permit a licensee to defer implementation of new ASME Code criteria endorsed by reference in 50.55a until the end of the 10-year interval.</p> <p>This is a change of an existing NRC regulatory position. While the provisions of the 10CFR50.109 backfitting rule do not apply to NRC adoption of new editions of the ASME Code, it does apply to the change of the rule. Adoption of this immediate implementation criterion requires a NRC staff regulatory response to the backfitting rule criteria.</p>	<p>Delete sentence 2 or provide justification for its retention in accordance with the criteria of 10 CFR 50.109.</p>

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
2.	Table 2	N-416-2	<ul style="list-style-type: none"> • The title shown in Table 2, for this Code Case, is not correct. • Revision 1 was approved for use in RG 1.147 with only one Condition (i.e., additional surface exam of the root pass). The only change from revision 1 to revision 2 was the inclusion of fabrication welds within the scope of this Code Case. The alternative pressure test requirements did not change. Therefore, the DG should be modified to delete the second condition or provide the regulatory basis for adding the second Condition? • The NRC has added a new modification to this edition of N-416. The NRC added a criterion that a 4 hour hold-time should be used. DG-1091 states that this condition is consistent with regulatory established position. • Code case N-416-1 presently requires a system leakage test using the 1992 Edition of ASME XI per paragraph IWA-5000. IWA-5213 requires a 10 minute hold time for non-insulated systems and 4 hours for insulated. Thus this is NOT consistent. • The augmented NDE should ensure that any defects would be found by NDE and not the pressure test. Typically plants would do the repair and leave the insulation off thus using a 10 minute hold time. • The NRC modification is significant and could increase refueling outage durations by 3 hours and 50 minutes. 	<ul style="list-style-type: none"> • The title to read: "Alternative Pressure Test Requirement for Welded Repairs, Fabrication Welds for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding. • Delete the second Condition. • Delete the third Condition.
3.	Table 2	N-513	<p>Code Case N-513 (2)(a) says this cannot be applied to components other than pipe or tube. This note suggests that the code case is unacceptable for use with piping components such as elbows, tees, valve outlets, etc.</p> <p>This condition should be reworded to permit application of the code case to associated piping components.</p>	Revise the condition to permit application of the code case to piping components.
4.	Table 2	N-522	<p>The basis for N-522 was that the subject piping is classified as Class 2 piping only for the purposes of containment penetration and the piping on either side of the penetration boundary valves is non-safety. The piping's only safety-related function is that of containment integrity and the rules of 10 CFR 50 Appendix J should be used in lieu of Section XI for testing these penetrations.</p> <p>Appendix J testing will identify leakage whether it is from the isolation valves or through-wall leakage. If the leakage rate is above specified limits, corrective action is required under Appendix J to correct the leakage. Any through-wall leakage would be identified by process of elimination to find the source of the leakage. Thus, there is no need for Section XI testing of these penetrations and</p>	Delete the N-522 Condition contained in Table 2 of DG-1091.

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			<p>the proposed limitation should be deleted.</p> <p>Therefore, SNC believes the Code Case should be acceptable for use as approved by ASME.</p>	
5.	Table 2	N-532	<p>The draft Code Case conditionally accepts the use of Code Case N-532. It states the conditions as follows, "An Owner's Activity Report Form OAR-1 is required to be prepared and certified upon completion of each refueling outage. The Code Case does not designate a time frame for submission to the regulatory authority. Thus the OAR-1 must be submitted within 90 days."</p> <p>The Code Case states in section 2.0 that, "An OWNER'S ACTIVITY REPORT FORM OAR-1 shall be prepared and certified upon completion of each refueling outage. Each form OAR-1 prepared during an inspection period shall be submitted following the end of the inspection period...."</p> <p>Putting the information together from the draft regulatory guide and the Code Case as above makes it appear that the NRC is establishing, when after a period concludes, that the form OAR-1 must be submitted to the NRC. However, reading the draft regulatory guide by itself one could conclude that the form OAR-1 must be submitted 90 days upon completion of each refueling outage</p>	<p>Revise the criteria to read:</p> <p>"Thus, the OAR-1 must be submitted within 90 days following the end of the inspection period."</p>
6.	Table 2	N-546	<p>VT-2 examination does not require any special knowledge of technical principals underlying its performance, since it is only a straightforward examination for leakage. Unlike other traditional NDE methods, VT-2 is not in the scope of ANSI/ASNT CP-189 and it is unnecessary to qualify and certify VT-2 personnel in accordance with the requirements of CP-189.</p> <p>The abstract of CP-189 states, "This standard applies to personnel whose specific tasks or jobs require appropriate knowledge of the technical principles underlying nondestructive testing (NDT) methods for which they have responsibilities within the scope of their employment." No special skills or technical training are required in order to observe water dripping from a component or bubbles forming on a joint wetted with leak detection solution.</p> <p>The Code Case allows those personnel most familiar with the walkdown of plant systems, such as licensed and non-licensed operators, local leak rate personnel, system engineers, and inspection and examination personnel to perform VT-2 examinations without formal qualification and certification. The experience, training, and vision test requirements within IWA-2316 ensure that the personnel performing VT-2 examinations are qualified while removing barriers that have previously prevented many experienced plant personnel from performing leakage examination walkdowns.</p>	Adopt for use Code Case N-546

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			Therefore, the Code Case should be acceptable for use as approved by ASME.	
7.	Table 2	N-554-2	The proposed Condition concerning manufacturing, procuring, and controlling materials is not applicable to this Code Case. This Code Case is only providing alternative requirements for reconciling technical deference between the original Construction Code and the use of a later Code. This Code Case does not address requirements for manufacturing, procuring, and controlling materials.	Delete the proposed Condition.
8.	Table 2	N-597	The DG permits use of the Code Case, but the NRC imposed condition requires prior NRC review. Requiring prior NRC approval eliminates the purpose of accepting the Code Case in the regulatory guide. Licensee can currently use the Code Case with NRC approval. Therefore, the condition should be modified to define criteria for licensees to use the Code case without prior NRC approval.	<p>Revise the condition to include the following.</p> <ul style="list-style-type: none"> • Future reinspection requirements/intervals shall be determined. • The wall-thinning rate shall be determined to an input into the reinspection interval.
9.	Table 2	N-606- 1	<p>DG-1091 imposes a criterion that requires a VT-1 examination. The criterion requires that the surface be free from contaminants (oil, grease, dirt, etc.) prior to welding. This is a typical practice prior to welding. Therefore, imposition of the VT-1 inspection methodology is inappropriate because the VT-1 only examines the component for material or component service degradation. VT-1 does not have criteria for cleanliness.</p> <p>DG-1091 should be revised to use the criteria provides in AWS D 1.1, 1998 edition, Chapter 3, paragraph 3.2.</p>	Revise the visual inspection criterion in AWS D-1.1, paragraph 3.2.1.
10.	Table 2	N-616	<p>Condition (4) states:</p> <p>“(4) A 4-hour hold time at operating temperature and pressure is required prior to conducting the VT-2 examination. [Note: condition consistent with established regulatory position.”</p> <p>It is not clear which operation temperature and pressure is meant by this condition. A plant can have multiple operating temperatures and pressures, such as that experienced during refuel outages, plant operations, or during a design basis accident.</p> <p>The condition should specifically identify which operating temperature is to be established.</p> <p>Furthermore, this condition does not establish which formal NRC regulatory position has established a precedent. The Condition should identify the technical actions necessary to assure that a specific regulatory requirement is met.</p>	<p>Specifically identify which operating temperature and pressure is to be established</p> <p>Identify the previously established regulatory position and the regulatory requirement that imposition of this criterion is necessary to satisfy.</p>

TABLE 4: COMMENTS ON DG-1112

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
1.	General	--	<p>The development of a separate regulatory guide to document those Code Cases that the NRC has not adopted could result in confusions. Confusion could be avoided if the parent regulatory guides (DG-1089, 1090 and 1091) contained a separate section that listed those applicable Code Cases that are not adopted by the NRC for use.</p>	<p>Do not publish DG-1112 and move the listing of unacceptable code Cases to the appropriate regulatory guide, i.e., DG-1089, DG-1090 or DG-1091</p>
2.	Table 2	N-323-1	<p>Code Case N-323-1 allows surface examination of welded attachments to pressure vessels from one side only rather than from both sides.</p> <p>The DG-1112 summary states that surface examinations from only the accessible side would be of limited value. It also states that volumetric examination of the Class 1 integrally welded attachment from the accessible side (required in the original Code Case) is practical and must be performed to adequately determine the condition of the weld.</p> <p>Code Case N-323 was written because access to the inside surface of the RPV skirt weld is difficult and involves entering a confined high radiation space under the RPV bottom head. In addition, surface preparation for examination of the inside surface geometry is difficult.</p> <p>Considering the hardship in performing ultrasonic examination from the accessible side and considering the unblemished examination history for RPV attachment welds, Code Case N-323 was revised to eliminate the volumetric examination requirement.</p> <p>The summary statement provides an opinion that single-sided surface exams are of limited value. It implies that single-sided surface examinations are not sufficient because they would not identify flaws that would be identified by a single-sided volumetric examination or a surface examination from both sides of the weld.</p> <p>It is correct that surface examination from only the outside surface would not detect flaws that originate from the inside surface. However, the summary fails to acknowledge that the types of material involved are very flaw tolerant, with slow flaw propagation, and flaws originating on the inside surface would grow through-wall long before their length would threaten the structural integrity/function of the weld.</p>	<p>DG-1112 should be revised to eliminate Code Case N-323-1 for its list of unacceptable Code Cases. DG-1091 should be revised to add Code Case N-323-1 to its list of acceptable Code Cases.</p>

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			<p>In addition, RPV skirt welds are similar to BWR core shroud circumferential welds in that they are not pressure retaining and their load keeps them in compression. Boiling Water Reactor Vessel Internals Project (BWRVIP) GENE-523-A107P, "BWR Shroud Cracking Generic Safety Assessment" found that core shroud circumferential welds could be cracked through-wall for 360° and still perform their function.</p> <p>Considering this comparison and the excellent service history of RPV skirt welds, the extra radiation exposure and burden necessary to examine the inside surface of the weld is not warranted</p>	
3.	Table 2	N-498-2, N-498-3, N-498-4	<p>The NRC has permitted some licensees to currently use Code Case N-498-1, which allows the substitution of system leakage tests (conducted at nominal operating pressure) in lieu of the elevated pressure tests (i.e., hydrostatic testing) at the end of each inspection interval. In revision 1 of N-498, hold times of 10 minutes for non-insulated systems and 4 hours for insulated systems are specified for the system leakage test, whereas, in revisions 2, 3 and 4 no hold times are specified.</p> <p>N-498-1 is endorsed in Regulatory Guide 1.147 without any provisions, whereas DG-1112 lists revisions 2, 3 and 4 of N-498 as unacceptable for use. The summary within DG-1112 states that the capability of detecting a small leak is directly proportional to the hold time while the system is pressurized, especially if it is insulated. It further states that hydrostatic tests or system leakage and pressure tests without hold times may be insensitive to smaller leaks, thereby defeating the purpose of the tests.</p> <p>Under the 1989 Edition of Section XI, the routine pressure tests conducted during the inspection interval are system leakage tests for the Class 1 boundary, system functional tests for Class 2 or 3 systems that are not normally in operation, and system inservice tests for Class 2 or 3 systems that are normally in operation. The specified hold times for these tests are:</p> <ul style="list-style-type: none"> • none for the system leakage tests, • 10 minutes for the system functional tests, and • basically 4 hours for the system inservice tests. <p>Thus, in accordance with some plant's existing pressure testing program, (all based on Code Editions or Code Cases endorsed by the NRC) and, except for the end of inspection interval pressure tests:</p> <ul style="list-style-type: none"> • no hold times are required for Class 1 system pressure tests and • only 10 minute hold times are required for Class 2 and 3 systems that 	DG-1112 should be revised to eliminate these Code Case from its list of unacceptable Code Cases. DG-1091 should be revised to add this Code Case to its list of acceptable Code Cases.

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			<p>are not normally in operation.</p> <p>Revisions 2, 3, and 4 to N-498 apply the same hold time requirements used for Class 1 systems during the performance of system leakage tests during the interval to the system pressure tests performed at the end of the interval.</p> <p>In making the revisions to N-498, the ASME Subcommittee XI Pressure Testing Working Group considered the effect of hold times on the capability to detect leakage and did not find that there was any direct correlation. Industry experience has proven that even with insulated systems, by the time systems are brought up to the operating pressure, small leaks wet the insulation enough to provide for detection.</p> <p>A possible exception, and perhaps the source of the NRC's concern, is the recent leakage identified in PWR head penetrations and a PWR hot leg nozzle. However, the missed identification of through-wall leakage at the PWR's would not have been helped by increased pressure test hold times as it was due more to inadequate access than to inadequate hold times.</p>	
4.	Table 2	N-547	<p>VT-1 examination of CRD disassembled housing bolting is required in Table IWB-2500-1, Item B7.80, of the ASME Section XI 1995 Edition and earlier editions and addenda. Code Case N-547 deletes this requirement. The requirement was also eliminated in the 1995 Addenda as part of the same Code action that approved Code Case N-547.</p> <p>The ASME Code committee justified elimination of the CRD bolting examinations based on the historical record, which failed to demonstrate CRD bolting failures. This change supported improved ALARA considerations because the CRD mechanisms are typically highly contaminated and in high radiation areas. Elimination of the bolting exams reduces radiation exposure.</p> <p>The ASME committee responsible for initiating this change conducted a study of industry experience and radiation exposure. The paper documenting this study was included as the ASME basis for eliminating the visual examination. It is understood that NRC personnel on the Code committees were in agreement with this position.</p> <p>DG-1112 states in part that the basis for not accepting the Code Case is that the examination of CRD bolting is required to verify that damage such as bending and galling of threads has not occurred when performing maintenance activities that require removal and reinstallation of bolting. Skill of the craft and maintenance practices would preclude re-installation of damaged bolting. Furthermore, Item B7.80 never required examination of the bolting prior to installation. Note 1 of Table IWB-2500-1, Examination Category B-G-2, states</p>	<p>DG-1112 should be revised to eliminate Code Case N-547 from its list of unacceptable Code Cases. DG-1091 should be revised to added Code Case N-547 to its list of acceptable Code Cases.</p>

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			<p>that bolting may be examined in place under tension, when the connection is disassembled, or when the bolting is removed. As used under the Extent and Frequency of Examination Column for Item B7.80, "when removed" simply establishes the scope of the CRD bolting exams.</p> <p>In order to avoid contamination and radiation exposure, VT-1 examination personnel typically examine the bolting when it is removed and remotely located from the CRD mechanism. It is still the skill of the craft and good maintenance practices that ensure that the bolting is not damaged upon installation. Thus, not only is the requirement to perform a VT-1 examination of CRD housing bolting when disassembled considered unwarranted, it also fails to accomplish its stated purpose.</p> <p>Therefore, the Code Case should be acceptable for use.</p>	
5.	Table 1	N-561, N-561-1, N-562, N-562-1	<p>DG-1112 states that the basis for finding the Code Cases unacceptable is that:</p> <p style="padding-left: 40px;">"Neither the ASME Code nor the Code Case have criteria for determining the rate or extent of degradation of the repair or the surrounding base metal. Re-inspection requirements are not provided to verify structural integrity since the root cause may not be mitigated."</p> <p>The Code Committees never intended for the Code or Code Cases to be used as handbooks that replace good engineering practice and judgment.</p> <p>Each Code Case requires evaluating the material beneath the surface to which the weld overlay is applied to determine the extent and configuration of degradation reinforced by the weld overlay. The Code Cases also require scheduling follow-up inspections as necessary to confirm any design assumptions relative to the rate or extent of future degradation.</p> <p>The licensees that will implement these Code Cases are required to work under an ASME Section XI Repair/Replacement Program that requires documentation and third party review of Repair/Replacement activities and documentation. These licensees have the education, experience, and engineering judgment to develop sound criteria for determining the rate or extent of degradation of the repair or the surrounding base metal as well as developing reinspection requirements capable of verifying structural integrity.</p> <p>Therefore, based on the above argument, the Code Cases should be acceptable for use and should be added to the list of acceptable Code Cases identified in DG-1091.</p>	Delete Code Case from the list of non-endorsed code cases listed in DG-1112 and endorse it for use in DG-1091.

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
6.	Table 2	N-574	<p>Code Case N-574 provides for extending the re-certification frequency for Level I and II NDE personnel from 3 years to 5 years. This brings the re-certification frequency for Level I and II personnel in line with that of Level III personnel.</p> <p>The DG-1112 summary states "based on data obtained by the NRC staff during its review of Appendix VIII to Section XI, the NRC noted that proficiency decreases over time. The data does not support re-certification examinations at a frequency of every 5 years". This statement is based entirely on observations of performance demonstrations for ultrasonic examination personnel in accordance with Appendix VIII. Therefore, other than for the ultrasonic method, there appears to be no data to support the NRC's objection to this Code Case. In regards to the ultrasonic method, Appendix VIII did identify the need for ultrasonic personnel to maintain proficiency through annual practice on flawed specimens. As a result, the annual training requirements of Section XI, Appendix VII, VII-4240 were put in place to assure that proficiency is maintained and does not decrease with time; thus addressing the NRC's concern.</p> <p>Therefore, based on the above argument, the Code Cases should be acceptable for use and should be added to the list of acceptable Code Cases identified in DG-1091.</p>	<p>DG-1112 should be revised to eliminate Code Case N-574 from its list of unacceptable Code Cases. DG-1091 should be revised to added Code Case N-574 to its list of acceptable Code Cases.</p>
7.	Table 2	N-583	<p>Code Case N-583 provides alternative requirements for annual training.</p> <p>The DG-1112 summary states that training providing manual techniques is not provided for and the alternative is less complete than that provided by Appendix VII, VII-4240* (*there is a typo in the DG, incorrectly referencing VII-4220) of the 1989 Edition or earlier. It also states that the provisions do not meet the Appendix VIII qualification requirements as required by 10 CFR 50.55a(b)(2)(xiv). 10 CFR 50.55a(b)(2)(xiv) requires that personnel qualified for performing ultrasonic examinations in accordance with Appendix VIII shall receive 8 hours of annual hands-on training with specimens that contain cracks and that the training must be completed no earlier that 6 months prior to performing ultrasonic examinations at a licensee's facility.</p> <p>Many licensees have been granted 10 CFR 50.55a relief from the VII-4240 requirements on the basis of substituting the (b)(2)(xiv) requirements. In fact, Code Case N-583 was written in response to the NRC's previous concerns and, with the exception of frequency, to bring VII-4240 in line with (b)(2)(xiv).</p> <p>Furthermore the N-583 summary does not provide for training using manual techniques. However, it does not preclude training using manual techniques.</p>	<p>DG-1112 should be revised to eliminate Code Case N-583 from its list of unacceptable Code Cases. DG-1091 should be revised to added Code Case N-583 to its list of acceptable Code Cases.</p>

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			<p>Yet, the real need, as previously expressed by the NRC and agreed upon by the Code Committee, is for ultrasonic examination personnel to get training/practice on examination of flawed specimens. It is not the ability to push a transducer that erodes with time, but rather it is the skill to be able to recognize and analyze flaw signals. Code Case N-583 simply provides the option of practicing with flaw signals through live examination of flawed specimens or through analyzing prerecorded data from flawed specimens.</p>	
8.	Table 1	N-619	<p>The NRC's basis for concluding that Code Case N-619 is unacceptable has not appropriately considered that basis for the Code Case. Based on the following the Code Case should be adopted as an acceptable Code Case for use by licensees.</p> <p>The original nozzle inner radius examination requirements were included in ASME Section XI as a result of a cracking event in a non-nuclear vessel that occurred near the time when the ASME Section XI requirements were being established in the early 1970's. At that time there was only limited experience with commercial nuclear power plants. Caution required that the inner radius regions be monitored. Today, after 25 years of operation (over 1000 reactor years), the absence of cracking in the inner radius regions of the pressurizers and steam generators, supports the elimination of these examination requirements. If such experience had existed in the early 1970's, the inner radius regions would not have required examination. It is true that ASME, in attempts to gain NRC approval of these revised requirements, agreed to consider reinstating some alternate examination requirements. However, ASME does not agree that a need exists for any alternate examination requirements and requests that the staff re-evaluate the information provided to date and approve the examination position presented in the 1999 Addenda as part of this rulemaking. A summary of that information follows (most of this information was provided in a basis paper included with the Code action to revise Table IWB-2500-1 and Code Case N-619):</p> <ul style="list-style-type: none"> a) There are extensive examinations of the inner radius regions as part of the manufacturing process, including multiple surface and volumetric examinations to satisfy the requirements of both ASME Sections III and XI. This precludes significant flaws being placed into initial service. b) Fracture mechanics work demonstrated that a very large flaw would be required before the inner radius area would fail. This flaw is so large it would have a through wall extent easily detectable before reaching critical size. 	<p>DG-1112 should be revised to eliminate Code Case N-619 from its list of unacceptable Code Cases. Add Code Case N-619 to the list of acceptable Code Cases adopted in DG-1091.</p>

Cmt #	Para.	Code Case	Comment	Proposed Corrective Action
			<p>c) Deterministic fatigue crack growth evaluations show a very small amount of growth during the operating life of the inner radius region.</p> <p>c) In over 25 years (over 1000 years of reactor operation), no cracking incidents of any kind in these nozzles radius regions have been found.</p> <p>e) Probability of failure assessments indicates that the probability of failure is very small.</p> <p>f) Early NDE inspection techniques, especially prior to NRGREG 0619, may not have been as proficient in the detection of flaws as desired. However, because the critical flaw size is so large, it is felt that even these techniques could have detected a flaw before it became critical. Recent demonstrations on PWR pressurizer nozzles have shown good coverage and delectability of some techniques being used today. To our knowledge, examinations performed with these improved techniques have failed to detect any significant cracking or a degradation mechanism.</p> <p>g) ASME concluded: 1) that it is highly unlikely that the inner radius regions of the pressurizers and steam generators will fail under any anticipate service conditions, and 2) that cracking and degradation is not concern for this region of the vessel. Because inservice inspections can hardly benefit plant safety for something that is very unlikely to happen, ASME deleted the volumetric examinations of the inner radius region.</p> <p>Based on the above, the Code Case should be acceptable for use.</p>	