



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

APR 12 1991

Docket No.: 50-270

MEMORANDUM FOR: Leonard A. Wiens, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II

FROM: C.Y. Cheng, Chief
Materials and Chemical Engineering Branch
Division of Engineering Technology

SUBJECT: OCONEE, UNIT 2 - REQUEST FOR RELIEF FROM HYDROSTATIC TEST
REQUIREMENTS OF SECTION XI FOLLOWING VALVE REPLACEMENTS

Plant Name: Oconee, Unit 2
Utility: Virginia Electric and Power Company
Docket No.: 50-270
TAC No.: 77999, 79000, and 79001
Lic. Status: Operating
Responsible PD: II-3
Review Branch: EMCB
Review Status: Complete

In response to your request, the Materials and Chemical Engineering Branch, Division of Engineering Technology, has reviewed and evaluated the information contained in letters dated October 11, 1990, and October 23, 1990, from Duke Power Company. Duke Power Company (licensee) submitted to the NRC a request for relief from the hydrostatic test requirements of the 1980 Edition through Winter 1980 Addenda of Section XI of the ASME Code for welds made after replacement of feedwater valves 2FDW-36 and 2FDW-141, and main steam valves 2SD-418, 2SD-419, 2SD-420, and 2SD-421 at Oconee Unit 2. The Section XI Code requires that a hydrostatic test of the welds be performed prior to resumption of service. The licensee provided in its submittal reasons why the requirement is impractical to perform and proposed alternatives to the requirement.

We have determined that the licensee has encountered a special circumstance that is covered by ASME Code Case N-416, "Alternative Rules for Hydrostatic Testing of Repair or Replacement of Class 2 Piping, Section XI, Division 1." This Code Case allows the hydrostatic test of welds in the situation encountered by the licensee to be deferred to the next regularly scheduled system hydrostatic test for that system. The licensee states in its letters that a 100% radiographic testing and a VT-2 inspection will be performed on Feedwater (FDW) systems welds for installing valve 2FDW-36 and that a visual examination (VT-2) and surface examination will be performed on other welds. These examinations satisfy the conditions stated in the Code Case. Since this Code Case has been reviewed and approved by the NRC as an acceptable Code Case and is listed in Regulatory Guide 1.147, "Inservice Inspection Code Case Acceptability, ASME Section XI, Division 1," Revision 8, August 1990, the staff, therefore, has determined that relief from the requirement is not necessary. The licensee should implement usage of the Code Case and indicate this usage in the appropriate inservice inspection related documents.

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Memo
[Signature]

L. Wiens

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Enclosure 1 provides appropriate pages of Regulatory Guide 1.147 and a copy of Code Case N-416.

This action completes work to be performed by the Materials and Chemical Engineering Branch, Division of Engineering Technology, under TAC Nos. 77999, 79000 and 79001.

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C.Y. Cheng, Chief
Materials and Chemical Engineering Branch
Division of Technology

Enclosures:
As stated

cc: J. Richardson
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Revision 8
August 1990

REGULATORY GUIDE

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REGULATORY GUIDE 1.147

INSERVICE INSPECTION CODE CASE ACCEPTABILITY ASME SECTION XI DIVISION 1

A. INTRODUCTION

Section 50.55a, "Codes and Standards," of 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires, in part, that each operating license for a boiling or pressurized water-cooled nuclear power facility and each construction permit for a utilization facility be subject to the conditions in paragraph (g), "Inservice Inspection Requirements," of § 50.55a. Paragraph (g) requires, in part, that Classes 1, 2, and 3 components and their supports meet the requirements of Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components,"¹ of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code or equivalent quality standards. Paragraph 50.55a(b), in part, references the latest editions and addenda in effect of Section XI of the Code and any supplementary requirements to that section of the Code. Footnote 6 to § 50.55a states that the use of specific Code Cases may be authorized by the Commission upon request pursuant to paragraph 50.55a(a)(2)(ii), which requires that proposed alternatives to the described requirements or portions thereof provide an acceptable level of quality and safety.

General Design Criterion 1, "Quality Standards and Records," of Appendix A, "General Design Criteria for Nuclear Power Plants," to 10 CFR Part 50 requires, in part, that structures, systems, and components important to safety be designed, fabricated, erected, and tested to quality standards commensu-

¹Copies may be obtained from the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017.

rate with the importance of the safety function to be performed. Where generally recognized codes and standards are used, Criterion 1 requires that they be identified and evaluated to determine their applicability, adequacy, and sufficiency and be supplemented or modified as necessary to ensure a quality product in keeping with the required safety function.

This regulatory guide lists those Section XI ASME Code Cases that are generally acceptable to the NRC staff for implementation in the inservice inspection of light-water-cooled nuclear power plants.

Any information collection activities mentioned in this regulatory guide are contained as requirements in 10 CFR Part 50, which provides the regulatory basis for this guide. The information collection requirements in 10 CFR Part 50 have been cleared under OMB Clearance No. 3150-0011.

B. DISCUSSION

The ASME Boiler and Pressure Vessel Committee publishes a document entitled "Code Cases."¹ Generally, the individual Code Cases that make up this document explain the intent of Code rules or provide for alternative requirements under special circumstances.

Most Code Cases are eventually superseded by revision of the Code and then are annulled by action of the ASME. In such instances, the intent of the annulled Code Case becomes part of the revised Code, and therefore continued use of the Code Case intent is sanctioned under the rules of the Code. In

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This guide was issued after consideration of comments received from the public. Comments and suggestions for improvements in these guides are encouraged at all times, and guides will be revised, as appropriate, to incorporate comments and to reflect new information or

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other instances, the Code Case is annulled because it is no longer acceptable or there is no further requirement for it. A Code Case that was approved for a particular situation and not for a generic application should be used only for the approved situation because annulment of such a Code Case could result in situations that would not meet Code requirements. The ASME considers the use of Code Cases to be optional for the user and not a mandatory requirement.

The Code Cases listed in this guide are limited to those cases applicable to Section XI of the Code.

All published Code Cases that are applicable to Section XI of the Code and were in effect on March 8, 1989, were reviewed for inclusion in this guide. Code Cases that are not listed herein are either not endorsed or will require supplementary provisions on an individual plant basis to attain endorsement status.

The endorsement of a Code Case by this guide constitutes acceptance of its technical position for applications not precluded by regulatory or other requirements or by the recommendations in this or other regulatory guides. Contingent endorsement if applicable is indicated in regulatory position 1 for specific cases. However, it is the responsibility of the user to make certain that no regulatory requirements are violated and that there are no conflicts with other recommended limitations resulting from Code Case usage.

Acceptance or endorsement by the NRC staff applies only to those Code Cases or Code Case revisions with the date of ASME approval as shown in the regulatory position of this guide. Earlier or later revisions of a Code Case are not endorsed by this guide. New Code Cases will require evaluation by the NRC staff to determine if they qualify for inclusion in the approved list. Because of the continuing change in the status of Code Cases, it is planned that this guide will require periodic updating to accommodate new Code Cases and any revision of existing Code Cases.

C. REGULATORY POSITION

1. The Section XI ASME Code Cases² listed below (by number, date of ASME approval,³ and title) are acceptable to the NRC staff for application in the inservice inspection of components and their

¹Lines indicate substantive changes from Revision 7.

²A numerical listing of the Code Cases appears in the appendix.

³When more than one date is given, the earlier date is that on which the Code Case was approved by the ASME, and the later date (or dates) is that on which the Code Case was reaf-

supports for water-cooled nuclear power plants. Their use is acceptable within the limitations stated in the "Inquiry" and "Reply" sections of each individual Code Case, within the limitations of such NRC or other requirements as may exist, and within the additional limitations recommended by the NRC staff and given with the individual Code Case in the list.

1705-1	3-1-76	Ultrasonic Examination—
N-98	11-20-78	Calibration Block Tolerances,
	1-21-82	Section XI
	12-5-84	
	12-5-87	
N-113-1	12-13-82	Basic Calibration Block for
	2-14-85	Ultrasonic Examination of
	2-14-88	Welds 10 in. to 14 in. Thick,
		Section XI, Division 1
1738	12-22-75	Examination — Acceptance
N-118	11-20-78	Standards for Surface Indica-
	1-21-82	tions in Cladding, Section XI
	1-21-85	
	1-21-88	

Code Case 1738 (N-118) is acceptable subject to the following condition in addition to those conditions specified in the Code Case. The last sentence of the "Reply" should be replaced with the following: The provisions of this Code Case may not be applied for the examination of clad surfaces of nozzles, including the inner surface of the nozzle-to-vessel insert welds.

N-211 ⁴	7-13-81	Recalibration of Ultrasonic
	7-13-84	Equipment Upon Change of
	5-7-87	Personnel, Section XI, Divi-
		sion 1
N-216	3-10-78	Alternative Rules for Reactor
	7-13-81	Vessel Closure Stud Examina-
	7-13-84	tion, Section XI, Division 1
	5-7-87	
N-234	1-8-79	Time Between Ultrasonic
	1-21-82	Calibration Checks, Section
	12-5-84	XI, Division 1
	12-5-87	
N-235	1-8-79	Ultrasonic Calibration Checks
	4-2-82	per Section V, Section XI, Di-
	2-14-85	vision 1
	2-14-88	
N-236-1	9-5-85	Repair and Replacement of
	9-5-88	Class MC Vessels, Section XI,
		Division 1

Code Case N-236-1 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case:

⁴The Code Case was annulled on 3-20-81 (ASME mandatory annulment date). It was reinstated on 7-13-81. Because there was no change in the Code Case, the NRC considers that the Code Case was in effect during the period 3-20-81 through 7-13-81.

N-401-1	5-4-88	Eddy Current Examination, Section XI, Division 1
N-402	2-20-84 2-23-87	Eddy Current Calibration Standard Material, Section XI, Division 1
N-406	4-5-84 5-7-87	Alternative Rules for Replacement, Section XI, Division 1
N-408-1	3-8-89	Alternative Rules for Examination of Class 2 Piping, Section XI, Division 1

Code Case N-408-1 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The applicant for an operating license should define the Class 2 piping subject to volumetric and surface examination in the Preservice Inspection for determination of acceptability by the NRC staff.

N-409-2	7-27-88	Procedure and Personnel Qualification Requirements for Ultrasonic Detection and Sizing of Flaws in Piping Welds, Section XI, Division 1
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Code Case N-409-2 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The applicant should give prior notification to the NRC of the intention to use the Code Case.

N-415	9-5-85 9-5-88	Alternative Rules for Testing Pressure Relief Devices, Section XI, Division 1
N-416	12-5-85 12-5-87	Alternative Rules for Hydrostatic Testing of Repair or Replacement of Class 2 Piping, Section XI, Division 1
N-419	7-18-85 7-18-88	Extent of VT-1 Examinations, Category B-G-1 of Table IWB-2500-1, Section XI, Division 1
N-426	7-18-85 7-18-88	Extent of VT-1 Examinations, Category B-G-2 of Table IWB-2500-1, Section XI, Division 1
N-427	12-5-85 12-5-88	Code Cases in Inspection Plans, Section XI, Division 1

Code Case N-427 is acceptable subject to the following condition in addition to those conditions specified in the Code Case. The sentence under (c)(1) should be replaced with the following:

N-429-1	2-23-87	Alternative Rules for Ultrasonic Instrument Calibration, Section XI, Division 1
N-432	2-20-86 2-20-89	Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temperbead Technique, Section XI, Division 1
N-435-1	7-30-86 7-30-89	Alternative Examination Requirements for Vessels with Wall Thickness 2 in. or less, Section XI, Division 1
N-436-1	12-7-87	Alternative Methods for Evaluation of Flaws in Austenitic Piping, Section XI, Division 1
N-437	7-30-86 7-30-89	Use of Digital Readout and Digital Measurement Devices for Performing Pressure Tests, Section XI, Division 1
N-4447	12-7-87	Preparation of Inspection Plans, Section XI, Division 1
N-445	5-7-87	Use of Later Editions of SNT-TC-1A for Qualification of Nondestructive Examination Personnel, Section XI, Division 1, 2, and 3
N-446	5-7-87	Recertification of Visual Examination Personnel, Section XI, Division 1
N-448	7-27-87	Qualification of VT-2 and VT-3 Visual Examination Personnel, Section XI, Division 1
N-449	7-27-87	Qualification of VT-4 Visual Examination Personnel, Section XI, Division 1
N-457	12-7-87	Qualification Specimen Notch Location for Ultrasonic Examination of Bolts and Studs, Section XI, Division 1
N-460	7-27-88	Alternative Examination Coverage for Class 1 and Class 2 Welds, Section XI, Division 1
N-461	11-30-88	Alternative Rules for Piping Calibration Block Thickness, Section XI, Division 1

Code Case N-461 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Thickness measurements and weld joint contour of the

*Valve stroke times may be documented outside of the IST program. However, if included within the IST program and it becomes necessary to revise the maximum stroke time required.

APPENDIX

NUMERICAL LISTING OF CODE CASES

N-98 (1705-1)	N-409-2
N-113-1	N-415
N-118 (1738)	N-416
N-211	N-419
N-216	N-426
N-234	N-427
N-235	N-429-1
N-236-1	N-432
N-278	N-435-1
N-306	N-436-1
N-307-1	N-437
N-308	N-444
N-311	N-445
N-335-1	N-446
N-343	N-448
N-355	N-449
N-356	N-457
N-375-2	N-460
N-389	N-461
N-401-1	N-463
N-402	N-465
N-406	N-472
N-408-1	

ENCLOSURE 1

**CASE
N-416**

CASES OF ASME BOILER AND PRESSURE VESSEL CODE

Approval Date: December 5, 1984

*See Numeric Index for expiration
and any reaffirmation dates.*

Case N-416

**Alternative Rules for Hydrostatic Testing of Repair or
Replacement of Class 2 Piping
Section XI, Division 1**

Inquiry: For Section XI, Division 1, repair or replacement of Class 2 piping that cannot be isolated by existing valves or that requires securing safety or relief valves from isolation, may the system hydrostatic test required by IWA-4400 (IWA-4210 in earlier Code editions) be deferred until the next regularly scheduled system hydrostatic test (IWC-5000) for that system?

Reply: It is the opinion of the Committee that the system hydrostatic test required by IWA-4400 (IWA-4210 in earlier Code editions) for repair or replacement

of Class 2 piping that cannot be isolated by existing valves or that requires securing safety or relief valves from isolation may be deferred until the next regularly scheduled system hydrostatic tests (IWC-5000), provided both of the following conditions are met.

(a) Prior to or immediately upon return to service, a visual examination (VT-2) for leakage shall be conducted during a system functional test or during a system inservice test in the repaired or replaced portion of the piping system.

(b) The repair or replacement welds shall be examined in accordance with IWA-4000 and IWA-7000 using volumetric examination methods (IWA-2230) for full penetration welds or surface examination methods (IWA-2220) for partial penetration welds.