



DRAFT REGULATORY GUIDE

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DRAFT REGULATORY GUIDE DG-1135

(Proposed Revision 2 of Regulatory Guide 1.193, dated August 2005)

ASME CODE CASES NOT APPROVED FOR USE

A. INTRODUCTION

In Title 10, Part 50, of the *Code of Federal Regulations* (10 CFR Part 50), "Domestic Licensing of Production and Utilization Facilities," Section 50.55a(c), "Reactor Coolant Pressure Boundary," requires, in part, that components of the reactor coolant pressure boundary be designed, fabricated, erected, and tested in accordance with the requirements for Class 1 components of Section III, "Rules for Construction of Nuclear Power Plant Components,"¹ of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (BPV) Code or equivalent quality standards. Section 50.55a(f), "Inservice Testing Requirements," requires, in part, that Class 1, 2, and 3 components and their supports meet the requirements of the ASME "Code for Operation and Maintenance of Nuclear Power Plants" (OM Code) or equivalent quality standards. Finally, 10 CFR 50.55a(g), "Inservice Inspection Requirements," requires, in part, that Classes 1, 2, 3, MC (metal containment), and CC (concrete containment) components and their supports meet the requirements of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components," of the ASME BPV Code or equivalent quality standards.

The ASME publishes a new edition of the BPV and OM Codes every 3 years and new addenda every year. The latest editions and addenda of Section III, Section XI, and the OM Code that the U.S. Nuclear Regulatory Commission (NRC) has approved for use by licensees are

¹ Copies may be obtained from the American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990; phone (212) 591-8500; fax (212) 591-8501; www.asme.org.

This regulatory guide is being issued in draft form to involve the public in the early stages of the development of a regulatory position in this area. It has not received staff review or approval and does not represent an official NRC staff position.

Public comments are being solicited on this draft guide (including any implementation schedule) and its associated regulatory analysis or value/impact statement. Comments should be accompanied by appropriate supporting data. Written comments may be submitted to the Rules and Directives Branch, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Comments may be submitted electronically through the NRC's interactive rulemaking Web page at <http://www.nrc.gov/what-we-do/regulatory/rulemaking.html>. Copies of comments received may be examined at the NRC Public Document Room, 11555 Rockville Pike, Rockville, MD. Comments will be most helpful if received by **July 14, 2006**.

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referenced in 10 CFR 50.55a(b). The ASME also publishes Code Cases for Section III and Section XI quarterly and Code Cases for the OM Code yearly. Code Cases provide alternatives developed and approved by the ASME. Revision 33 of Regulatory Guide 1.84, “Design, Fabrication, and Materials Code Case Acceptability, ASME Section III,”² and Revision 14 of Regulatory Guide 1.147, “Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1,” are being revised to identify the Code Cases that the NRC has determined to be acceptable alternatives to applicable parts of Section III and Section XI.

The NRC staff has reviewed Section III and Section XI Code Cases listed in Supplements 7–12 to the 2001 Edition, and Supplement 1 to the 2004 Edition of the ASME BPV Code. Draft Regulatory Guide DG-1133 (proposed Revision 34 of Regulatory Guide 1.84) and Draft Regulatory Guide DG-1134 (proposed Revision 15 of Regulatory Guide 1.147) specify the Code Cases determined to be acceptable, and are being published concurrently with this draft guide for public comment. *This regulatory guide does not approve the use of the Code Cases listed herein.*

The NRC issues regulatory guides to describe to the public methods that the staff considers acceptable for use in implementing specific parts of the agency’s regulations, to explain techniques that the staff uses in evaluating specific problems or postulated accidents, and to provide guidance to applicants. Regulatory guides are not substitutes for regulations, and compliance with regulatory guides is not required. The NRC issues regulatory guides in draft form to solicit public comment and involve the public in developing the agency’s regulatory positions. Draft regulatory guides have not received complete staff review and, therefore, they do not represent official NRC staff positions.

Because this regulatory guide does not approve the use of the Code Cases listed herein, it does not contain new or amended information collection requirements subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). The NRC may neither conduct nor sponsor, and a person is not required to respond to, an information collection request or requirement unless the requesting document displays a currently valid OMB control number.

² Revision 32 of Regulatory Guide 1.84 combined Regulatory Guides 1.84 and 1.85 to list all Section III Code Cases in one guide. The title of Regulatory Guide 1.84 has been modified to reflect this.

B. DISCUSSION

This regulatory guide lists the Code Cases that the NRC has determined not to be acceptable for use on a generic basis. A brief description of the basis for the determination is provided with each Code Case. Licensees may submit a request to implement one or more of the Code Cases listed below through 10 CFR 50.55a(a)(3), which permits the use of alternatives to the Code requirements referenced in 10 CFR 50.55a, provided that the proposed alternatives result in an acceptable level of quality and safety. A licensee must submit a plant-specific request that addresses the NRC's concerns about the Code Case at issue.

C. REGULATORY POSITION

For this guide, the NRC staff reviewed the Section III and Section XI Code Cases listed in Supplements 7–12 to the 2001 Edition, and Supplement 1 to the 2004 Edition of the ASME BPV Code. Licensees must not implement Code Cases listed in this guide without prior NRC approval. This regulatory guide will be revised as necessary.

1. Unacceptable Section III Code Cases

The NRC determined that the following Section III Code Cases are unacceptable for use by licensees in their Section III design and construction programs. The ASME issues a new edition of Section III every 3 years, and publishes quarterly supplements to the edition containing Section III Code Cases. Hence, there are 12 supplements to each edition. To assist users, Code Case changes specific to this draft guide are shaded. The shading will assist in focusing attention during the public comment period on the changes to the guide. The third column of Table 1 lists the date of approval by the ASME, the reaffirmation date (signified by the letter "R"), or for new Code Cases, and the supplement and edition in which each Code Case was published (e.g., "11/01E" means Code Case Supplement 11 to the 2001 Edition).

Table 1. Unacceptable Section III Code Cases

Code Case Number	Table 1 Unacceptable Section III Code Cases	Date or Supplement/ Edition
	Summary	
N-284-1	<i>Metal Containment Shell Buckling Design Methods, Section III, Division 1, Class MC</i>	R5/9/03
	<p>(1) The following errata, misprints, recommendations, and errors have been identified:</p> <ul style="list-style-type: none"> • Fig. 1511.1, The curve for $\alpha_{\theta L}$ should not exceed 0.8 for any value of (R/t). • -1512, The statement “See Fig. 1512-1 then see -1713.1.2 for method of calculating M” should be rephrased as: “See -1713.1.2 for method of calculating M, then see Fig. -1512-1.” • -1513, Recommend “Use the value of $\alpha_{\theta L}$ given for spherical shells in accordance with -1512.” • -1521, (i) In (a) <i>Axial Compression</i>, “$\alpha_{\theta G} = \alpha_{\theta L}$” should be changed to “$\alpha_{\phi G} = \alpha_{\phi L}$.” (ii) The source of the equations shown under “(a) <i>Axial Compression</i>” provided separate instability equations for stringer-stiffened and ring-stiffened cylindrical shells. The Code Case adopted the instability equations pertaining to ring-stiffened shells, which are less conservative than those for stringer instability, for both ring and/or stringer stiffened cylindrical shells. Is this the intent? (Ref. “Summary of Buckling Tests on Fabricated Steel Cylindrical Shells in USA,” by C.D. Miller, in “Buckling of Shells in Offshore Structures,” 1982.) • -1712.1.1, The equation “$C_{\theta h} = 0.92/(M_{\theta} - 0.636)$” should be changed to “$C_{\theta h} = 0.92/(M_{\phi} - 0.636)$”. • -1712.1.1-1, The leftmost curve should be labeled $C_{\theta h}$ • -1712.2.2, (a) <i>Axial Compression</i>, (i) In the formula for $\sigma_{\phi e j}$, the denominator should be $(m\pi/L_j)^2 \cdot t_{\phi}$. (ii) The expressions for C_{ϕ} and C_{θ} should be separated. • -1712.2.3, (i) The factor 1.944 in an older edition has been changed to 2.00. No basis is apparent. (ii) The misprint “$t_1^{1/4}$” should be corrected to “$t_1^{1/2}$”. • -1713.1.1, (i) The equation “$\sigma_{ra} = \alpha_{\phi \theta} \cdot \sigma_{\phi \theta e l} / FS$” should be changed to “$\sigma_{ra} = \alpha_{\phi \theta L} \cdot \sigma_{\phi \theta e l} / FS$”. (ii) The title of (c) should be changed to “<i>Axial Compression Plus In-Plane Shear.</i>” • -1713.1-1, In (b), the lower value “$K_s = \sigma_{ra}$” on the vertical axis should be changed to “$K_s = \sigma_{ha}$” • -1713.2.1, (i) The headings for (b) and (c) should include the words “<i>In-Plane</i>”. (ii) In (b) “<i>Axial Compression Plus Shear</i>”, “σ_{θ}” should be changed to “σ_{ϕ}”. 	

Code Case Number	Table 1 Unacceptable Section III Code Cases	Date or Supplement/ Edition
	Summary	
N-284-1 (cont'd)	<i>Metal Containment Shell Buckling Design Methods, Section III, Division 1, Class MC</i>	R5/9/03
	<p>(2) Applicants intending to use Code Case N-284-1 shall submit a request to the NRC staff for its review and approval on a plant-specific basis.</p> <p>(3) The rules applicable to evaluate the buckling and instability of containment shells for Section III, Division 3, are under development. Currently, use of Code Case N-284-1 by licensees for storage canisters and transportation casks is permissible provided it has been reviewed and approved by the NRC.</p>	
N-483-2 N-483-3	<i>Alternative Rules to the Provisions of NCA-3800, Requirements for Purchase of Material, Section III, Divisions 1 and 3</i>	5/7/99 2/25/02
	The Code Case lacks sufficient detail to ensure that the supplied material is as represented by the Certified Material Test Report.	
N-510 N-510-1	<i>Borated Stainless Steel for Class CS Core Support Structures and Class 1 Component Supports, Section III, Division 1</i>	12/9/93 8/14/01
	No technical basis was provided for expanding the Code Case to include borated stainless steel Types 304B, 304B1, 304B2, and 304B3. A considerable amount of information was required to support the types presently contained in the Code Case. The revised Code Case would permit borated stainless steel to be used for component supports within the reactor vessel. The technical basis to support the Code Case only addresses the use of these materials as component supports in spent fuel racks and transportation casks.	
N-519	<i>Use of 6061-T6 and 6061-T651 Aluminum for Class 1 Nuclear Components</i>	Annulled 2/3/03
	Code Case is applicable to only one DOE aluminum vessel.	
N-530	<i>Provisions for Establishing Allowable Axial Compressive Membrane Stresses in the Cylindrical Walls of 0-15 Psi Storage Tanks, Classes 2 and 3</i>	R2/3/03 (7/01E)
	There are numerous errors in the equations. The errors must be corrected before the Code Case can be approved for use.	

Code Case Number	Table 1 Unacceptable Section III Code Cases	Date or Supplement/ Edition
	Summary	
N-565	<i>Alternative Methods of Nozzle Attachment for Class 1 Vessels</i>	12/3/99
	The Code Case essentially requires a design using a seal to protect the threads from the contained fluid, and seals are not a Code item. The seal, which plays a very important part in the integrity of the joint, imposes too great a vulnerability in the design. The supporting information for the Code Case does not demonstrate the resulting threaded nozzle configuration is equivalent in integrity to that of a welded connection.	
N-595 N-595-1 N-595-2 N-595-3	<i>Requirements for Spent Fuel Storage Canisters, Section III, Division 1</i>	2/26/99 9/24/99 12/8/00 04/08/02
	Regulatory approval for the use of multi-purpose casks is presently addressed by the NRC Spent Fuel Project Office Interim Staff Guidance No. 4, Rev. 1 (ISG-4, Rev. 1). The interim staff guidance provides a framework to ensure that the cask system, as designed, and when fabricated and used in accordance with the conditions specified in its Certificate of Compliance, meets the requirements of 10 CFR Part 72. The ASME is presently developing Code Case N-717 to replace Code Case N-595-3. Thus, Code Case N-595-3 will be retained in Regulatory Guide 1.193, and the NRC will review Code Case N-717 when it is published.	
N-645 N-645-1	<i>Use of Rupture Disk Devices on Nuclear Fuel Storage Canisters, Class 1, Section III, Division 1</i>	6/14/00 R2/3/03 (7/01E)
	The NRC does not permit the use of rupture disk devices in spent nuclear fuel storage canister designs.	
N-659-1	<i>Use of Ultrasonic Examination in Lieu of Radiography for Weld Examination, Section III, Division 1</i>	11/01E
	(a) The weld examination volume has been unacceptably reduced which may exclude regions of high residual stress. (b) Any future unspecified edition and addenda of Section V could be used for nondestructive examination. (c) A surface examination could be used to evaluate surface connected flaws which may be characterized by ultrasonic testing as cracks, lack of fusion, or lack of penetration. Such characterizations would automatically be rejected by Section III criteria.	

Code Case Number	Table 1 Unacceptable Section III Code Cases	Date or Supplement/ Edition
	Summary	
N-673	<i>Boron Containing Powder Metallurgy Aluminum Alloy for Storage and Transportation of Spent Nuclear Fuel, Section III, Division 1</i>	11/01E
	<p>The Code Case does not address the following:</p> <ul style="list-style-type: none"> (a) Corrosion properties of this material in spent fuel pool chemistry and/or clean water. (b) Impact properties for use as a structural material. (c) Uniform distribution of boron carbide in the aluminum matrix. (d) Mechanical properties for the use of the material in high-temperature conditions. 	
N-693	<i>Alternative Method to the Requirements of NB-3228.6 for Analyzing Piping Subjected to Reversing Dynamic Loads, Section III, Division 1</i>	10/01E
	<p>The Code Case would permit the use of the design, service, and test limits in Paragraph NB-3656(b) for Level D Service Limits. The limits in Paragraph NB-3656(b) are prohibited per 10 CFR 50.55a(b)(1)(iii).</p>	
N-717	<i>Requirements for Construction of Storage Containments for Spent Nuclear Fuel and High Level Radioactive Waste and Material, Section III, Division 3</i>	1/04E
	<p>The provisions of the Code Case are copied from the July 1, 2005, addenda to "Containments for Transportation and Storage of Spent Nuclear Fuel and High Level Radioactive Material and Waste," Section III, Division 3. The changes to the ASME Code contained in the addenda are presently being reviewed by the NRC staff. The Code Case is listed in this guide pending the results of the NRC staff review.</p> <p>Regulatory approval for the use of multi-purpose casks is presently addressed by the NRC Spent Fuel Project Office Interim Staff Guidance No. 4, Rev. 1 (ISG-4, Rev. 1). The interim staff guidance provides a framework to ensure that the cask system, as designed, and when fabricated and used in accordance with the conditions specified in its Certificate of Compliance, meets the requirements of 10 CFR Part 72.</p>	

2. Unacceptable Section XI Code Cases

The NRC determined that the following Section XI Code Cases are unacceptable for use by licensees in their Section XI inservice inspection programs. The ASME issues a new edition of Section XI every 3 years, and publishes quarterly supplements to the edition containing Section XI Code Cases. Hence, there are 12 supplements to each edition. To assist users, Code Case changes specific to this draft guide are shaded. The shading will assist in focusing attention during the public comment period on the changes to the guide. The third column of Table 2 lists the date of approval by the ASME, the reaffirmation date (signified by the letter "R"), or for new Code Cases, and the supplement and edition in which each Code Case was published (e.g., "11/01E" means Code Case Supplement 11 to the 2001 Edition).

Table 2. Unacceptable Section XI Code Cases

Code Case Number	Table 2 Unacceptable Section XI Code Cases	Date or Supplement/ Edition
	Summary	
N-465 N-465-1	<i>Alternative Rules for Pump Testing, Section XI, Division 1</i>	11/30/88 Annulled 2/14/03 (8-9/01E)
	The draft standard referenced in the Code Case is outdated. The requirements contained in the OM Code, "Code for Operation and Maintenance of Nuclear Power Plants," should be used. Note that Revision 12 of RG 1.147 approved N-465 for use. The disapproval of N-465 for use applies only to new users.	
N-473 N-473-1	<i>Alternative Rules for Valve Testing, Section XI, Division 1</i>	3/8/89 Annulled 2/14/03 (8-9/01E)
	The draft standard referenced in the Code Case is outdated. The requirements contained in the OM Code, "Code for Operation and Maintenance of Nuclear Power Plants," should be used. Note that Revision 12 of RG 1.147 approved N-473 for use. The disapproval of N-473 for use applies only to new users.	
N-480	<i>Examination Requirements for Pipe Wall Thinning Due to Single Phase Erosion and Corrosion, Section XI, Division 1</i>	Annulled on 9/18/01
	Code Case has been superseded by Code Case N-597, "Requirements for Analytical Evaluation of Pipe Wall Thinning," implemented in conjunction with NSAC-202L, "Recommendations for an Effective Flow-Accelerated Corrosion Program."	
N-498-2 N-498-3	<i>Alternative Requirements for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems, Section XI, Division 1</i>	6/9/95 5/20/98
	Code Case N-498-4 is conditionally approved in Revision 13 of Regulatory Guide 1.147. Those licensees choosing to implement this Code Case are to implement Revision 4.	

Code Case Number	Table 2 Unacceptable Section XI Code Cases	Date or Supplement/ Edition
	Summary	
N-532-2	<i>Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Requested by IWA-4000 and IWA-6000, Section XI, Division 1</i>	7/23/02
	<p>The following concerns were identified during review of the Code Case:</p> <p>(1) The Code Case references new paragraph IWA-6350 which has not yet been incorporated into the ASME Code;</p> <p>(2) NRC staff had difficulty reconciling Footnote 1 and Table 4 regarding the applicable edition and addenda; and</p> <p>(3) Submission of Form OAR-1 is at the end of each inspection period rather than 90 days following the outage.</p>	
N-542	<i>Alternative Requirements for Nozzle Inside Radius Section Length Sizing Performance Demonstration, Section XI, Division 1</i>	Annulled on 3/28/01
	Code Case N-542 was subsumed by Code Case N-552, "Alternative Methods—Qualification for Nozzle Inside Radius Section from the Outside Surface," which is being implemented by licensees. Thus, there is no need to approve Code Case N-542.	
N-547	<i>Alternative Examination Requirements for Pressure Retaining Bolting of Control Rod Drive (CRD) Housings, Section XI, Division 1</i>	Annulled on 5/20/01
	Code Case N-547 states that the examination of CRD housing bolts, studs, and nuts is not required. However, 10 CFR 50.55a(b)(2)(xxi)(B) requires the examination of CRD bolting material whenever the CRD housing is disassembled and the bolting material is to be reused. Examination of CRD bolting material is required to verify that service-related degradation has not occurred, or that damage such as bending and galling of threads has not occurred when performing maintenance activities that require the removal and reinstallation of bolting.	
N-560 N-560-1 N-560-2	<i>Alternative Examination Requirements for Class 1, Category B-J Piping Welds, Section XI, Division 1</i>	8/9/96 2/26/99 R2/14/03 (8-9-/01E)
	<p>(1) The Code Case does not address inspection strategy for existing augmented and other inspection programs such as intergranular stress corrosion cracking (IGSCC), flow-assisted corrosion (FAC), microbiological corrosion (MIC), and pitting.</p> <p>(2) The Code Case does not provide system-level guidelines for change in risk evaluation to ensure that the risk from individual system failures will be kept small and dominant risk contributors will not be created.</p>	

Code Case Number	Table 2 Unacceptable Section XI Code Cases	Date or Supplement/ Edition
	Summary	
N-561 N-561-1	<i>Alternative Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping, Section XI, Division 1</i>	12/31/96 3/28/01
	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. Reinspection requirements are not provided to verify structural integrity since the root cause may not be mitigated.	
N-562 N-562-1	<i>Alternative Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping, Section XI, Division 1</i>	12/31/96 3/28/01
	Neither the ASME Code nor the Code Case have criteria for determining the rate or extent of degradation of the repair or the surrounding basemetal. Reinspection requirements are not provided to verify structural integrity since the root cause may not be mitigated.	
N-574	<i>NDE Personnel Recertification Frequency, Section XI, Division 1</i>	R2/14/03 (8-9/01E)
	Based on data obtained by the NRC staff during its review of Appendix VIII, "Performance Demonstration for Ultrasonic Examination Systems," to Section XI, the NRC staff noted that proficiency decreases over time. The data does not support re-certification examinations at a frequency of every 5 years.	
N-575	<i>Alternative Examination Requirements for Full Penetration Nozzle-to-Vessel Welds in Reactor Vessels with Set-On Type Nozzles, Section XI, Division 1</i>	R2/14/03 (8-9/01E)
	The supporting basis for the Code Case applies to the specific configuration of one plant and is not applicable on a generic basis. In addition, there are insufficient controls on stress and operating conditions to permit a generic reduction in examination volume. Finally, the boundaries of the volume of the weld, cladding, and heat affected zone from Figure 2 are ambiguous.	
N-577 N-577-1	<i>Risk-Informed Requirements for Class 1, 2, and 3 Piping, Method A, Section XI, Division 1</i>	9/2/97 R2/14/03 (8-9/01E)
	(1) The Code Case does not address inspection strategy for existing augmented and other inspection programs such as intergranular stress corrosion cracking (IGSCC), flow -assisted corrosion (FAC), microbiological corrosion (MIC), and pitting. (2) The Code Case does not provide system-level guidelines for change in risk evaluation to ensure that the risk from individual system failures will be kept small and dominant risk contributors will not be created.	

Code Case Number	Table 2 Unacceptable Section XI Code Cases	Date or Supplement/ Edition
	Summary	
N-578 N-578-1	<i>Risk-Informed Requirements for Class 1, 2, and 3 Piping, Method B, Section XI, Division 1</i>	9/2/97 R2/14/03 (8-9/01E)
	<p>(1) The Code Case does not address inspection strategy for existing augmented and other inspection programs such as intergranular stress corrosion cracking, flow-assisted corrosion, microbiological corrosion, and pitting.</p> <p>(2) The Code Case does not provide system-level guidelines for change in risk evaluation to ensure that the risk from individual system failures will be kept small and dominant risk contributors will not be created.</p>	
N-587	<i>Alternative NDE Requirements for Repair/Replacement Activities, Section XI, Division 1</i>	Annulled 2/14/03 (8-9/01E)
	The NRC believes this Code Case is in conflict with the review process for approval of alternatives under 10 CFR 50.55a(a)(3). The Code Case would permit a licensee and the Authorized Nuclear Inspector to choose unspecified alternatives to regulatory requirements.	
N-589 N-589-1	<i>Class 3 Nonmetallic Cured-in-Place Piping, Section XI, Division 1</i>	4/19/02 7/23/02
	<p>(1) The installation process provides insufficient controls on wall thickness measurement.</p> <p>(2) There are no qualification requirements for installers and installation procedures such as those for welders and welding procedures.</p> <p>(3) Fracture toughness properties of the fiberglass are such that the cured-in-place piping (CIPP) could crack during a seismic event.</p> <p>(4) Equations 4 and 5 in the Code Case contain an "i" term [a stress intensification factor] that is derived from fatigue considerations. Stress intensification factors, however, have not been developed for fiberglass materials.</p>	
N-590	<i>Alternative to the Requirements of Subsection IWE, Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Plants, Section XI, Division 1</i>	Annulled on 4/8/02
	The provisions of the Code Case were incorporated into the 1998 Edition which has been approved by the NRC. Thus, the Code Case is no longer needed and was annulled by the ASME.	

Code Case Number	Table 2 Unacceptable Section XI Code Cases	Date or Supplement/ Edition
	Summary	
N-591	<i>Alternative to the Requirements of Subsection IWL, Requirements for Class CC Concrete Components of Light-Water Cooled Plants, Section XI, Division 1</i>	Annulled on 4/8/02
	The provisions of the Code Case were incorporated into the 1998 Edition which has been approved by the NRC. Thus, the Code Case is no longer needed and was annulled by the ASME.	
N-613	<i>Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Vessel-To-Nozzle Welds, Fig. IWB-2500-7(a), (b), and (c), Section XI, Division 1</i>	7/30/98
	The Code Case conflicts with and unacceptably reduces the requirements of 10 CFR 50.55a(b)(2)(xv)(K)(2)(i). A revision to the Code Case has been developed to address the concerns.	
N-615	<i>Ultrasonic Examination as a Surface Examination Method for Category B-F and B-J Piping Welds, Section XI, Division 1</i>	7/28/01
	The Code Case requires that the ultrasonic technique used be demonstrated capable of detecting certain size flaws on the outside diameter of the weld, but it does not specify any demonstration requirements. To be acceptable, Section XI, Appendix VIII, type rules for performance demonstration need to be developed and applied.	
N-618	<i>Use of a Reactor Pressure Vessel as a Transportation Containment System, Section XI, Division 1</i>	10/01E
	The Code Case was developed as a potential option for shipping and disposal of a reactor pressure vessel (RPV). The NRC staff determined, however, that the Code Case was not applicable to the review and approval process for transportation packages. The use of RPVs as a transportation package has been addressed under 10 CFR Part 71.	
N-622	<i>Ultrasonic Examination of RPV and Piping, Bolts, and Studs, Section XI, Division 1</i>	4/19/02
	The Code Case was published in May 1999. Industry Performance Demonstration Initiative efforts since that time have made this Code Case obsolete. Issues associated with supplements to Appendix VIII are being addressed individually in separate Code Cases.	

Code Case Number	Table 2 Unacceptable Section XI Code Cases	Date or Supplement/ Edition
	Summary	
N-653	<i>Qualification Requirements for Full Structural Overlaid Wrought Austenitic Piping Welds, Section XI, Division 1</i>	9/7/01
	<p>(1) Section XI, Appendix VIII, Supplement 11, requires a personnel performance qualification as part of the procedure qualification. The detection acceptance criteria in the Code Case do not require personnel performance qualification as part of the procedure qualification. Personnel qualification is necessary to validate the effectiveness of the procedure qualification.</p> <p>(2) The minimum grading unit is 1.0 inch in the circumferential direction. The acceptance tolerance, however, is 0.75 inch root mean square error. Thus, the length sizing acceptance criteria do not adequately prevent the use of testmanship rather than skill to pass length sizing tests.</p>	
N-654	<i>Acceptance Criteria for Flaws in Ferritic Steel Components 4 in. and Greater in Thickness, Section XI, Division 1</i>	4/17/02
	Licenses intending to apply the rules of this Code Case must obtain NRC approval of the specific application in accordance with 10 CFR 50.55a(3).	
N-691	<i>Application of Risk-Informed Insights to Increase the Inspection Interval for Pressurized Water Reactor Vessels, Section XI, Division 1</i>	11/01E
	The industry topical report in support of the Code Case relies on information developed to re-evaluate present requirements related to pressure vessel embrittlement and the pressurized thermal shock screening criteria. This information has not yet been fully reviewed by NRC staff.	
N-702	<i>Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds, Section XI, Division 1</i>	12/01E
	A response to the NRC staff's request for additional information has not yet been received and therefore, insufficient information has been provided for the staff to make a determination relative to the acceptability of this Code Case.	

3. Unacceptable OM Code Cases

The following OM Code Cases were determined to be unacceptable for use by licensees in their inservice testing programs. The ASME issues OM Code Cases annually with publication of a new edition or addenda. No new OM Code Cases were added in this revision. To assist users of the OM Code, Column 3 of Table 3 lists the edition or addenda to which each Code Case was attached (E: edition; A: addenda), and whether the Code Case is new or reaffirmed.

Table 3. Unacceptable OM Code Cases

Code Case Number	Table 3 Unacceptable OM Code Cases	Date or Edition/ Addenda
	Summary of Basis for Exclusion	
OMN-10, Rev. 0	<i>Requirements for Safety Significance Categorization of Snubbers Using Risk Insights and Testing Strategies for Inservice Testing of LWR Power Plants</i>	July 1, 2000A
	The method used for categorizing snubbers could result in certain snubbers being inappropriately categorized as having low safety significance. These snubbers would not be adequately tested or inspected to provide assurance of their operational readiness. In addition, unexpected extensive degradation in feedwater piping has occurred which would necessitate a more rigorous approach to snubber categorization than presently contained in this Code Case.	

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants and licensees regarding the NRC staff's plans for using this draft regulatory guide. The NRC has issued this draft guide to encourage public participation in its development. *This regulatory guide does not approve the use of the Code Cases listed herein.*

REGULATORY ANALYSIS

This regulatory guide lists only the Code Cases that the NRC staff has determined to be unacceptable for use in the design and construction, inservice inspection, and inservice testing of nuclear power plant systems and components. Therefore, the staff has not prepared a regulatory analysis for this guide.

Previous reviews of ASME Code Cases discussed only the Code Cases that the NRC staff determined to be acceptable. This guide was developed at industry request to list the Code Cases that the NRC staff has determined to be unacceptable for use in licensee design and construction, inservice inspection, and inservice testing programs, including a summary of the basis for disapproval. Providing the basis for disapproval of a Code Case affords licensees the opportunity to address NRC staff concerns through 10 CFR 50.55a(a)(3), which permits the use of alternatives to the mandated ASME Code requirements provided the proposed alternatives result in an acceptable level of quality and safety and their use is authorized by the Director of the Office of Nuclear Reactor Regulation.

Providing the basis for disapproval of a Code Case in this guide will also conserve industry resources. The cognizant ASME committees will be able to focus their attention on specific issues. In addition, licensees who choose to request alternatives under 10 CFR 50.55a(a)(3) will understand the NRC staff concerns to be addressed. NRC resources will be saved because the 10 CFR 50.55a(a)(3) process will be more efficient. When the ASME modifies a Code Case to address NRC staff concerns, additional NRC resources will be saved because the NRC will be able to generically approve the Code Cases thus obviating the need for case-by-case approval. In addition, since many Code Cases generally simplify implementation of ASME Code provisions, reduce radiological exposure, or incorporate operating experience and technological improvements, it is anticipated that, when NRC staff concerns have been addressed, licensees will be able to reduce allocated resources even further.