U.S. NUCLEAR REGULATORY COMMISSION

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# REGULATORY GUIDE

OFFICE OF STANDARDS DEVELOPMENT

Revised 11/78

## 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.

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.

### 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 Council. 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.

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

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Regulatory Guides are issued to describe and make available to the public methods acceptable to the NRC staff of implementing specific parts of the Commission's regulations, to delineate techniques used by the staff in evaluating specific problems or postulated accidents, or to provide guidance to applicants. Regulatory Guides are not substitutes for regulations, and compliance with them is not required. Methods and solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance or continuance of a permit or license by the Commission.

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. This guide was revised as a result of substantive comments received from the public and additional staff review.

Comments should be sent to the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Docketing and Service Branch.

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ENCLOSURE 1

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 January 10, 1978, 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 "Council 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 Council approval, and title) are acceptable to the NRC staff for application in the construction of components 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 given with the individual Code Case in the list. 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 Council approval, and title):

(1) Code Cases applicable to piping design:

| | | |
|---|---|---|
| 1614 | 11-5-73 | Hydrostatic Testing of Piping Prior To or Following the Installation of Spray Nozzles for Section III, Classes 1, 2, and 3 Piping Systems |
| 1623 | 3-2-74 | Design by Analysis for Section III, Class 1 Sleeve-Coupled and Other Patented Piping Joints |
| 1677 | 12-16-74 | Clarification of Flange Design Loads, Section III, Class 1, 2 and 3 |
| 1744 | 3-1-76 | Carbon Steel Pipe Flanges Larger than 24 in. Section III, Division 1, Class 2 and 3 Construction |
| 1745 | 3-1-76 | Stress Indices for Structural Attachments, Class 1, Section III, Division 1 |
| 1797 | 3-23-77 | Finned Tubing for Construction, Section III, Division 1 |
| 1812 | 3-23-77 | Size of Fillet Welds for Socket Welding of Piping, Section III, Division 1 |

(2) Code Cases applicable to valve design:

| | | |
|---|---|---|
| 1539-1 (N-30-1) | 11-21-77 | Metal Bellows and Metal Diaphragm Stem Sealed Valves, Section III, Division 1, Classes 1, 2, and 3 |
| 1552-1 (N-35-1) | 8-29-77 | Design by Analysis of Section III, Class 1 Valves |
| 1581 | 6-25-73 | Power-Operated Pressure Relief Valves, Section III |
| 1665 | 11-4-74 | Pressure-Temperature Ratings for Class 1 Valves Made from 5 Cr-1/2 Mo, Section III |
| 1678 | 12-16-74 | Butterfly Valves of Circular Cross Section Larger than 24 in. NPS for Section III, Class 2 and 3 Construction |
| 1700 | 11-3-75 | Determination of Capacities of Liquid Relief Valves, Section III, Division 1, Class 1, 2, and 3 |
| 1701 | 6-30-75 | Determination of Capacities of Vacuum Relief Valves Section III, Class MC |

* Lines indicate substantive changes from previous issues.

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

| | | |
|---|---|---|
| 1702-1 (N-96-1) | 7-11-77 | Flanged Valves Larger than 24 inches for Section III, Division 1, Class 1, 2 and 3 Construction |
| 1732 | 11-3-75 | Hardsurfaced Valves with Inlet Connections less than 2-in. Nominal Pipe Size for Section III, Division 1, Class 1 and 2 Construction |
| 1761-1 | 1-14-77 | Use of SB-148 Alloy CA954 Section III, Division 1, Class 3 |
| 1774-1 (N-142-1) | 7-11-77 | Minimum Wall Thickness for Class 2 and 3 Valves, Section III, Division 1 |
| 1796 | 1-14-77 | Body Neck Thickness Determination for Valves with Inlet Connections 4-inch Nominal Pipe Size and Smaller, Section III, Division 1, Class 1, 2, and 3 |
| N-179 | 7-11-77 | Openings in Valves for Section III, Division 1, Class 1, 2 and 3 Construction |
| N-193 | 11-21-77 | Use of SB-61 and SB-62 Bronze for Section III, Division 1, Class 3 Flange and Socket Weld End Valves |

(3) Other Code Cases related to design:

| | | |
|---|---|---|
| 1620 | 3-2-74 | Stress Category for Partial Penetration Welded Penetrations, Section III, Class 1 Construction |
| 1630 | 11-4-74 | 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 |
| 1660 | 11-4-74 | Overpressure Protection Under Emergency Operating Conditions for Section III, Class 1 |
| 1692 | 4-28-75 | Rules for Design of Welded Class 1 Pumps |
| 1729 | 11-3-75 | Minimum Edge Distance-Bolting for Section III, Division 1, Class 1, 2 and 3 and MC Construction of Component Supports |
| 1733 | 11-3-75 | Evaluation of Safe Shut Down Earthquake Loadings for Section III, Division 1, Class MC Containment Vessels |
| 1775 | 8-13-76 | Data Report Forms for Core Support Structures, Class CS, Section III, Division 1 |
| N-189 | 8-29-77 | Primary Membrane Plus Primary Bending Stress Intensity Limits for Other Than Solid Rectangular Sections for Section III, Division 1, Class MC Construction |
| N-196 | 1-9-78 | Exemption from the Shakedown Requirements When Plastic Analysis is Performed for Section III, Division 1, Class 1 Construction |

b. Fabrication-oriented Code Cases (Code Case number, date of Council approval, and title):

(1) Code Cases related to welding and brazing:

| | | |
|---|---|---|
| 1516-2 | 8-11-75 | Welding of Seats or Minor Internal Permanent Attachments in Valves for Section III Applications |
| 1609-1 | 3-1-76 | Inertia and Continuous Drive Friction Welding, Section I, III, IV, VIII, Division 1 and 2, and IX |
| 1726 | 11-3-75 | Refinement of Low Alloy Steel Heat Affected Zone Under Overlay Cladding Section III, Division 1, Class 1 Components |
| 1791 | 1-14-77 | Projection Resistance Welding of Valve Seats, Section III, Division 1, Class 1, 2, and 3 Valves |
| N-182 | 7-11-77 | Alternate Rules for Procedure Qualification Base Material Orientation, Section III, Division 1, Class 2 and 3 Construction |

(2) Other Code Cases related to fabrication:

| | | |
|---|---|---|
| 1541-2 | 9-30-76 | Hydrostatic Testing of Embedded Class 2 and Class 3 Piping for Section III, Division 1 Construction |
| 1588 | 8-13-73 | Electro-Etching of Section III Code Symbols |
| 1651 | 8-12-74 | Interim Requirements for Certification of Component Supports, Section III, Subsection NF |
| 1681-1[3] | 3-3-75 | Organizations Accepting Overall Responsibility for Section III Construction |
| 1712 | 8-11-75 | Nameplates and Stamping for Section III, Division 1, Class |

[3] Code Case 1681 was approved by Council 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.

1, 2, 3 and MC Construction as Referenced in NA-8300

N-184 7-11-77 Roll Threading of SA-453 Bolting for Section III, Division 1, Class 1, 2, 3 or CS Construction

c. Code Cases with contingent approval:

1361-2 3-9-72 Socket Welds, Section III

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

1540-2 1-14-77 Elastomer Diaphragm Valves, Section III, Class 2 and 3

Code Case 1540-2 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 ⅓ 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.

1569 3-3-72 Design of Piping for Pressure Relief Valve Station, Section III

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

1621-2 (N-62-2) 5-25-77 Internal and External Valve Items, Section III, Division 1, Class 1, 2 and 3 Line Valves

Code Case 1621-2 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.

1711 11-3-75 Pressure Relief Valve Design Rules, Section III, Division 1, Class 1, 2 and 3

Code Case 1711 is 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 assured. 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.

1720-1 3-1-76 Weld End Preparation for Section III, Division 1 Construction

Code Case 1720-1 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.

1727 12-22-75 Alternate Test Fluids, Section III, Division 1

Code Case 1727 is 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.

1734 11-3-75 Weld Design for Use for Section III, Division 1, Class 1, 2, 3 and MC Construction of Component Supports

Code Case 1734 is 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.

1780 9-10-76 Hydrostatic Testing and Stamping of Pumps for Class 1

Construction, Section III, Division 1

Code Case 1780 is 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.

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

Code Case 1783-1 is 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."

1818 3-23-77 Welded Joints in Component Standard Supports, Section III, Division 1

Code Case 1818 is 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-192 1-9-78 Use of Flexible Hose for Section III, Division 1, Class 1, 2, and 3 Construction

Code Case N-192 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.

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 Council should be considered as deleted from the list of acceptable Code Cases as of the date of the ASME Council 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]

| | | |
|---|---|---|
| 1461-1[6] | 3-9-72<br>2-16-77 | Electron Beam Welding, Section I, III, and VIII, Division 1 and 2 |
| 1470-2[7] | 12-18-72<br>11-4-74 | External Pressure Charts for High-Strength Carbon Steels and for Low-Alloy Steels, Section VIII, Division 1 and 2, and Section III |
| 1471-1 | 3-9-72<br>1-1-78 | Vacuum Electron Beam Welding of Tube Sheet Joints, Section III |
| 1477-1 | 3-9-72<br>1-1-78 | Use of 1970 Addenda of ANSI B31.7, Section III |
| 1494-1 | 3-3-73<br>1-1-78 | Weld Procedure Qualification Test, Section III |
| 1506 | 12-13-71<br>1-1-78 | Stress Intensification Factors, Section III, Class 2 and 3 Piping |
| 1533[8] | 6-14-72<br>7-1-75 | Pressure Temperature Ratings of SA-351 Grades CF8A, CF3, and CF3M, Section III |
| 1535-2 | 4-30-73<br>3-21-77 | Hydrostatic Testing of Section III, Class 1 Valves |
| 1536 | 8-14-72<br>7-1-77 | Closing Seam for Electrical Penetrations for Section III, Class 2, 3, and MC |
| 1553-1[8] | 3-3-75<br>1-1-76 | Upset Heading and Roll Threading of SA-453 for Bolting in Section III |
| 1555-1 | 1-14-77<br>1-1-78 | Certification of Safety Relief Valves, Section III, Division 1 |
| 1573 | 4-30-73<br>1-1-78 | Vacuum Relief Valves, Section III |
| 1574 | 4-30-73<br>12-31-74 | Hydrostatic Test Pressure for Safety Relief Valves, Section III |
| 1580-1 | 11-5-73<br>1-1-78 | Buttwelded Alignment Tolerance and Acceptable Slopes for Concentric Centerlines for |

[4] Earlier date—date Code Case approved by ASME Council; later date—date Code Case annulled.

[5] Code Cases 1355-3, 1534, and 1554, which were listed in the original issue of this guide, were annulled by Council 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 Council approval of Code Case 1630. However, due to an oversight, the annulment was not noted until publication of Supplement No. 13 to the 1974 Code Cases.

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

| | | |
|---|---|---|
| | | Section III, Class 1, 2, and 3 Construction |
| 1601 | 11-5-73<br>7-1-74 | Limits of Reinforcement for Two-Thirds Area, Section III, Class 1 |
| 1606-1 | 12-16-74<br>7-1-77 | 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 | 11-4-74<br>7-1-77 | Stress Criteria for Section III, Classes 2 and 3 Vessels Designed to NC/ND-3300 Excluding the 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.

| | | |
|---|---|---|
| 1633 | 4-29-74<br>1-1-78 | Brazing of Seats to Class 1, 2, and 3 Valve Body or Bonnets, Section III |
| 1635-1[9] | 8-12-74<br>7-1-77 | 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[9] | 8-12-74<br>7-1-77 | 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.

| | | |
|---|---|---|
| 1657 | 11-4-74<br>7-1-77 | Stress Criteria for Class 2 and 3 Atmospheric and Low Pressure (0-15 psig) Steel Storage Tanks |
| 1659 | 11-4-74<br>7-1-77 | Interconnection of Two Piping Systems for Section III, Class 1, 2, and 3 Construction |
| 1661 | 11-4-74<br>1-1-78 | Postweld Heat Treatment P-No. 1 Materials for Section III, Class 1 Vessels |
| 1662 | 11-4-74<br>1-1-78 | Shop Assembly of Components, Appurtenances and Piping Subassemblies for Section III, Class 1, 2, 3 and MC Construction |
| 1672 | 11-4-74<br>3-21-77 | Nuclear Valves for Section III, Division I, Class 1, 2 and 3 Construction |
| 1675 | 12-16-74<br>7-1-76 | Tubesheet to Shell or Formed Head Weld Joints, Section III, Class 1 Vessels |
| 1676[8] | 12-16-74<br>7-1-76 | Clarification of Stress Intensities in Curved Pipe or Welded Elbows, Section III |
| 1683-1 | 3-1-76<br>7-1-76 | Bolt Holes for Section III, Class 1, 2, 3 and MC Component Supports |
| 1685 | 4-28-75<br>1-1-78 | Furnace Brazing Section III, Class 1, 2, 3 and MC Construction |
| 1686 | 3-3-75<br>1-1-78 | Furnace Brazing, Section III, Subsection NF, Component Supports |
| 1689-1 | 9-10-76<br>1-1-78 | Alternate PWHT Time and Temperature for SA-182 Grade F22, 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.

| | | |
|---|---|---|
| 1695-1 | 11-3-75<br>1-1-78 | Brazing, Section III, Division 1, Class 3 |
| 1703 | 6-30-75<br>1-1-78 | Brazing of Copper Alloys Section III, Class 2 |

[9] Code Cases 1635 and 1636 were approved by Council 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.

| | | |
|---|---|---|
| 1706 | 6-30-75<br>12-31-75 | Data Report Forms for Component Supports, Section III, Class 1, 2 and 3 |
| 1718[8] | 8-11-75<br>7-1-76 | Design of Structural Connections for Linear Type Component Supports, Section III, Division 1, 2 and 3 and MC |
| 1719[8] | 8-11-75<br>7-1-76 | Single-Welded, Full-Penetration Sidewall Butt Joints in Atmospheric Storage Tanks, Section III, Division 1, Class 2 |
| 1765 | 4-26-76<br>7-1-77 | Machining After Hydrostatic Testing Class 2 and 3 Construction, Section III, Division 1 |
| 1768 | 6-29-76<br>1-1-78 | Permanent Attachments to Containment Vessels—Class MC, Section III, Division 1 |
| 1769-1 | 2-16-77<br>10-1-77 | Qualification of NDE Level III Personnel, Section III, Division 1 |
| 1808 | 2-16-77<br>1-1-78 | F-Number Classification of Low Alloy and Carbon Steel Bare Rod Electrodes Sections I, II, III, IV, V, VIII, and IX |

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 Council 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,[10] and title.

| | | |
|---|---|---|
| 1508[11] | 12-13-71<br>6-30-75 | Allowable Stresses, Design Intensity and/or Yield Strength Values, Section I, III, and VIII, Divisions 1 and 2 |
| 1516-1 | 6-25-73<br>8-11-75 | Welding of Seats in Valves for Section III Applications |
| 1539<br>(N-30-1) | 11-6-72<br>11-21-77 | Metal Bellows and Metal Diaphragm Stem Sealed Valves, Section III, Classes 1, 2, and 3 |
| 1540-1 | 3-3-73<br>1-14-77 | Elastomer Diaphragm Valves, Section III, Classes 2 and 3 |
| 1541-1 | 8-13-73<br>9-30-76 | Hydrostatic Testing of Embedded Class 2 and Class 3 Piping for Section III Construction |
| 1552 | 12-18-72<br>8-29-77 | Design by Analysis of Section III, Class 1 Valves |
| 1553 | 12-18-72<br>3-3-75 | Upset Heading and Roll Threading of SA-453 for Bolting, Section III |
| 1555 | 12-18-72<br>1-14-77 | Certification of Safety Relief Valves on Liquids |
| 1606 | 11-5-73<br>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 | 11-5-73<br>11-4-74 | 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.

| | | |
|---|---|---|
| 1683 | 3-3-75<br>3-1-76 | Bolt Holes for Section III, Division 1, Class 1, 2, 3 and MC Component Supports |
| 1689 | 6-30-75<br>9-10-76 | 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 | 4-28-75<br>11-3-75 | Brazing, Section III, Class 3 |
| 1702 | 6-30-75<br>7-11-77 | Flanged Valves Larger than 24 inches for Section III, Class 1, 2 and 3 Construction |
| 1720 | 8-11-75<br>3-1-76 | 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 alternate end preparations should be treated on a case-by-case basis.

| | | |
|---|---|---|
| 1761 | 4-26-76<br>1-14-77 | Use of SB-148 Alloy CA954 for Section III, Division 1, |

[10] Earlier date—date Code Case approved by ASME Council; later date—date revision of Code Case approved by ASME Council.

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

| | | |
|---|---|---|
| | | Class 2 or 3 Flanged End Valves |
| 1769 | 8-13-76<br>2-16-77 | Qualification of NDE Level III Personnel, Section III, Division 1 |
| 1774 | 8-13-76<br>7-11-77 | Minimum Wall Thickness for Class 2 and 3 Valves, Section III, Division 1 |
| 1783 | 9-10-76<br>1-14-77 | 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 Level III individual. If the employer is not a Certificate Holder, then the verification of such certificate is the responsibility of the Certificate Holder."

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 Council, the NRC staff will authorize appropriate use of the Code Cases listed in this guide under regulatory position C.1 upon specific request by the applicant in accordance with footnote 6 to §50.55a of the Codes and Standards rule.

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*

1361-2
1516-2
1539-1 (N-30-1)
1540-2
1541-2
1552-1(N-35-1)
1569
1581
1588
1609-1
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1621-2(N-62-2)
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1660
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1677
1678
1681-1
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1701
1702-1(N-96-1)
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1712
1720-1
1726
1727
1729
1732
1733
1734
1744
1745
1761-1
1774-1(N-142-1)
1775
1780
1783-1
1791
1796
1797
1812
1818
N-179
N-182
N-184
N-189
N-192
N-193
N-196

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*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.