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U.S. NUCLEAR REGULATORY COMMISSION

REGULATORY GUIDE

OFFICE OF NUCLEAR REGULATORY RESEARCH

REGULATORY GUIDE 1.84

DESIGN AND FABRICATION CODE CASE ACCEPTABILITY ASME SECTION III 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 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, "Nuclear Power Plant Components,"[1] of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code or equivalent quality standards. Footnote 6 to § 50.55a states that the use of specific Code Cases may be authorized by the Commission upon request pursuant to § 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 commensurate 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.

Criterion 30, "Quality of Reactor Coolant Pressure Boundary," of the same appendix requires, in part, that components that are part of the reactor coolant pressure boundary be designed, fabricated, erected, and tested to the highest quality standards practical.

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

Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50 requires, in part, that measures be established for the control of special processing of materials and that proper testing be performed.

This regulatory guide lists those Section III ASME Code Cases oriented to design and fabrication that are generally acceptable to the NRC staff for implementation in the licensing 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 to the Code and then are annulled by action of the ASME. In such cases, 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 other cases, 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 construction of the approved situation because annulment of such a Code Case could result in construction that would not meet Code requirements.

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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 accommodate comments and to reflect new information or experience.

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The Code Cases listed in this guide are limited to those cases applicable to Section III that are oriented toward design and fabrication.

All published Code Cases in the area of design and fabrication that are applicable to Section III of the Code and were in effect on December 8, 1987, were reviewed for inclusion in this guide. In addition to the listing of acceptable Code Cases, this revision of the guide includes listings of (1) Code Cases that were identified as acceptable in a prior version of this regulatory guide and that were annulled after the original issuance of this guide (June 1974) and (2) Code Cases that were identified as acceptable in a prior version of this regulatory guide and that were superseded by revised Code Cases after the original issuance of this guide (June 1974). Code Cases that are not listed herein are either not endorsed or will require supplementary provisions on an individual 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 is indicated in regulatory position C.1.c 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 revisions of existing Code Cases.

C. REGULATORY POSITION

1. The Section III ASME Code Cases[2] listed below (by number, date of ASME approval, and title) are acceptable to the NRC staff for application in the construction of components for light-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 given with the individual Code Case in the listing. The categorization of Code Cases used in this guide is intended to facilitate the Code Case listing and is not intended to indicate a limitation on its usage.

a. Design-oriented Code Cases (Code Case number, date of ASME approval,[3] and title):

(1) Code Cases applicable to piping design:

1745 (N-122)	03-01-76 01-08-79 01-21-82 01-21-85 01-21-88	Stress Indices for Structural Attachments, Class 1, Section III, Division 1
N-160-1	07-18-85	Finned Tubing for Construction, Section III, Division 1
N-453	12-07-87	Nickel-Chromium-Molybdenum-Copper Stainless Steel (UNS N08925) Welded Pipe for Class 2 and 3 Construction Section III, Division 1
N-454	12-07-87	Nickel-Chromium-Molybdenum-Copper Stainless Steel (UNS N08925) Wrought Fittings for Class 2 and 3 Construction Section III, Division 1
N-455	12-07-87	Nickel-Chromium-Molybdenum-Copper Stainless Steel (UNS N08925) Forged Flanges and Fittings for Class 2 and 3 Construction Section III, Division 1

(2) Code Cases applicable to valve design:

N-133-3	07-18-85	Use of SB-148 Alloys 952 and 954 Section III, Division 1, Class 3
N-282	05-15-80 05-25-83 07-30-86	Nameplates for Valves, Section III, Division 1, Class 1, 2, and 3 Construction
N-313	05-11-81 11-28-83 11-28-86	Alternate Rules for Half-Coupling Branch Connections, Section III, Division 1
N-394	02-20-84	Restricting Lift to Achieve Reduced Relieving Capacities of Full Lift, Nozzle Type, and Flat Seated Safety and Safety Relief Valves for Compressible Fluid Applications, Section III, Division 1, Classes 2 and 3
N-410	12-05-84	Certified Relieving Capacities of Pressure Relief Valves Having Set Pressure of 3 psig up to but Not Including 15 psig Installed for Overpressure Protection of Compressible Fluid Systems, Section III, Division 1, Classes 2 and 3

*Lines indicate substantive changes from Revision 25

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

[3]When 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(s) is that on which the Code Case was reaffirmed by the ASME.

N-442	02-23-87	1977 Addendum to ANSI/ASME PTC 25.3-1976, Safety and Safety Relief Valves, Class 1, 2, 3, and MC, Section III, Division 1

(3) Other Code Cases related to design:

N-119-6	09-05-85	Pump Internal Items, Section III, Division 1, Class 1, 2, and 3
N-196-1	01-08-79 01-21-82 01-21-85 01-21-88	Exemption from the Shakedown Requirements When Plastic Analysis is Performed for Section III Division 1, Class 1 and CS Construction
N-243	08-30-79 07-16-82 05-19-85	Boundaries Within Castings Used for Core Support Structures, Section III, Division 1, Class CS
N-247	07-09-79 01-21-82 01-21-85	Certified Design Report Summary for Component Standard Supports, Section III, Division 1, Class 1, 2, 3 and MC
N-309-1	12-05-85	Identification of Materials for Component Supports, Section III, Division 1
N-319	07-13-81 07-13-84	Alternate Procedure for Evaluation of Stresses in Butt Weld Elbows in Class 1 Piping, Section III, Division 1
N-341	06-17-82 05-19-85 02-23-87	Certification of Level III NDE Examiner, Section III, Division 1 and 2
N-411-1	02-20-86	Alternative Damping Values for Response Spectra Analysis of Classes 1, 2, and 3 Piping, Section III, Division 1

Code Case N-411-1 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: (1) The Code Case damping should be used completely and consistently, if used at all. (For equipment other than piping, the damping values specified in Regulatory Guide 1.61, "Damping Values for Seismic Design of Nuclear Power Plants," should be used.) (2) The damping values specified may be used only in those analyses in which current seismic spectra and procedures have been employed. Such use should be limited only to response spectral analyses (similar to that used in the study supporting its acceptance - Reference NUREG/CR-3526). The acceptance of the use with other types of dynamic analyses (e.g., time-history analysis or independent support motion method) is pending further justification. (3) When used for reconciliation work or for support optimization of existing designs, the effects of increased motion on existing clearances and on line mounted equipment should be checked. (4) This Code Case is not appropriate for analyzing the dynamic response of piping systems using supports designed to dissipate energy by yielding (i.e., the design of which is covered by Code Case N-420). (5) This Code Case is not applicable to piping in which stress corrosion cracking has occurred unless a case-specific evaluation is made and is reviewed by the NRC staff.

N-412	04-15-85	Alternative Rules for Witnessing the Piping System Pressure Tests of Classes 1, 2, and 3 Piping Systems, Section III, Division 1
N-420	02-14-85	Linear Energy Absorbing Supports for Subsection NF, Classes 1, 2, and 3 Construction, Section III, Division 1

Code Case N-420 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Each applicant desiring to use the Code Case should provide the following information prior to implementing the Case: (1) indication of systems in which energy-absorbing supports are to be used, (2) fatigue design, (3) piping system analysis results considering inelastic behavior of supports, and (4) plans for inservice examination of energy absorbers.

N-433	12-16-86	Non-Threaded Fasteners for Section III, Division 1, Class 1, 2, and 3 Component and Piping Supports, Section III, Division 1

b. Fabrication-oriented Code Cases:

(1) Code Cases related to welding and brazing:

N-154-1	12-05-85	Projection Resistance Welding of Valve Seats, Section III, Division 1, Class 1, 2 and 3 Valves
N-233	01-08-79 01-21-82 09-17-84	Alternate Rules for PWHT of P-No. 6, Group 4 Material for Section III, Division 1, Class 1, 2, or 3 Construction
N-260-2	12-05-85	Weld Repair of SA-182 Type 316 Forgings, Section III, Division 1, Classes 1, 2, 3, and MC

Code Case N-260-2 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Type 308 L welding materials should not be used to repair grade F 316 N forgings because of the differences in strength levels.

N-262	01-07-80 09-07-82 09-05-85	Electric Resistance Spot Welding for Structural Use in Component Supports, Section III, Division 1
N-304-4	02-23-87	Use of 20Cr-25Ni-6Mo (Alloy UNS N08366) Plate, Sheet, Strip and Welded Pipe, Class 2 and 3 Section III, Division 1
N-315	02-14-83 02-19-86	Repair of Bellows, Section III, Division 1

Code Case N-315 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: Prior to implementation of the Code Case, the applicant should present a description of the repair and a justification why the bellows should be repaired rather than replaced. Following receipt of approval for the repair, but prior to making the repair,

the applicant should present the results of the qualification on the full-scale facsimile bellows, including the design requirements, to ensure that the repair meets the requirements of the design specification.

N-316	12-11-81 09-17-84	Alternate Rules for Fillet Weld Dimensions for Socket Welded Fittings, Section III, Division 1, Class 1, 2, and 3
N-345-1	12-13-82	Attachment of AMS 5382 Alloy 31 Seat Rings by Friction Welding, Section III, Division 1, Classes 1, 2, and 3
N-357	12-13-82 05-19-85	Certification of Material for Component Supports, Section III, Division 1, Subsection NF
N-391	11-28-83	Procedure for Evaluation of the Design of Hollow Circular Cross Section Welded Attachments on Class 1 Piping, Section III, Division 1
N-392	11-28-83	Procedure for Evaluation of the Design of Hollow Circular Cross Section Welded Attachments on Classes 2 and 3 Piping, Section III, Division 1
N-393	11-28-83	Repair Welding Structural Steel Rolled Shapes and Plates for Component Supports, Section III, Division 1

(2) Other Code Cases related to fabrication:

N-215	05-15-78	Integrally Finned Titanium Tubes, Section III, Division 1, Class 3 Construction
N-237-2	05-25-83 07-30-86 12-07-87	Hydrostatic Testing of Internal Piping, Section III, Division 1, Classes 2 and 3
N-240	03-19-79 01-21-82 09-17-84	Hydrostatic Testing of Open Ended Piping, Section III, Division 1
N-241	07-09-79 01-21-82 09-17-84	Hydrostatic Testing of Piping, Section III, Division 1
N-362-2	07-12-84 07-27-87	Pressure Testing of Containment Items, Section III, Division 1, Classes 1, 2, and MC
N-368	07-06-83 06-30-87	Pressure Testing of Pump Discharge, Section III, Division 1, Classes 2 and 3

Code Case N-368 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants using this Code Case should provide information to demonstrate that the length of discharge piping is reasonably short.

N-369	02-14-83 02-19-86	Resistance Welding of Bellows, Section III, Division 1
N-414	02-20-86	Tack Welds for Class 1, 2, 3 and MC Components and Piping Supports, Section III, Division 1
N-430	02-28-86	Alternative Requirements for Welding Workmanship and Visual Acceptance Criteria for Class 2, 3 and MC Linear-Type and Standard Supports, Section III, Division 1

Code Case N-430 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: (1) The applicant should demonstrate that the applicable supports are not subject to cyclic loading in excess of 20,000 cycles and (2) the first sentence of 3.0(f)(1) should be replaced with the following: "For material 3/8 in. and less nominal thickness, undercut depth of 1/32 in. on one side of the member for the full length of the weld, or 1/32 in. on one side for one-half the length of the weld, and 1/16 in. for one-fourth the length of the weld on the face of a rectangular tube or one-fourth the length of the weld on the same side of the member is acceptable."

c. Code Cases with contingent approval:

N-31-1	07-18-85	Elastomer Diaphragm Valves, Section III, Class 2 and 3

Code Case N-31-1 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: Each applicant who applies the Code Case should indicate in the referencing Safety Analysis Report that the service life of the elastomer diaphragm should not exceed the manufacturer's recommended service life. This recommended service life should not exceed 1/3 of the minimum cycle life as established by the requirements of paragraph 3 of the Code Case. In addition, the service life of the elastomer diaphragm should not exceed 5 years, and the combined service and storage life of the elastomer diaphragm should not exceed 10 years.

N-62-4	09-05-85	Internal and External Valve Items, Section III, Division 1, Class 1, 2 and 3 Line Valves

Code Case N-62-4 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The Code requires that Class 1 and Class 2 valve manufacturers meet the provisions of NCA 4000, "Quality Assurance," and, in addition, Class 3 valve manufacturers should also meet the provisions of NCA 4000.

1720-2 (N-106-2)	11-20-78 08-28-81 09-17-84 09-17-87	Weld End Preparation for Section III, Division 1 Construction

Code Case 1720-2 (N-106-2) is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The acceptance of weld end preparations other than those shown in

Figures 1, 2, and 3 of the Code Case should be evaluated on a case-by-case basis.

1792-2 (N-155-2)	01-08-79 01-21-82 01-21-85 01-21-88	Fiberglass Reinforced Thermosetting Resin Pipe, Section III, Division 1

Code Case 1792-2 (N-155-2) is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The applicant should comply with the additional requirements that are specified in Regulatory Guide 1.72, "Spray Pond Piping Made from Fiberglass-Reinforced Thermosetting Resin."

N-192-2	09-16-81 09-17-84 09-17-87	Use of Braided Flexible Connectors, Section III, Division 1, Class 2 and 3

Code Case N-192-2 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: The applicant should indicate system application, design and operating pressure, and pressure-temperature rating of the flexible hose. Data to demonstrate compliance of the flexible hose with NC/ND-3649, particularly NC/ND-3649.4(e), are required to be furnished with the application.

N-284	08-25-80 05-25-83 07-30-86	Metal Containment Shell Buckling Design Methods, Section III, Division 1, Class MC

Code Case N-284 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Prior to implementation of the Code Case, the applicant must demonstrate to the satisfaction of the NRC staff (via Safety Analysis Report) that any axisymmetric techniques that are proposed will be applicable to a vessel having large asymmetric openings and that the overall margin used to prevent shell buckling is acceptable.

N-292	01-05-81 11-28-83 07-30-86	Depositing Weld Metal Prior to Preparing Ends for Welding, Section III, Division 1, Class 1, 2, and 3 Construction

Code Case N-292 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case: Class 3 piping that is longitudinally welded and that has a weld efficiency factor of 1.0 as selected from Table ND-3613.4-1 should receive a 100 percent volumetric examination (RT or UT) of the deposited weld metal in accordance with the requirements of ND-5000.

N-318-3	09-05-85	Procedure for Evaluation of the Design of Rectangular Cross Section Attachments on Class 2 or 3 Piping, Section III, Division 1

Code Case N-318-3 is acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Applicants should identify in their Safety Analysis Report: (1) the method of lug attachment, (2) the piping system involved, and (3) the location in the system where the Case is to be applied.

2. Code Cases that were endorsed by the NRC in a prior version of this guide and were later annulled by action of the ASME should be considered as deleted from the list of acceptable Code Cases as of the date of the ASME action that approved the annulment. Such Code Cases, which were annulled on or after July 1, 1974, are listed below by number, effective dates,[4] and title.[5]

1361-2	03-09-72 03-01-79	Socket Welds, Section III

Code Case 1361-2 was acceptable when used in connection with Section III, paragraph NB-3356, Fillet Welds.

1461-1[6]	03-09-72 02-16-77	Electron Beam Welding, Section 1, III, and VIII, Division 1 and 2
1470-2[7]	12-18-72 11-04-74	External Pressure Charts for High-Strength Carbon Steels and for Low-Alloy Steels, Section VIII, Division 1 and 2, and Section III
1471-1	03-09-72 01-01-78	Vacuum Electron Beam Welding of Tube Sheet Joints, Section III
1477-1	03-09-72 01-01-78	Use of 1970 Addenda of ANSI B31.7, Section III
1494-1	03-03-73 01-01-78	Weld Procedure Qualification Test, Section III
1506	12-13-71 01-01-78	Stress Intensification Factors, Section III, Class 2 and 3 Piping
1516-2 (N-24)	08-11-75 07-01-78	Welding of Seats or Minor Internal Permanent Attachments in Valves for Section III Applications
1516-2 (N-24)	11-20-78[8] 01-01-80	Welding of Seats or Minor Internal Permanent Attachments in Valves for Section III Applications

[4]Earlier date–date Code Case was approved by ASME; later date–date Code Case was annulled. Where more than two dates appear, the last date is the date that the Code Case was annulled. The middle date (or dates) was the date of reaffirmation of the Code Case.

[5]Code Cases 1355-3, 1534, and 1554, which were listed in the original issue of this guide, were annulled by ASME action prior to July 1, 1974.

[6]Code Case 1461-1 is no longer listed as a Section III Code Case and is therefore deleted from the acceptable listing.

[7]The annulment of Code Case 1470-2 was effective upon ASME approval of Code Case 1630. However, because of an oversight, the annulment was not noted until publication of Supplement No. 13 to the 1974 Code Cases.

[8]This revision of the Code Case was originally approved by the ASME on 8-11-75 and was annulled on 7-1-78 because of the publication of revisions to Section III in the Winter 1977 Addenda. However, the users did not believe that the Code Case was covered in the Code revision; therefore, ASME reaffirmed the Case on 11-20-78. Because of these circumstances and because there were no changes in the Code Case, the NRC considers that this Case was in effect during the period 7-1-78 through 11-20-78.

1533[9]	06-14-72 07-01-75	Pressure Temperature Ratings of SA-351 Grades CF8A, CF3, and CF3M, Section III
1535-2	04-30-73 03-21-77	Hydrostatic Testing of Section III, Class 1 Valves
1536	08-14-72 07-01-77	Closing Seam for Electrical Penetrations for Section III, Class 2, 3, and MC
1539-1 (N-30-1)	11-21-77 01-01-81	Metal Bellows and Metal Diaphragm Stem Sealed Valves, Section III, Division 1, Classes 1, 2, and 3
1541-3 (N-32-3)	05-15-78 07-01-79	Hydrostatic Testing of Embedded Class 2 and Class 3 Piping for Section III, Division 1 Construction
N-32-4	03-16-81 03-16-84	Hydrostatic Testing of Embedded Class 2 and 3 Piping for Section III, Division 1 Construction

Code Case N-32-4 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case:

The acceptance was based on the following clarification and interpretation. Code Case N-32-4 does not replace paragraph NC/ND 6129, "Provisions for Embedded or Inaccessible Welded Joints in Piping," of the Code. The intent of the Code Case is to (1) provide additional testing above Code requirement and (2) permit liquid penetrant or magnetic particle testing in place of radiographic testing for Class 3 piping with 3/8" nominal wall thickness or less.

Paragraph (1) contains an additional requirement to the Code. It was, therefore, acceptable but unnecessary to include in the Code Case. Paragraph (2) is a variation in the volumetric examination technique and was acceptable as written. Paragraph (3) contains an additional requirement and is not a relaxation of the Code. It was, therefore, acceptable but unnecessary to include in the Code Case.

1552-1 (N-35-1)	08-29-77 07-01-79	Design by Analysis of Section III, Class 1 Valves
1553-1[9]	03-03-75 01-01-76	Upset Heading and Roll Threading of SA-453 for Bolting in Section III
1555-1	01-14-77 01-01-78	Certification of Safety Relief Valves, Section III, Division 1
1569	03-03-75[10] 07-01-79	Design of Piping for Pressure Relief Valve Station, Section III

Code Case 1569 was acceptable subject to compliance with the recommendations contained in Regulatory Guide 1.67, "Installation of Overpressure Protection Devices."

[9]Code Case was annulled on date as indicated, but the annulment was first indicated in Revision 12 to this guide.

[10]Corrected date.

1573	04-30-73 01-01-78	Vacuum Relief Valves, Section III
1574	04-30-73 12-31-74	Hydrostatic Test Pressure for Safety Relief Valves, Section III
1580-1	11-05-73 01-01-78	Buttwelded Alignment Tolerance and Acceptable Slopes for Concentric Centerlines for Section III, Class 1, 2, and 3 Construction
1581	06-25-73 03-01-79	Power-Operated Pressure Relief Valves, Section III
1588 (N-46)	08-13-73 03-19-79 03-19-82	Electro-Etching of Section III Code Symbols
1601	11-05-73 07-01-74	Limits of Reinforcement for Two-Thirds Area, Section III, Class 1
1606-1	12-16-74 07-01-77	Stress Criteria Section III, Classes 2 and 3 Piping Subject to Upset, Emergency, and Faulted Operating Conditions

Code Case 1606-1 was acceptable subject to the interpretation that the stress limit designations of "Upset," "Emergency," and "Faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

1607-1	11-04-74 07-01-77	Stress Criteria for Section III, Classes 2 and 3 Vessels Designe to NC/ND-3300 Excluding th NC-3200 Alternate

Code Case 1607-1 was acceptable subject to the interpretation that the stress limit designations of "Upset," "Emergency," and "Faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

N-55-1 (1609)	04-05-84 04-05-87	Inertia and Continuous Drive Friction Welding, Section III, Division 1
1614	12-17-73[10] 01-01-79	Hydrostatic Testing of Piping Prior To or Following the Installation of Spray Nozzles for Section III, Classes 1, 2, and 3 Piping Systems
1620 (N-61)	03-02-74 01-08-79 01-08-82	Stress Category for Partial Penetration Welded Penetrations, Section III, Class 1 Construction
1623	03-02-74 03-01-79	Design by Analysis for Section III, Class I Sleeve-Coupled and Other Patented Piping Joints
1630-1 (N-66-1)	07-10-78 07-10-81	External Pressure Charts for High Yield Strength Carbon Steels and Low Alloy Steels. (Yield Strengt above 38 Ksi to 60 Ksi Inclusive.) For Section III, Class 1, 2, 3, and MC

1630-1 (N-66-1)	12-11-81[11] 12-05-84 12-05-87	External Pressure Charts for High Yield Strength Carbon Steels and Low Alloy Steels. (Yield Strength above 38 Ksi to 60 Ksi Inclusive.) Section III, Division 1, Class 1, 2, 3, and MC
1633	04-29-74 01-01-78	Brazing of Seats to Class 1, 2, and 3 Valve Body or Bonnets, Section III
1635-1[12]	08-12-74 07-01-77	Stress Criteria for Section III, Class 2 and 3 Valves Subjected to Upset, Emergency, and Faulted Operating Conditions

Code Case 1635-1 was acceptable subject to the interpretation that the stress limit designations of "Upset," "Emergency," and "Faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

1636-1[12]	08-12-74 07-01-77	Stress Criteria for Section III, Class 2 and 3 Pumps Subjected to Upset, Emergency, and Faulted Operating Conditions

Code Case 1636-1 was acceptable subject to the interpretation that the stress limit designations of "Upset," "Emergency," and "Faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

1651	08-12-74 03-01-79	Interim Requirements for Certification of Component Supports, Section III, Subsection NF
1657	11-04-74 07-01-77	Stress Criteria for Class 2 and 3 Atmospheric and Low Pressure (0-15 psig) Steel Storage Tanks
1659	11-04-74 07-01-77	Interconnection of Two Piping Systems for Section III, Class 1, 2, and 3 Construction
1660 (N-77)	11-04-74 03-01-79	Overpressure Protection Under Emergency Operating Conditions for Section III, Class 1
1661	11-04-74 01-01-78	Postweld Heat Treatment P-No. 1 Materials for Section III, Class 1 Vessels
1662	11-04-74 01-01-78	Shop Assembly of Components, Appurtenances and Piping Subassemblies for Section III, Class 1, 2, 3 and MC Construction
1665 (N-81)	11-04-74 07-01-78	Pressure-Temperature Ratings for Class 1 Valves Made from 5 Cr-1/2 Mo, Section III
1672	11-04-74 03-21-77	Nuclear Valves for Section III, Division 1, Class 1, 2, 3 Construction
1675	12-16-74 07-01-76	Tubesheet to Shell or Formed Head Weld Joints, Section III, Class 1 Vessels
1676[9]	12-16-74 07-01-76	Clarification of Stress Intensities in Curved Pipe or Welded Elbows, Section III
1677 (N-82)	12-16-74 03-01-79	Clarification of Flange Design Loads, Section III, Class 1, 2, and 3
1678	12-16-74 01-08-79 01-01-80	Butterfly Valves of Circular Cross Section Larger than 24 in. NPS for Section III, Class 2 and 3 Construction
1681-1[13] (N-84)	03-03-75 03-01-79	Organizations Accepting Overall Responsibility for Section III Construction
1683-1	03-01-76 07-01-76	Bolt Holes for Section III, Class 1, 2, 3 and MC Component Supports
1685	04-28-75 01-01-78	Furnace Brazing Section III, Class 1, 2, 3 and MC Construction
1686	03-03-75 01-01-78	Furnace Brazing, Section III, Subsection NF, Component Supports
1689-1	09-10-76 01-01-78	Alternate PWHT Time and Temperature for SA-182 Grade F-22, SA-387 Grade 22, Class 2, and SA-335 Grade P-22 Section III, Class 1, 2, 3 and CS

Code Case 1689-1 was acceptable subject to the following condition in addition to that specified in the Code Case: The alternate postweld heat treatment should be prequalified along with the applicable welding procedure in accordance with ASME Section IX.

1692 (N-90)	04-28-75 07-01-78	Rules for Design of Welded Class 1 Pumps
1695-1	11-03-75 01-01-78	Brazing, Section III, Division 1, Class 3
1700 (N-94)	11-03-75 03-19-79 03-19-82	Determination of Capacities of Liquid Relief Valves, Section III, Division 1, Class 1, 2, and 3
1701-2 (N-95-2)	07-09-79 07-09-82	Determination of Capacities of Vacuum Relief Valves, Section III, Division 1, Classes 2, 3, and MC and Division 2 Concrete Containments
1702-1 (N-96-1)	07-11-77 01-01-80	Flanged Valves Larger than 24 inches for Section III, Division 1, Class 1, 2 and 3 Construction
1703	06-30-75 01-01-78	Brazing of Copper Alloys Section III, Class 2
1706	06-30-75 12-31-75	Data Report Forms for Component Supports, Section III, Class 1, 2 and 3
1711 (N-100)	11-03-75 01-08-79 01-21-82 01-01-83	Pressure Relief Valve Design Rules, Section III, Division 1, Class 1, 2 and 3

[11] The Code Case was annulled on July 10, 1981 (ASME mandatory annulment date). It was reinstated on December 11, 1981. Because of the circumstances and because there were no changes in the Code Case, the NRC considers that this Case was in effect during the period of 7-10-81 through 12-11-81.

[12] Code Cases 1635 and 1636 were approved by ASME on July 1, 1974, and revised on August 12, 1974. Because Code Cases 1635 and 1636 were not in effect on September 1, 1974, they are not included in this guide.

[13] Code Case 1681 was approved by ASME on 12-16-74 and revised on 3-3-75. Because Code Case 1681 was not in effect on March 31, 1975, the Code Case was not included in this guide.

Code Case 1711 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. The following information should be provided in the Safety Analysis Report:

(1) If stress limits are used in excess of those specified for the upset operating condition, it should be demonstrated how the pressure relief function is ensured. Refer to paragraph 3.1, Section I, of the Case for Class 1 and paragraph 3.2, Section II, of the Case for Class 2 and 3 pressure relief valves.

(2) If Case 1660 is to be used in conjunction with this Case, it should be stated that the stress limits of Case 1660 supersede those of paragraph 3.2(b), Section I, of Case 1711. Functional assurance of (1) above is required in all situations.

1712	08-11-75	Nameplates and Stamping for Section III, Division 1, Class 1, 2, 3 and MC Construction as Referenced in NA-8300
(N-101)	03-01-79	
1718[9]	08-11-75	Design of Structural Connections for Linear Type Component Supports, Section III, Division 1, Class 1, 2 and 3 and MC
	07-01-76	
1719[9]	08-11-75	Single-Welded, Full-Penetration Sidewall Butt Joints in Atmospheric Storage Tanks, Section III, Division 1, Class 2
	07-01-76	
1726	11-03-75	Refinement of Low Alloy Steel Heat Affected Zone Under Overlay Cladding, Section III, Division 1, Class 1 Components
(N-109)	03-01-79	
1727	12-22-75	Alternate Test Fluids, Section III, Division 1
(N-110)	01-01-79	

Code Case 1727 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The applicant should provide justification in the referencing Safety Analysis Report for the fluid selected for use in the pressure test. The information provided should demonstrate that the fluid selected will not have deleterious effects on the material of the pressure boundary and that the fluid may be safely used at the specified temperature and pressure of the test. When the fluid selected for use is the operating fluid, additional information is not required.

1729	11-03-75	Minimum Edge Distance - Bolting for Section III, Division 1, Class 1, 2, and 3 and MC Construction of Component Supports
(N-111)	03-01-79	
1732	11-03-75	Hardsurfaced Valves with Inlet Connections less than 2-in. Nominal Pipe Size for Section III, Division 1 Class 1 and 2 Construction
(N-114)	01-01-79	
1733	11-03-75	Evaluation of Safe Shut Down Earthquake Loadings for Section III, Division 1, Class MC Containment Vessels
(N-115)	01-01-78	
1734	11-03-75	Weld Design for Use for Section III, Division 1, Class 1, 2, 3 and MC Construction of Component Support
(N-116)	01-01-78	

Code Case 1734 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: If the configuration of Figure 1 of the Code Case is used for Class 1 and MC component supports, full penetration welds should be used. The application of the configuration shown in Figures 2 and 3 should be restricted to the welding of cans for spring encapsulation in spring hangers. In Figure 3, the length of the leg of the fillet weld adjacent to the plate should be equal to the thickness of the exposed end of the plate; also, the leg of the fillet weld adjacent to the shell should be equal to the thickness of the exposed end of the shell.

1739-4	11-17-80	Pump Internal Items, Section III,
(N-119-4)	12-01-83	Division 1, Class 1, 2, and 3
1744	03-01-76	Carbon Steel Pipe Flanges Larger
(N-121)	03-01-79	than 24in., Section III, Division 1, Class 2 and 3 Construction
1765	04-26-76	Machining After Hydrostatic Testing
	07-01-77	Class 2 and 3 Construction, Section III, Division 1
1768	06-29-76	Permanent Attachments to Containment Vessels–Class MC, Section III,
	01-01-78	Division 1
1769-1	02-16-77	Qualification of NDE Level III Per-
	10-01-77	sonnel, Section III, Division
1774-1	07-11-77	Minimum Wall Thickness for Class
(N-142-1)	01-01-80	and 3 Valves, Section III, Division 1
1775	08-13-76	Data Report Forms for Core Support Structures, Class CS, Section III,
	08-13-79	Division 1
1780-1	07-10-78[10]	Hydrostatic Testing and Stamping
(N-146-1)	12-11-81	of Components, Section III, Divi-
	01-01-82	sion 1 Construction

Code Case 1780-1 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: On a generic basis, the application of the Code Case is limited to pumps and valves. Application to other components should be treated on a case-by-case basis. Each licensing application in which the Code Case is to be used should contain information showing that, as a minimum, the closure fixture will impose loads that result in stresses equal to or greater than those induced during the hydrostatic test of a complete pump assembly. A closure fixture for the part being tested that is similar in size and shape to the actual mating part is considered adequate to impose these loads. It is not intended that piping reaction loadings be simulated in the hydrostatic testing.

1783-1	01-14-77	Qualification of Nondestructive
	01-01-79	Examination Personnel, Section III, Division 1

Code Case 1783-1 was acceptable subject to the following condition in addition to those conditions

specified in the Code Case: The first sentence of paragraph (1) should be replaced with the following: "The certification of the Level III nondestructive examination personnel for the purpose of this Section of the Code shall be the responsibility of the employer of the Level III individual. If the employer is not a Certificate Holder, then the verification of such certificate is the responsibility of the Certificate Holder."

1791	01-14-77	Projection Resistance Welding of
(N-154)	01-14-80	Valve Seats, Section III, Division 1, Class 1, 2 and 3 Valves
1796	01-14-77	Body Neck Thickness Determina-
(N-159)	07-01-78	tion for Valves with Inlet Connections 4-Inch Nominal Pipe Size and Smaller, Section III, Division 1, Class 1, 2, and 3
1808	02-16-77	F-Number Classification of Low
	01-01-78	Alloy and Carbon Steel Bare Rod Electrodes Sections I, II, III, IV, V, VIII, and IX
1812	03-23-77	Size of Fillet Welds for Socket Weld-
(N-174)	01-07-80	ing of Piping, Section III, Division 1
	01-01-81	
1818	03-23-77	Welded Joints in Component
(N-175)	07-01-79	Standard Supports, Section III, Division 1

Code Case 1818 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: That portion of the unwelded housing that is limited to 90° maximum should include a minimum of two sectors that are uniform in length.

N-179	07-11-77	Openings in Valves for Section III,
	07-11-80	Division 1, Class 1, 2 and 3 Construction
N-182	07-11-77	Alternate Rules for Procedure Qual-
	07-01-81	ification Base Material Orientation, Section III, Division 1, Class 2 and 3 Construction
N-184	07-11-77	Roll Threading of SA-453 Bolting
	07-01-79	for Section III, Division 1, Class 1, 2, 3 or CS Construction
N-189	08-29-77	Primary Membrane Plus Primary
	07-01-79	Bending Stress Intensity Limits for Other Than Solid Rectangular Sections for Section III, Division 1, Class MC Construction
N-193	11-21-77	Use of SB-61 and SB-62 Bronze for
	11-21-80	Section III, Division 1, Class 3 Flange and Socket Weld End Valves
N-199	03-20-78	Intervening Elements, Section III,
	01-01-81	Division 1, Classes 1, 2, 3 and MC Component Construction

Code Case N-199 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The applicant should provide information in the referencing Safety Analysis Report that demonstrates that all intervening elements have been designed in compliance with the requirements of the respective design specification.

1693	03-20-78	Welding Procedure Qualification of
(N-212)	01-01-81	Dissimilar Metal Welds When "Buttering" with Alloy Weld Metal and Heat Treatment May Be Involved, Section III, Division 1, and Section IX
N-214-2	05-25-83	Use of SA-351 Grade CN7M, for
	12-31-83	Valves, Section III, Division 1
N-217-1	01-07-80	Postweld Heat Treatment of Weld
	09-07-82	Deposit Cladding on Classes 1, 2, 3,
	12-05-84	MC, and CS Items, Section III, Divi-
	09-05-85	sion 1
	02-23-87	
N-220	08-28-78	Code Effective Date for Component
	07-13-81	Supports, Section III, Division 1
	07-13-84	
N-226	11-20-78	Temporary Attachment of Thermo-
	01-01-80	couples, Section III, Division 1, Class 1, 2 and 3 Component Construction
N-228	03-19-79	Alternate Rules for Sequence of
	03-19-82	Completion of Code Data Report Forms and Stamping for Section III, Class 1, 2, 3 and MC Construction
N-229	01-08-79	Alternate Rules for Fabrication
	01-21-82	Welding SB-148 Alloy CDA 954 for
	01-21-85	Section III, Division 1, Class 3
	01-21-88	Construction
N-238	05-14-79	High Temperature Furnace Brazing
	01-01-82	of Seat Rings in Valve Bodies or Bonnets for Section III, Division 1, Class 1, 2, and 3 Valves

Code Case N-238 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: The furnace brazing process procedure qualification should include a verification for nonsensitization as given in ASTM A 262-70, Practices A or E, or ASTM A 708-74 whenever materials subject to sensitization are to be brazed. Documentation is required that a nonsensitizing brazing procedure was employed for valves produced to this Case.

N-252	11-19-79	Low Energy Capacitive Discharge
	07-01-82	Welding Method for Temporary or Permanent Attachments to Components and Supports, Section III, Division 1, and XI

Code Case N-252 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: The applicant should indicate in the Safety Analysis Report the application, the material, and the material thickness to which the strain gage or thermocouple will be attached by CD welding.

N-261	05-15-80 12-13-82	Weld Procedure Qualification for Materials with Impact Requirements for Section III, Division 1, Class 3 Construction
N-263	03-17-80 03-17-83	Alternate Thread Forms, Series and Fits for Component Supports, Section III, Division 1

Code Case N-263 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. The following information should be provided in the Safety Analysis Report: (1) a description of the application, (2) a need for the use of the Code Case, and (3) a demonstration that support design will withstand maximum conditions of loading with the worst combination of thread tolerance.

N-271	03-17-80 02-14-86	Simplified Method for Analyzing Flat Face Flanges with Metal to Metal Contact Outside the Bolt Circle for Section III, Class 2, 3, and MC Construction
N-272	05-15-80 01-01-82	Compiling Data Report Forms, Section III, Division 1
N-275	05-15-80 12-07-82 12-31-83	Repair of Welds, Section III, Division 1

Code Case N-275 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Use of the Code Case is applicable only when the removal of an indication requires that the full weld thickness be removed and, in addition, the backside of the weld assembly joint is not accessible for the removal of examination material. If an indication is removed and weld-metal layers still remain, it is not acceptable to gouge through the wall in order to qualify for use of the Code Case. Instead, examination of the cavity is required when such an indication has been removed.

N-276	03-17-80 02-14-83 02-14-86	Welding of SA-358 Pipe, Section III, Division 1
N-279	05-15-80 07-13-81	Use of Torquing as a Locking Device for Section III, Division 1, Class 1, 2, 3, and MC Component Supports

Code Case N-279 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: When torquing or other preloading is used as a locking device and the joint is later unloaded or disassembled, the bolting should be replaced unless it can be demonstrated or proved to the authorized nuclear inspector that the original bolting has not been permanently strained.

N-280	05-15-80 07-01-81	Alternate Rules for Examination of Welds in Section III, Class 3 Storage Tanks
N-281	05-15-80 07-01-81	Welding Operator Performance Qualification, Section III, Division 1
N-300	11-17-80 12-01-83	Pressure-Temperature Ratings, Hydrostatic Tests, and Minimum Wall Thickness of Valves, Section I Division 1, Class 1
N-302	03-16-81 11-28-83	Tack Welding, Section III, Division 1, Construction
N-309	05-11-81 05-11-84	Identification of Materials for Component Supports, Section III, Division 1
N-314	05-11-81 05-11-84	Alternate Rules for Thread Engagement, Section III, Division 1

Code Case N-314 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Applicants should identify in their Safety Analysis Report: (1) the minimum length of thread engagement and (2) the procedure used to establish thread engagement.

N-320	07-13-81 12-31-83	Alternate PWHT for SA-487, Grade CA6NM, Section III, Division 1
N-328	12-11-81 09-17-84 09-17-87	Thermit Brazing or Welding of Nonstructural Attachments, Section III, Division 1
N-336	06-17-82 06-30-83	Examination of Welds Inaccessible During Pressure Test, Section III, Division 1, Class MC
N-339	06-17-82 09-17-84	Examination of Ends of Fillet Welds, Section III, Division 1 Classes 1, 2, and MC
N-346	06-17-82 05-19-85 06-30-86	Explosive Welding, Section III, Division 1
N-347	12-07-82 12-13-85	Continuous Electric Resistance Seam Welding of P-No. 8 Materials for Component Supports, Section III, Division 1
N-349	07-16-82 12-31-85	Pressure Testing Piping Systems, Section III, Division 1, Classes 2 and 3
N-350	12-07-82 09-05-85	Postweld Heat Treatment–Thickness of Material, Section III, Division 1

Code Case N-350 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants wishing to use this Case for other than P-1 materials should demonstrate that the use of this Case will not adversely affect the required material properties.

N-359	12-13-82 12-31-84	Weld Connection for Coaxial Cylinders, Section III, Division 1, Class 1
N-376	05-25-83 07-30-86	Pressure Testing of Embedded Class 2 and 3 Piping, Section III, Division 1
N-377	04-04-83 12-31-83	Effective Throat Thickness of Partial Penetration Groove Welds, Section III, Division 1, Classes 1, 2, and
N-383-1	07-18-85 09-05-85	Weld Repair of SA-182 Austenitic Forgings, Section III, Division 1, Classes 1, 2, and 3

Code Case N-383 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants who apply the provisions of this Case to permit material manufacturers to weld repair austenitic forgings without re-solution heat treatment should provide justification to the NRC staff (via the Safety Analysis Report) why this is acceptable for their applications, including their evaluation of the susceptibility for stress corrosion cracking.

N-397	02-20-84 02-20-87	Alternative Rules to the Spectral Broadening Procedures of N-1226.3 for Classes 1, 2, and 3 Piping, Section III, Division 1

Code Case N-397 was acceptable subject to the following condition in addition to those conditions specified in the Code Case. The Code Case is acceptable for specific plant applications on a case-by-case basis pending revision of Regulatory Guide 1.122, "Development of Floor Design Response Spectra for Seismic Design of Floor-Supported Equipment or Components."

N-413	02-14-85 02-14-88	Minimum Size of Fillet Welds for Subsection NF Linear Type Supports, Section III, Division 1
N-421	02-14-85 05-19-85 06-30-86	Brazing Using a Radiant Energy Source, Section III, Division 1

3. Code Cases that were endorsed by the NRC in a prior version of this guide and were superseded by revised Code Cases on or after July 1, 1974, should be considered as not endorsed as of the date of the ASME action that approved the revised version of the Code Cases. These Code Cases that are no longer endorsed are listed in the following by number, effective dates,[14] and title.

1508[15]	12-13-71 06-30-75	Allowable Stresses, Design Intensity and/or Yield Strength Values, Section I, III, and VIII, Divisions 1 and 2
1516-1	06-25-73 08-11-75	Welding of Seats in Valves for Section III Applications
1539 (N-30-1)	11-06-72 11-21-77	Metal Bellows and Metal Diaphragm Stem Sealed Valves, Section III, Classes 1, 2, and 3
1540-1	03-03-73 01-14-77	Elastomer Diaphragm Valves, Section III, Classes 2 and 3
1540-2 (N-31)	01-14-77 01-07-80 02-14-83 07-18-85	Elastomer Diaphragm Valves, Section III, Class 2 and 3

Code Case 1540-2 (N-31) was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: Each applicant who applies the Code Case should indicate in the referencing Safety Analysis Report that the service life of the elastomer diaphragm should not exceed the manufacturer's recommended service life. This recommended service life should not exceed 1/3 of the minimum cycle life as established by the requirements of paragraph 3 of the Code Case. In addition, the service life of the elastomer diaphragm should not exceed 5 years, and the combined service and storage life of the elastomer diaphragm should not exceed 10 years.

1541-1	08-13-73 09-30-76	Hydrostatic Testing of Embedded Class 2 and Class 3 Piping for Section III Construction
1541-2	09-30-76 05-15-78	Hydrostatic Testing of Embedded Class 2 and Class 3 Piping for Section III, Division 1 Construction
1552	12-18-72 08-29-77	Design by Analysis of Section III, Class 1 Valves
1553	12-18-72 03-03-75	Upset Heading and Roll Threading of SA-453 for Bolting, Section III
1555	12-18-72 01-14-77	Certification of Safety Relief Valves on Liquids
1606	11-05-73 12-16-74	Stress Criteria for Section III, Class 2 and 3 Piping Subjected to Upset, Emergency, and Faulted Operating Conditions

Code Case 1606 was acceptable subject to the interpretation that the stress limit designations of "Upset," "Emergency," and "Faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

1607	11-05-73 11-04-74	Stress Criteria for Section III, Classes 2 and 3 Vessels Subjected to Upset, Emergency, and Faulted Operating Conditions

Code Case 1607 was acceptable subject to the interpretation that the stress limit designations of "Upset," "Emergency," and "Faulted" do not necessarily imply agreement with specified plant conditions applicable to ASME Code Class 2 and 3 components for fluid systems. These designations should be established and justified in the design specifications.

1609-1 (N-55)	03-01-76 08-28-78 07-13-81 04-05-84	Inertia and Continuous Drive Friction Welding, Section I, III, IV, VIII, Division 1 and 2, and IX
1621-2 (N-62-2)	05-25-77 05-15-80 05-25-83 07-18-85	Internal and External Valve Items, Section III, Division 1, Class 1, 2 and 3 Line Valves

Code Case 1621-2 (N-62-2) was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The Code requires that Class 1 and Class 2 valve manufacturers meet the provisions of NCA 4000, "Quality Assurance,"

[14]Earlier date–date Code Case was approved by ASME; later date–date revision of Code Case was approved by ASME.

[15]Code Case 1508 is no longer listed by ASME as a Section III Code Case and is therefore deleted from the acceptable listing.

and, in addition, Class 3 valve manufacturers should also meet the provisions of NCA 4000.

N-62-3	07-18-85 09-05-85	Internal and External Valve Items, Section III, Division 1, Class 1, 2 and 3 Line Valves

Code Case N-62-3 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The Code requires that Class 1 and Class 2 valve manufacturers meet the provisions of NCA 4000, "Quality Assurance," and, in addition, Class 3 valve manufacturers should also meet the provisions of NCA 4000.

1630 (N-77)	11-04-74 07-10-78	External Pressure Charts for High Yield Strength Carbon Steels and Low Alloy Steels. (Yield strength above 38 Ksi to 60 Ksi Inclusive.) For Section III, Class 1, 2, 3, and MC; and Section VIII, Division 1 and 2
1683	03-03-75 03-01-76	Bolt Holes for Section III, Division 1, Class 1, 2, 3 and MC Component Supports
1689	06-30-75 09-10-76	Alternate PWHT Time and Temperature for SA-182 Grade F22 Section III, Class 1, 2, 3 and CS

Code Case 1689 was acceptable subject to the following condition in addition to that specified in the Code Case: The alternate postweld heat treatment should be prequalified along with the applicable welding procedure in accordance with ASME Section IX.

1695	04-28-75 11-03-75	Brazing, Section III, Class 3
1701	06-30-75 03-20-78	Determination of Capacities of Vacuum Relief Valves Section III, Class MC
1701-1 (N-95-1)	03-20-78 03-19-79 07-09-79	Determination of Capacities of Vacuum Relief Valves, Section III, Division 1 and 2, Class MC
1702	06-30-75 07-11-77	Flanged Valves Larger than 24 inches for Section III, Class 1, 2 and 3 Construction
1720	08-11-75 03-01-76	Weld End Preparation for Section III, Division 1 Construction

Code Case 1720 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Weld end preparations other than those shown in Figures 1, 2, and 3 of the Code Case are not acceptable on a generic basis. Such alternative end preparations should be treated on a case-by-case basis.

1720-1	03-01-76 11-20-78	Weld End Preparation for Section III, Division 1 Construction

Code Case 1720-1 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The acceptance of weld end preparations other than those shown in Figures 1, 2, and 3 of the Code Case should be evaluated on a case-by-case basis.

1739-2 (N-119-2)	08-28-78 08-25-80	Pump Internal Items, Section III, Division 1, Class 1, 2, and 3
1739-3 (N-119-3)	08-25-80 11-17-80	Pump Internal Items, Section III, Division 1, Class 1, 2, and 3
1739-4 (N-119-4)	02-20-84[16] 07-18-85	Pump Internal Items, Section III, Division 1, Class 1, 2, and 3
N-119-5	07-18-85 09-05-85	Pump Internal Items, Section III, Division 1, Class 1, 2, and 3
1761	04-26-76 01-14-77	Use of SB-148 Alloy CA954 for Section III, Division 1, Class 2 or 3 Flanged End Valves
1761-1 (N-133)	01-14-77 01-07-80 04-02-82	Use of SB-148 Alloy CA954, Section III, Division 1, Class 3
N-133-1	04-02-82 05-19-85	Use of SB-148 Alloys 952 and 954, Section III, Division 1, Class 3
N-133-2	05-19-85 07-18-85	Use of SB-148 Alloys 952 and 954 Section III, Division 1, Class 3
1769	08-13-76 02-16-77	Qualification of NDE Level III Personnel, Section III, Division 1
1774	08-13-76 07-11-77	Minimum Wall Thickness for Class 2 and 3 Valves, Section III, Division 1
1780	09-10-76 03-10-78	Hydrostatic Testing and Stamping of Pumps for Class 1 Construction, Section III, Division 1

Code Case 1780 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: Each licensing application in which the Code Case is to be used should present information that satisfactorily demonstrates that the subassembly tests adequately simulate the pressure loadings. Also, the closure fixture for the test subassembly should adequately simulate the rigidity of adjacent subassemblies and also simulate the interface loadings from adjacent subassemblies that would result from a hydrostatic pressure test of a complete pump assembly. As a minimum, the closure fixture should impose loads that result in stresses equal to or greater than those induced during the hydrostatic test of a complete pump assembly. It is not intended that piping reaction loadings be simulated in the hydrostatic testing.

1783	09-10-76 01-14-77	Qualification of Nondestructive Personnel, Section III, Division 1

Code Case 1783 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The first sentence of paragraph (1) should be replaced with the following: "The certification of the Level III nondestructive examination personnel for the purposes of this Section of the Code shall be the responsibility of the employer of the

[16]The Code Case was annulled on December 1, 1983 (ASME mandatory annulment date). It was reinstated on February 20, 1984. Because of the circumstances and because there were no changes in the Code Case, the NRC considers that this Case was in effect during the period of 12-1-83 through 2-20-84.

Level III individual. If the employer is not a Certificate Holder, then the verification of such certificate is the responsibility of the Certificate Holder."

1791 (N-154)	03-17-80[17] 09-09-82 09-05-85 12-05-85	Projection Resistance Welding of Valve Seats, Section III, Division 1, Class 1, 2 and 3 Valves
1797 (N-160)	03-23-77 03-17-80 09-07-82 07-18-85	Finned Tubing for Construction, Section III, Division 1
N-192	01-09-78 08-30-79	Use of Flexible Hose for Section III, Division 1, Class 1, 2, and 3 Construction

Code Case N-192 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. The applicant should indicate system application, design and operating pressure, and pressure-temperature rating of the flexible hose. Data to demonstrate compliance of the flexible hose with NC/ND-3649, particularly NC/ND-3649.4(e), are required to be furnished with the application.

N-192-1	08-30-79 09-16-81	Use of Flexible Hose for Section III, Division 1, Class 1, 2, and 3 Construction

Code Case N-192-1 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: The applicant should indicate system application, design and operating pressure, and pressure-temperature rating of the flexible hose. Data to demonstrate compliance of the flexible hose with NC/ND-3649, particularly NC/ND-3649.4(e), are required to be furnished with the application.

N-196	01-09-78 01-08-79	Exemption from the Shakedown Requirements When Plastic Analysis is Performed for Section III, Division 1, Class 1 Construction
N-214	05-15-78 07-13-81 09-07-82	Use of SA-351, Grade CN7M, for Valves for Section III, Division 1, Construction
N-214-1	09-07-82 05-25-83	Use of SA-351 Grade CN7M, for Valves, Section III, Division 1
N-237	07-09-79 01-21-82 09-07-82	Hydrostatic Testing of Internal Piping, Section III, Division 1
N-237-1	09-07-82 05-25-83	Hydrostatic Testing of Internal Piping, Section III, Division 1, Classes 2 and 3
N-260	01-07-80 05-25-83 07-18-85	Weld Repair of SA-182 Type 316 Forgings, Section III, Division 1, Classes 1, 2, 3, and MC
N-260-1	07-18-85 12-05-85	Weld Repair of SA-182 Type 316 Classes 1, 2, 3, and MC

Code Case N-260-1 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Type 308 L welding materials should not be used to repair grade F 316 N forgings because of the difference in strength levels.

N-304	06-11-81 04-05-84 07-12-84	Use of 20Cr-25Ni-6Mo (Alloy UNS NO8366) Welded Tubes for Section III, Division 1, Classes 2 and 3 Construction
N-304-1	07-12-84 05-19-85	Use of 20Cr-25Ni-6Mo (Alloy UNS NO8366) Welded Tubes for Section III, Division 1, Classes 2 and 3 Construction
N-304-2	05-19-85 12-05-85	Use of SB-676 20Cr-25Ni-6Mo (Alloy UNS N08366) Welded Tubes, Section III, Division 1, Classes 2 and 3
N-304-3	12-05-85 02-23-87	Use of SB-676 20Cr-25Ni-6Mo (Alloy UNS N08366) Plate, Sheet, Strip and Welded Pipes, Section III, Division 1, Classes 2 and 3
N-309	09-17-84[18] 12-05-85	Identification of Materials for Component Supports, Section III, Division 1
N-318	07-13-81 02-20-84	Procedure for Evaluation of the Design of Rectangular Cross Section Attachments on Class 2 or 3 Piping, Section III, Division 1

Code Case N-318 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Applicants should identify in their Safety Analysis Report: (1) the method of lug attachment, (2) the piping system involved, and (3) the location in the system where the Case is to be applied.

N-318-1[19]	02-20-84 07-12-84	Procedure for Evaluation of the Design of Rectangular Cross Section Attachments on Class 2 or 3 Piping, Section III, Division 1

Code Case N-318-1 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Applicants should identify in their Safety Analysis Report: (1) the method of lug attachment, (2) the piping system involved, and (3) the location in the system where the Case is to be applied.

[17]The Code Case was annulled on January 14, 1980 (ASME mandatory annulment date). It was reinstated on March 17, 1980. Because of the circumstances and because there were no changes in the Code Case, the NRC considers that this Case was in effect during the period of 1-14-80 through 3-17-80.

[18]The Code Case was annulled on May 11, 1984 (ASME mandatory annulment date). It was reinstated on September 17, 1984. Because of the circumstances and because there were no changes in the Code Case, the NRC considers that this Case was in effect during the period of 5-11-84 through 9-17-84.

[19]The conditional acceptance was inadvertently omitted in Revision 23 of this guide.

N-318-2	07-12-84 09-05-85	Procedure for Evaluation of the Design of Rectangular Cross Section Attachments on Class 2 or 3 Piping, Section III, Division 1

Code Case N-318-2 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case. Applicants should identify in their Safety Analysis Report: (1) the method of lug attachment, (2) the piping system involved, and (3) the location in the system where the Case is to be applied.

N-345	06-17-82 12-13-82	Attachment of AMS 5382 Alloy 31 Seat Rings by Friction Welding, Section III, Division 1, Classes 1, 2, and 3
N-362	02-14-83 05-25-83	Alternate Rules for Pressure Testing of Containment Items, Section III, Division 1
N-362-1	05-25-83 07-12-84	Pressure Testing of Containment Items, Section III, Division 1, Classes 1, 2, and MC
N-383	10-05-83 07-18-85	Weld Repair of SA-182 Austenitic Forgings, Section III, Division 1, Classes 1, 2, and 3

Code Case N-383 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants who apply the provisions of this Case to permit material manufacturers to weld repair austenitic forgings without re-solution heat treatment should provide justification to the NRC staff (via the Safety Analysis Report) why this is acceptable for their applications, including their evaluation of the susceptibility for stress corrosion cracking.

N-411	09-17-84 02-20-86	Alternative Damping Values for Seismic Analysis of Classes 1, 2, and 3 Piping Sections, Section III, Division 1

Code Case N-411 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: (1) The damping values specified may be used in analyzing piping response for seismic and other dynamic loads being filtered through building structures provided response mode frequencies are limited to 33 Hz and below. Within this range, the Code Case damping should be used completely and consistently, if used at all. (For equipment other than piping, the damping values specified in Regulatory Guide 1.61, "Damping Values for Seismic Design of Nuclear Power Plants," should be used.) (2) The damping values specified may be used only in those analyses in which current seismic spectra and procedures have been employed. Such use should be limited only to response spectral analyses (similar to that used in the study supporting its acceptance - Reference NUREG/CR-3526). The acceptance of the use with other types of dynamic analyses (e.g., time-history analysis) is pending further justification. (3) When used for reconciliation work or for support optimization of existing designs, the effects of increased motion on existing clearances and on line mounted equipment should be checked. (4) This Code Case is not appropriate for analyzing the dynamic response of piping systems using supports designed to dissipate energy by yielding (i.e., the design of which is covered by Code Case N-420). (5) This Code Case is not applicable to piping in which stress corrosion cracking has occurred unless a case-specific evaluation is made and is reviewed by the NRC staff.

4. Code Cases for Class 1 components that are not on the approved list of this guide (paragraph C.1) or other regulatory guides, or for which authorization by the Commission has not been granted, are not acceptable for Class 1 components.

5. Code Cases for other classes of components that are not on the approved list of this guide (paragraph C.1) or other regulatory guides should be considered not acceptable on a generic basis.

D. IMPLEMENTATION

The purpose of this section is to provide information to applicants regarding the use of this regulatory guide.

1. Except for those Code Cases that have been annulled by action of the ASME, the NRC staff has found the Code Cases listed in this regulatory guide under regulatory position C.1 acceptable for appropriate use. Other Code Cases may be considered for use in accordance with footnote 6 of the Codes and Standards rule, § 50.55a of 10 CFR Part 50.

2. Components ordered to a specific version of a Code Case need not be changed because a subsequent revision to the Code Case is listed as the approved version in this guide.

3. Components ordered to a Code Case that was previously approved for use need not be changed because the Code Case has been subsequently annulled.

4. Code Cases on the approved list may be applied to components that were in process of construction prior to the effective date of the Code Case within the limits specified in the Code Case and applicable regulations or recommended in other regulatory guides.

APPENDIX

NUMERICAL LISTING OF CODE CASES*

N-31-1	N-247	N-368
N-62-4	N-260-2	N-369
1720-2 (N-106-2)	N-262	N-391
N-119-6	N-282	N-392
1745 (N-122)	N-284	N-393
N-133-3	N-292	N-394
N-154-1	N-304-4	N-410
1792-2 (N-155-2)	N-309-1	N-411-1
N-160-1	N-313	N-412
N-192-2	N-315	N-414
N-196-1	N-316	N-420
N-215	N-318-3	N-430
N-233	N-319	N-433
N-237-2	N-341	N-442
N-240	N-345-1	N-453
N-241	N-357	N-454
N-243	N-362-2	N-455

*Code Case 1625 was inadvertently listed in the appendix of Regulatory Guide 1.84, Revision 1. This Code Case is covered in Regulatory Guide 1.85, Revision 1.

Code Case 1575 is a Section VIII Case and therefore has been eliminated from this regulatory guide, which covers Section III Cases.

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