U.S. NUCLEAR REGULATORY COMMISSION

REGULATORY GUIDE

OFFICE OF NUCLEAR REGULATORY RESEARCH

REGULATORY GUIDE 1.85

MATERIALS 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 boundar, be designed, fabricated, erected, and tested in accordance with the requirements for Class 1 components of Section III, "Nuclear Power Plant Components," 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 I 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

¹Copies may be obtained from the American Society of Mechanical Engineers, United Engineering Center, 348 East 47th Street, New York, New York 10017.

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 materials and testing that are generally acceptable to the NRC staff for implementation in the licensing of light-water-cooled nuclear power plants.

Any guidance in this document related to information collection activities has been cleared under OMB Clearance No. 3150-0011,

B. DISCUSSION

The Boiler and Pressure Vessel Committee of the ASME publishes a document entitled "Code Cases." 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,

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

All published Code Cases in the area of materials and testing that are applicable to Section III of the Code and were

USNRC REGULATORY GUIDES

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.

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.

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

The guides are issued in the following ten broad divisions:

- Power Reactors
 Research and Test Reactors
 Fuels and Materials Facilities
 Environmental and Siting
 Materials and Plant Protection
 Materials and Plant Protection

 6. Products
 7. Transportation
 8. Occupational Health
 9. Antitrust and Financial Review
 10. General

Copies of issued guides may be purchased at the current Government Printing Office price. A subscription service for future guides in specific divisions is available through the Government Printing Office. Information on the subscription service and current GPO prices may be obtained by writing the U.S. Nuclear Regulatory Commission, Washington, D.C. 2055S, Attention: Publications Sales Manager.

* Jin effect on September 1, 1983, 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.a 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 Cases² listed below (by number, date of Council 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 Cases 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. Materials-oriented Code Cases (Code Case number, date of Council approval, 3 and title):
 - (1) Code Cases involving plate:
- N-7-1 12-13-82 High Yield Strength Steel, Section III, Division 1, Class 1 Vessels

Code Case N-7-1 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The information required to be developed by Note 1 in the Code Case should be provided in each referencing Safety Analysis Report.

| 1571 | 03-03-73 | Additional | Material | for | SA-234 |
|--------|----------|--------------|-----------|-------|--------|
| (N-41) | 01-08-79 | Carbon Steel | Fittings, | Secti | on III |
| | 01-21-82 | | | | |

(2) Code Cases involving pipe and tubes:

| 1474-1 (N-17) | 10-29-71 01-08-79 | Integrally Finned Tubes for Section III |
|------------------|-----------------------|---|
| | 01-21-82 | |
| 1484-3 | 08-13-76 | SB-163 Nickel-Chromium-Iron Tub- |
| (N-20) | 08-30-79 | ing (Alloy 600 and 690) and Nickel- |
| | 07-16-82 | Iron-Chromium Alloy 800 at a |
| | | Specified Minimum Yield Strength |
| | | of 40.0 Ksi Section III, Division 1, |
| | | Class I |
| | | |
| 1527 | 06-26-72 ⁴ | Integrally Finned Tubes, Section |
| (N-26) | 01-08-79 | III |
| | 01-21-82 | |
| N-188-1 | 05-15-78 | Use of Welded Ni-Fe-Cr-Mo-Cu |
| | 07-13-81 | (Alloy 825) and Ni-Cr-Mo-Cb (Alloy |
| | | 625) Tubing, Section III, Division |
| | | 1, Class 2 and 3 |
| N-224-1 | 05-11-81 | Use of ASTM A500 Grade B and |
| | | ASTM A501 Structural Tubing for |
| | | Welded Attachments for Section |
| | | III, Class 2, 3, and MC |
| N-294 | 08-25-80 | SB-148 Alloy 952 and 954, and |
| | 05-25-83 | SB-62 Alloy 836 Fittings, Sec- |
| | | tion III, Division 1, Class 2 |
| N-321 | 07-13-81 | Use of Modified SA-249, Type 304 |
| | | for Section III, Division 1, Class 1 |
| | | Construction |
| N-342 | 04-02-82 | Use of SA-249 and SA-312 Type 317 |
| | | Stainless Steel, Section III, Divi- |
| | | sion 1, Class 1, 2, and 3 |
| N-372 | 02-14-83 | SB-163 Ni-Fe-Cr-Mo-Cu Alloy 825 |
| | | (UNS N08825) Tubing, Section III, |
| | | Division 1 |
| N-379 | 04-04-83 | Bimetallic Tubing Section III, Divi- |
| | | sion 1, Class 1 |
| | | |

(3) Code Cases involving bars and forgings:

| 1335-10 | 08-28-78 | Requirements for Bolting Materials, |
|----------|----------|-------------------------------------|
| (N-3-10) | 08-28-81 | Section III |
| 1337-11 | 05-15-78 | Special Type 403 Modified Forgings |
| (N-4-11) | 07-13-81 | or Bars, Section III, Division 1, |
| | | Class I and CS |
| 1542-1 | 04-29-74 | Type 403 Forgings or Bars for |
| (N-33) | 01-08-79 | Bolting Material, Section III |
| | 01-21-82 | |
| 1626-1 | 01-08-79 | Normalized and Tempered 1-1/4 Cr |

⁴Corrected date.

^{*}Lines indicate substantive changes from Revision 21.

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

³When more than one date is given, the earlier date is that on which the Code Case was approved by the ASME Council and the later date(s) is that on which the Code Case was reaffirmed by the ASME Council.

| (N-65-1) | 01-21-82 | Low Alloy Steel Forgings, Section I and Section III |
|----------|----------|---|
| 1747 | 03-01-76 | Requirements for Martensitic Stain- |
| (N-124) | 01-08-79 | less Steel Forgings with 13% Chro- |
| (, | 07-13-81 | mium and 4% Nickel, Section III, |
| | 07-15-01 | Division 1 |
| 1772 | 08-13-76 | Use of SA-453 Bolts in Service |
| (N-140) | 08-30-79 | Below 800°F Without Stress Rup- |
| , | 07-16-82 | ture Tests, Section III, Division 1 |
| 1793 | 01-14-77 | Structural Steel Rolled Shapes, Sec- |
| (N-156) | 01-07-80 | tion III, Division 1, Class 2, 3, and MC |
| 1 | 02-14-83 | tion m, birmion i, chas b, s, and no |
| N-299 | 11-17-80 | Use of Nickel-Chromium-Molybde- |
| 14-233 | 11-17-00 | - |
| | | num-Columbium Alloy 625 Forgings, |
| | | Section III, Division 1, Class 2 and |
| | | Class 3 Components |
| N-352 | 07-16-82 | Use of SA-638 Grade 660 Forgings |
| | | and Bars Below 700°F Without |
| | | Stress Rupture Tests, Section III, |
| | | Division 1 |
| N-353 | 07-16-82 | Marking of SA-354 Grade BD Bolt- |
| | | ing Section III, Division 1 |
| N-367 | 02-14-83 | SA-372 Type V, Grade 1, Class B, |
| ĺ | | Section III, Division 1 |
| N-370 | 02-14-83 | Modified SA-705 Grade XM-13 Forg- |
| 1 | | ings, Section III, Division 1 |
| N-388 | 07-25-83 | Component Support Bolting, Sec- |
| 1 | | tion III, Division 1, Classes 2, 3, and |
| | | MC |
| • | | ••• |

(4) Code Cases involving general usage:

| N-5-1 | 12-13-82 | Nickel Chromium Age Hardenable Alloys (Alloy X750), Section III, Division 1, Classes 1, 2, 3, MC, and |
|--------|----------|---|
| N-60-1 | 05-25-83 | CS Material for Core Support Struc- tures, Section III, Division 1 |

Code Case N-60-1 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Welding of age-hardenable alloy SA-453 Grade 660 and SA-637 Grade 688 should be performed when the material is in the solution-treated condition.

N-71-12 02-14-83 Additional Materials for Component Supports Fabricated by Welding, Section III, Division 1, Class 1, 2, 3, and MC

Code Case N-71-12 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the mate-

rial meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service. In the last sentence of paragraph 5.3, reference should be made to paragraph 4.5.2.2, "Alternate Atmosphere Exposure Time Periods Established by Test," of the AWS D.1.1 Code for the evidence presented to and accepted by the Authorized Inspector concerning exposure of electrodes for longer periods of time. The provisions of paragraph 4.3 are not acceptable on a generic basis. Paragraph 16.2.2 is not acceptable as written and should be replaced with the following: When not exempted by 16.2.1, above, the postweld head treatment shall be performed in accordance with NF-4622 except that for ASTM A-710 Grade A material, it shall be at least 1000°F (540°C) and shall not exceed 1150°F (620°C) for Class 1 and Class 2 material and 1175°F (640°C) for Class 3 material. The new holding time at temperature for weld thickness (nominal) shall be 30 minutes for 1/2 inch or less, 1 hour per inch for thickness over 1/2 inch to 5 inches, and 5 hours plus 15 minutes for each additional inch over 5 inches.

| 1714-2 | 08-28-78 | Postweld Heat Treatment of P-1 |
|-----------|----------|--|
| (N-102-2) | 07-13-81 | Material, Section III, Class MC |
| 1754 | 01-14-77 | Hard Surfacing by the Spray-Fuse |
| (N-126) | 01-07-80 | Method, Section III, Class 1, 2 and |
| | 12-13-82 | 3 Construction |
| 1759-1 | 05-15-78 | Material for Internal Pressure Retain- |
| (N-131-1) | 07-13-81 | ing Items for Pressure Relief Valves, |
| | 12-11-81 | Section III, Division 1, Class 1, 2, |
| | | and 3 |

Code Case 1759-1 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants using this Case should also use Code Case 1711 for the design of pressure relief valves.

| N-205 | 05-15-78 | Use of Ductile Iron SA-395 for |
|---------|----------|---------------------------------------|
| | 07-13-81 | Section III, Division 1, Class 3 |
| | | Construction |
| N-207-1 | 03-19-79 | Use of Modified SA-479 Type XM-19 |
| | 01-21-82 | for Section III, Division 1, Class 1, |
| | | 2, 3, or CS Construction |
| N-242-1 | 04-10-80 | Materials Certification, Section III, |
| | 05-06-83 | Division 1, Classes 1, 2, 3, MC, and |
| | | CS Construction |

Code Case N-242-1 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants should identify in their Safety Analysis Reports the components and supports for which the Code Case is being applied and should specify the respective paragraphs of the Code Case.

N-245 07-09-79 Use of ASTM B61-76 and B62-76 Copper Alloy Castings for Section III, Division 1, Class 3 Construction

| N-246-2 | 05-25-83 | SB-169, Alloy C61400, Section III, |
|--------------------|----------|--------------------------------------|
| | | Division 1, Class 3 |
| N-249-3 | 02-14-83 | Additional Materials for Subsection |
| | | NF Class 1, 2, 3, and MC Compo- |
| | | nent Supports Fabricated Without |
| | | Welding, Section III, Division 1 |
| N-265 ⁵ | 01-07-80 | Modified SA-487 Castings, Section |
| 1 | 09-01-83 | III, Division 1, Class 1 |
| N-296 | 11-17-80 | Welding Material, Section III, Divi- |
| | | sion 1 Construction |
| N-337 | 04-02-82 | Use of ASTM B525-70 Grade II, |
| | | Type II, Sintered Austenitic Stain- |
| | | less Steel for Class 2, 3, and MC |
| | | Component Standard Supports, |
| | | Section III, Division 1 |
| N-348 | 09-09-82 | Use of SA-574 Socket Head Cap |
| | | Screws, Section III, Division 1 |

Code Case N-348 is acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants should justify in their Safety Analysis Reports why use of these socket head cap screws will not result in early failure from stress corrosion cracking.

| N-371 | 02-14-83 | 12 Cr-IW-1 Mo-1/4V Martensitic Stain- |
|-------|----------|---------------------------------------|
| | | less Steel Valve Internals, Section |
| 1 | | III. Division 1 |

b. Testing-oriented Code Cases:

(1) Code Case involving plates:

| 1407-3 | 07-01-74 | Time of Examination for Classes 1, |
|--------|----------|------------------------------------|
| (N-10) | 01-08-79 | 2, and 3 Section III Vessels |
| | 01-21-82 | |

(2) Code Case involving bars and forgings:

| N-329 | 12-11-81 | Examination of Bar Material, Sec- |
|-------|----------|-----------------------------------|
| | | tion III, Division I, Class 1 |

(3) Code Case involving pipe and tubes:

| 1755-1 | 01-14-77 | Alternative Rules for Examinatio |
|---------|----------|----------------------------------|
| (N-127) | 01-07-80 | of Welds in Piping, Section II. |
| 1 | 02-14-83 | Class 1 and 2 Construction |

(4) Code Cases involving general usage:

| N-274 | 03-17-80 | Alternative Rules for Examination | วท |
|-------|----------|-----------------------------------|-----|
| | 09-07-82 | of Weld Repairs for Section II | lI, |
| | | Division 1 Construction | |

Code Case N-274 is acceptable subject to the following condition⁶ in addition to those conditions specified in

the Code Case. Paragraph 6 should be expanded as follows: The ultrasonic examination procedures shall be proven by actual demonstration, to the satisfaction of the Authorized Nuclear Inspector, that the procedures are capable of detecting unacceptable cracks according to Section XI requirements.

| N-298 | 11-17-80 | Examination of Component Sup- |
|-------|----------|--|
| | | ports, Section III, Division 1, Class 1, |
| | | 2, 3, and MC |
| N-351 | 07-16-82 | Use of Subsize Charpy V-Notch |
| | | Specimens, Section III, Division 1 |

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 that were annulled on or after July 1, 1974, are listed in the following by number, effective dates, ⁷ and title. ⁸

| 1141-1 | 08-31-61 07-23-76 | Foreign Produced Steel |
|---------|----------------------|---|
| 1332-7 | 01-08-79 | Requirements for Steel Forgings, |
| (N-1-7) | 07-01-82 | Section III, Division 1 |
| 1334-3 | 04-29-74 | Requirements for Corrosion- |
| (N-2) | 01-08-79 | Resisting Steel Bars and Shapes, |
| | 01-01-81 | Section III |
| 1345-2 | 03-09-72 | Requirements for Nickel-Molybde- |
| (N-6) | 03-01-79 | num-Chromium-Iron Alloys, Section III |
| 1395-4 | 01-08-79 | SA-508, Class 2 Forgings with |
| (N-9-4) | 07-01-82 | Modified Manganese Content, Section III |
| 1412-4 | 11-03-75 | Modified High Yield Strength Steel |
| | 01-01-77 | for Section III, Division 1, Class 1 Vessels |

Code Case 1412-4 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The information required to be developed by Note 1 in the Code Case should be provided in each referencing Safety Analysis Report. The material given in the Inquiry section of the Code Case should be SA-508, Class 4b, instead of SA-508, Class 4.

| 1414-5 | 08-29-77 | High Yield | Strength | Cr-Mo Steel |
|----------|----------|-------------|-------------|---------------|
| (N-11-5) | 08-29-80 | for Section | III, Divisi | on 1, Class 1 |
| | | Vessels | | |

Code Case 1414-5 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The information required to be developed by Note 1 in the Code Case should be provided in each referencing Safety Analysis Report.

Scode Case N-265 was allowed to expire on 1-7-83 because of an administrative error. It was reinstated on 9-1-83 with no technical changes. The Case is therefore considered in effect during that period of time.

⁶The reason for the conditional acceptance of paragraph 6 is to make certain that there is a qualified ultrasoni, testing procedure capable of detecting small flaws and differentiating the small flaws from geometric reflectors. This paragraph does not in any way alter the acceptance criteria as specified in paragraph 3.

⁷ Earlier date-date Code Case was approved by ASME Council; 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.

⁸Code Cases 1401-1, 1493-1, and 1599, which were listed in the original issue of this guide, were annulled by Council action prior to July 1, 1974.

| | | | | | • |
|--|--|---|---|--|---|
| 1423-2 | 03-09-72 | Wrought Type 304 and 316 with | 1568 | 03-03-73 | Testing Lots of Flux Cored and Fab- |
| | 07-01-77 | Nitrogen Added, Sections I, III, | | 01-01-78 | ricated Carbon and Low Alloy Steel |
| | | VIII, Division 1 and 2 | | | Welding Electrodes, Section III |
| | | | 1578 | 06-25-73 | SB-167 Nickel-Chromium-Iron (Al- |
| | | was acceptable subject to compliance | (N-43) | 01-08-79 | loy 600) Pipe or Tube, Section |
| with t | he recomm | endations contained in Regulatory | | 07-01-82 | 111 |
| | | itrol of Ferrite Content in Stainless | 1583 | 06-25-73 | Use of 80-40 Carbon Steel Castings, |
| Steel \ | Weld Metal,' | ' and 1.44, "Control of the Use of | | 03-21-77 | Section III |
| Sensiti | zed Stainless | Steel." | 1587 ⁹ | 08-13-73 | SA-508 Class 3 Forgings with 0.4/1.0 |
| | | | | 12-31-75 | Ni for Section III and VIII, Division |
| 1434-1 | 03-09-72 | Postweld Heat Treatment of SA-487 | | | 2 Construction |
| | 01-01-78 | Class 8N Steel Castings, Section III | 1590 | 08-13-73 | Chemical Analysis Variations, Sec- |
| 1456-2 | 06-25-73 | Substitution of Ultrasonic Examina- | | 03-21-77 | tion III Construction |
| (N-15) | 03-01-79 | tion for Progressive Penetrant or | 1602-1 | 04-29-74 | Use of SB-42 Alloy 122, SB-111 |
| | | Magnetic Particle Examinations of | | 12-31-74 | Alloys 122, 715 and 706, SB-171 |
| | | Partial Penetration and Oblique | | | Alloys 715 and 706 and SB-466 |
| | • | Nozzle Attachment Welds, Sec- | | | Alloys 706 and 715, Section III, |
| | | tion III | | | Class 2 and 3 Components |
| 1475-1 ⁹ | 03-02-74 | Ferritic-Austenitic Stainless Steel | 1603 | 12-17-73 | Toughness Tests When Cross-Section |
| | 07-01-75 | Seamless Tubes for Section III, | | 07-01-74 | Limits Orientation and Location of |
| | | Class 2 and 3 Construction | | | Specimens |
| 1498-1 | 11-06-72 | SA-508-Class 2 and 3, Minimum | 1605 | . 11-05-73 | Cr-Ni-Mo-V Bolting Material for |
| (N-22) | 01-08-79 | Tempering Temperature, Section | | 11-20-78 | Section III, Class 1 Components |
| | 07-01-82 | 111 | | 03-17-80 | |
| 1515 | 03-09-72 | Ultrasonic Examination of Ring | 1608-1 | 12-17-73 | Use of ASME SB-265, SB-337, SB-338, |
| | 07-01-77 | Forgings for Shell Sections, Section | | 03-21-77 | SB-348, and SB-381, Grades 1, 2, 3, |
| | | III, Class 1 Vessels | | | and 7 Unalloyed Titanium and ASTM |
| 1521-1 | 04-29-74 | Use of H-Grades of SA-240, SA-479, | | | B-363 Titanium Welding Fittings, |
| | 01-01-78 | SA-336, and SA-358, Section III | | | Section III Class 2 and 3 Components |
| | | | 1612 | 12-17-73 | Use of Type 308 Stainless Steel |
| Code C | Case 1521-1 | was acceptable subject to compliance | (N-56) | 07-01-78 | Rod and Bar for Section III, Class |
| with t | he recomm | endations contained in Regulatory | | | 1, 2, 3, and CS Construction |
| Guides | 1.31, "Con | trol of Ferrite Content in Stainless | 1613 | 12-17-73 | Use of SA-372 Class IV Forgings, |
| Steel \ | Veld Metal." | | | | |
| | | and 1.44, "Control of the Use of | | 01-01-78 | Section III Construction |
| Sensiti | zed Stainless | | 1615 | 01-01-78 12-17-73 | Section III Construction Use of A587-73, Section III, Class 3 |
| Sensiti | | | 1615 | | |
| Sensitiz | | | | 12-17-73 | Use of A587-73, Section III, Class 3 |
| | zed Stainless | Steel." High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Sec- | 1615 | 12-17-73 01-01-78 | Use of A587-73, Section III, Class 3 Construction |
| | zed Stainless 11-03-75 | Steel." High Strength Steel SA-508, Class 2 | 1615 1616 ⁹ | 12-17-73 01-01-78 12-17-73 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction |
| 1528-3 | zed Stainless 11-03-75 01-01-78 | Steel." High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components | 1615 | 12-17-73 01-01-78 12-17-73 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, |
| 1528-3 | zed Stainless 11-03-75 01-01-78 | Steel." High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Sec- | 1615 1616 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction |
| 1528-3 Code C | zed Stainless 11-03-75 01-01-78 Case 1528-3 | Steel." High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components | 1615 1616 ⁹ 1622 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 |
| 1528-3 Code C | 11-03-75 01-01-78 Case 1528-3 ndition in add | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow- | 1615 1616 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, |
| Code Cong cor | zed Stainless 11-03-75 01-01-78 Case 1528-3 ndition in adde Case: The | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-lition to those conditions specified in | 1615 1616 ⁹ 1622 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 |
| Code Cong corthe Coby Not | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 addition in added Case: The | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-lition to those conditions specified in information required to be developed | 1615 1616 ⁹ 1622 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 |
| Code Cong corthe Coby Not referen | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 addition in added Case: The | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks |
| Code Cong corthe Coby Not | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 addition in added Case: The | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, |
| Code Cong corthe Coby Not referen | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 addition in adde Case: The cell in the Coing Safety | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction |
| Code Cong corthe Coby Not referen | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 addition in adde Case: The cell in the Coing Safety A 06-29-72 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fit- | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with |
| Code Cong corthe Code by Not referen | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The ce 1 in the Coing Safety A 06-29-72 07-01-73 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of |
| Code Cong corthe Code by Not referen | 2ced Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety A 06-29-72 07-01-73 08-14-72 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Al- | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calcu- |
| Code Cong corthe Code by Not referen | 2ced Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety A 06-29-72 07-01-73 08-14-72 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of |
| Code Cong con the Code by Not referen | 2ced Stainless 11-03-75 01-01-78 Case 1528-3 ndition in adde Case: The ice 1 in the C cing Safety A 06-29-72 07-01-73 08-14-72 03-21-77 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and |
| Code Cong con the Code by Not referen 15299 1531 | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety A 06-29-72 07-01-73 08-14-72 03-21-77 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III Section III, Class 3 Components Made of 8 Percent and 9 Percent Nickel Steel | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ 1645 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and CS Construction |
| Code Code Code Code Code Code Code Code | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety of the coing Safety of the cell in the Coing Safety of the Coing | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III Section III, Class 3 Components Made of 8 Percent and 9 Percent Nickel Steel Products Refined by Second- | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ 1645 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 07-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and CS Construction SA-537 Plates for Section III, Class 1, 2, 3, and MC Components Modified SA 453-GR 660 for Class 1, |
| Code Cong con the Code by Not referen 15299 1531 | 22ed Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety A 06-29-72 07-01-73 08-14-72 03-21-77 | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III Section III, Class 3 Components Made of 8 Percent and 9 Percent Nickel Steel Steel Products Refined by Secondary Remelting, Section III and | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ 1645 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and CS Construction SA-537 Plates for Section III, Class 1, 2, 3, and MC Components Modified SA 453-GR 660 for Class 1, 2, 3, and CS Construction |
| Code Cong core the Code by Not referen 15299 1531 1532 1557-3 (N-37-3) | 2ced Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety of the coing Safety of the cell in the Coing Safety of the Coing | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III Section III, Class 3 Components Made of 8 Percent and 9 Percent Nickel Steel Steel Products Refined by Secondary Remelting, Section III and VIII, Division 1 and 2 | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ 1645 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 07-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and CS Construction SA-537 Plates for Section III, Class 1, 2, 3, and MC Components Modified SA 453-GR 660 for Class 1, |
| Code Code Code Code Code Code Code Code | 2ced Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety of the coing Safety of the cell in the Coing Safety of the Coing | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-lition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III Section III, Class 3 Components Made of 8 Percent and 9 Percent Nickel Steel Steel Products Refined by Secondary Remelting, Section III and VIII, Division 1 and 2 Testing Lots of Carbon and Low | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ 1645 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 07-01-76 08-12-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and CS Construction SA-537 Plates for Section III, Class 1, 2, 3, and MC Components Modified SA 453-GR 660 for Class 1, 2, 3, and CS Construction Use of SA-414 Grade C for Class 2 and 3 Components, Section III, |
| Code Cong core the Code by Not referen 15299 1531 1532 1557-3 (N-37-3) | 2ced Stainless 11-03-75 01-01-78 Case 1528-3 Indition in adde Case: The cell in the Coing Safety of the coing Safety of the cell in the Coing Safety of the Coing | High Strength Steel SA-508, Class 2 and SA-541, Class 2 Forgings, Section III, Class 1 Components was acceptable subject to the follow-dition to those conditions specified in information required to be developed ode Case should be provided in each Analysis Report. Materials for Instrument Line Fittings, Section III Electrical Penetrations, Special Alloys for Electrical Penetration Seals, Section III Section III, Class 3 Components Made of 8 Percent and 9 Percent Nickel Steel Steel Products Refined by Secondary Remelting, Section III and VIII, Division 1 and 2 | 1615 1616 ⁹ 1622 ⁹ 1625 1634-2 (N-68) 1637 ¹⁰ 1645 ⁹ | 12-17-73 01-01-78 12-17-73 07-01-75 03-02-74 01-01-76 03-02-74 12-31-74 08-13-76 07-01-78 04-29-74 01-01-75 08-12-74 01-01-76 08-12-74 01-01-76 08-12-74 01-01-76 | Use of A587-73, Section III, Class 3 Construction Ultrasonic Examination of Seamless Austenitic Steel Pipe, Section III, Class 1 Construction PWHT of Repair Welds in Carbon Steel Castings, Section III, Class 1, 2, and 3 Repair of Section III Class 2 and 3 Tanks Use of SB-359 for Section III, Division 1, Class 3 Construction Effective Date for Compliance with NA-3700 of Section III Use of DeLong Diagram for Calculating the Delta Ferrite Content of Welds in Section III, Class 1, 2, and CS Construction SA-537 Plates for Section III, Class 1, 2, 3, and MC Components Modified SA 453-GR 660 for Class 1, 2, 3, and CS Construction Use of SA-414 Grade C for Class 2 |

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

¹⁰ Code Case 1637 has been accepted only on a case-by-case basis.

| 1664 | 11-04-74 | Use of Cr-Ni-Fe-Mo-Cu-Cb Stabilized |
|-------------------|-----------------------|---------------------------------------|
| | 03-21-77 | Alloy Cb-3 for Section III Class 2 |
| | | and 3 Construction |
| 1666 | 11-04-74 | Use of SB-12, Alloy 122 for Sec- |
| | 07-01-75 | tion III, Class 2 and 3 Construction |
| 1682-1 | 08-11-75 | Alternate Rules for Material Manu- |
| | 12-31-75 | facturers and Suppliers, Section III, |
| | | Subarticle NA-3700 |
| 1684 ⁹ | 03-03-75 | A637 Grade 718 for Bolting Class 1 |
| | 01-01-76 | and 2 Construction |
| 1690 ⁹ | 04-28-75 | Stock Materials for Section III Con- |
| | 01-01-77 | struction, Section III, Division 1 |
| 1691 | 04-28-75 | Ultrasonic Examination in Lieu of |
| | 01-01-78 | Radiography of Repair Welds for |
| | | Vessels, Section III, Class 1 |
| 1698 | 06-30-75 ⁴ | Waiver of Ultrasonic Transfer |
| (N-92) | 11-20-78 | Method, Section III, V, and VIII, |
| | 07-13-81 | Division 1 |

Code Case 1698 was acceptable subject to the following conditions in addition to those specified in the Code Case: The material from which the basic calibration block is fabricated should be of the same product form, alloy, and heat treatment as the material being examined. Alloys of equivalent P-number grouping may be used for the fabrication of calibration blocks if adjustments to signal height can be made to compensate for sound beam attenuation difference between the calibration block and the material under examination by following the transfer method procedure of T-535.1(d), Article 5, Section V, ASME B&PV Code, 1977 edition.

| 1713 | 08-11-75 | Small Material Items, Section III, |
|-----------|----------|---|
| | 12-31-75 | Division 1, Class 1, 2, 3, CS and MC |
| 1722-1 | 01-08-79 | Vacuum, Carbon Deoxidized SA- |
| (N-107-1) | 01-08-82 | 508 Forgings, Section III, Division 1 |
| 1724 | 11-03-75 | Deviation from the Specified Silicon |
| (N-108) | 07-01-78 | Ranges in ASME Material Specifica- tions, Section III, Division 1, and VIII, Division 1 and 2 |
| 1728 | 11-03-75 | Steel Structural Shapes and Small |
| 1720 | C7-01-77 | Material Products for Component |
| | G7-01-77 | Supports, Section III, Division 1 |
| | | Construction |
| 1740 | 12-22-75 | Weld Metal Test, Section III, Class 1, |
| | 07-01-76 | 2, 3, MC and CS |
| 1741-1 | 01-14-77 | Interim Rules for the Required |
| | 01-01-78 | Number of Impact Tests for Rolled |
| | | Shapes, Section III, Division 1, |
| | | Subsection NF, Component Supports |
| 1742 | 03-01-76 | Use of SB-75 Annealed Copper |
| | 07-01-76 | Alloy 122, Section III, Division 1, |
| | | Class 2 Construction |
| 1743 | 03-01-76 | Use of SB-98 Cu-SiB Rod CDA651 |
| | 07-01-76 | Section III, Division 1, Class 2 |
| | | Components |
| 1746 | 03-01-76 | Leak Testing of Seal Welds, Sec- |
| (N-123) | 03-01-79 | tion III, Division 1, Class 1, 2, and |
| , , | | 3 Construction |
| 1748 | 03-01-76 | Low Carbon Austenitic Stainless |

| (N-125) | 07-01-78 | Steel Pipe Welded With Filler Metal, |
|---|----------------------|--|
| 1240 | 04.26.26 | Section III, Division 1, Construction |
| 1760 | 04-26-76 | Maximum Dimensions for Isolated |
| | 01-01-78 | Pores in Welds-Class I Components, |
| 1244 | 04 26 26 | Section III, Division I |
| 1766 | 04-26-76 07-01-77 | Testing Requirements for Welding |
| | 07-01-77 | Materials, Class 1, 2, 3, MC and CS |
| 10.0 | 040606 | Construction, Section III, Division I |
| 1767 | 04-26-76 | Examination of Tubular Products |
| | 01-01-77 | Without Filler Metal-Class 1 Con- |
| 1770 | 08-13-76 | struction, Section III, Division 1 |
| | | Testing of Electrosing Wire and |
| (N-139) | 01-01-79 | Flux for Class 1, 2, 3, MC, and CS |
| 1771 | 00 13 7/ | Construction, Section III, Division 1 |
| 1773 | 08-13-76 | Use of Other Product Forms of |
| | 07-01-77 | Materials for Valves, Section III, |
| 1777 | 00 12 76 | Division I |
| 1777 | 08-13-76 | Use of SA-106, Grade C in Class |
| | 07-01-77 | MC Construction, Section III, Divi- |
| 1781 | 00 10 76 | sion 1 |
| (N-147) | 09-10-76 07-01-78 | Use of Modified SA-487 Grade |
| (14-147) | 07-01-78 | CA6NM, Section III, Division 1, |
| 1782 | 09-10-76 | Class 1, 2, 3, MC or CS Use of Copper-Nickel Alloy 962 for [|
| (N-148) | 08-30-79 | Castings, Section III, Division 1, |
| (14-140) | 07-16-82 | Class 3 Construction |
| | 06-30-83 | Class 5 Construction |
| 1787 | 09-10-76 | Depth of Weld Repairs for Forgings, |
| 1707 | 01-01-78 | Section III, Division 1, Class 1, 2, 3, |
| | 0. 0. 70 | MC and CS Construction |
| 1794 | 01-14-77 | Use of Seamless Al-Br, Alloy CDA |
| (N-157) | 01-07-80 | 614 Pipe, Section III, Division I, |
| (,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 01-07-83 | Class 3 |
| 1795 | 01-14-77 | Examination of Weld Repairs in |
| (N-158) | 07-01-78 | Forgings, Section III, Division 1, |
| (())) | | Class 1, 2, 3, MC and CS |
| 1798 | 01-14-77 | Use of ASTM A352-75, Grades |
| | 01-01-78 | LCA and LCC, Section III, Division |
| | | 1, Class 1, 2, and 3 |
| 1810 | 03-03-77 | Testing Lots of Carbon Steel Solid, |
| | 03-03-80 | Bare Welding Electrode or Wire, |
| | | Section III, Division 1, Class 1, 2, |
| | | 3, MC, and CS |
| 1819 ¹¹ | 03-23-77 | Use of Type XM-19 for Construc- |
| | 01-01-78 | tion, Section III, Division 1, Class |
| | | 1, 2, 3 |
| 1819-112,13 | 03-23-77 | Use of Type XM-19 for Construction, |
| (N-176-1) | 03-23-80 | Section III, Division 1, Class 1, 2, |
| | 08-25-80 | and 3 |
| | 08-25-83 | 1 |
| | | |

¹¹ This Code Case was reaffirmed as Case 1819-1. See regulatory position 2 for the effective dates.

¹²Case 1819 (N-176) was annulled December 31, 1977. However, it was later reaffirmed to continue providing rules pertaining to external pressure charts.

¹³ Code Case N-176-1: The 3-23-80 is an annulment date. This Case was allowed to expire on 3-23-80 because of an administrative error. It was reinstated on 8-25-80 with no technical changes. It is, therefore, considered to be in effect during that lapse in time. The 8-25-83 is the mandatory annulment date. The Case did not appear in Revisions 18-21 of this guide because of the ASME administative error.

| | | • |
|---------|----------|--|
| 1820 | 03-23-77 | Alternative Ultrasonic Examination |
| (N-177) | 03-17-80 | Technique, Section III, Division 1 |
| | 02-14-83 | |
| | 01-01-84 | |
| N-178 | 05-25-77 | Use of ASTM B271, CDA 954, Alloy |
| | 01-01-80 | 9C for Class 3 Construction, Sec- |
| | | tion III, Division 1 |
| N-180 | 07-11-77 | Examination of Springs for Class 1 |
| | 07-01-78 | Component Standard Supports, Sec- |
| | | tion III, Division 1 |
| N-181 | 07-11-77 | Steel Castings Refined by the Argon |
| | 07-11-80 | Decarburization Process, Section III, |
| | | Division 1, Construction |
| N-183 | 07-11-77 | Use of Modified SA-182 Grade F22 |
| | 01-01-80 | for Section III, Division 1, Class 1, |
| | | 2 and 3 Construction |
| N-190 | 08-29-77 | Use of SA-455 for Class 3 Com- |
| | 07-01-78 | ponents, Section III, Division 1 |
| N-204 | 03-20-78 | Use of Modified SA-508, Class 3, |
| | 01-01-81 | and SA-541, Class 3 for Section III, |
| | | Division 1, Class 1, 2, and 3 Con- |
| | | struction |
| N-206 | 03-20-78 | Use of ASTM B151-75 Copper-Nickel |
| | 03-16-81 | Alloy 706 Rod and Bar for Section |
| | 06-30-83 | III, Division 1, Class 3 Construction |
| N-223 | 11-30-78 | Requirements for Stainless Steel |
| | 11-20-81 | Precipitation Hardening, Section |
| | | III, Division 1, Class MC |
| N-225 | 11-20-78 | Certification and Identification of |
| | 01-01-81 | Material for Component Supports, |
| | | Section III, Division 1 |
| N-227 | 07-09-79 | Examination of Repair Welds, Sec- |
| | 07-09-82 | tion III, Class 2 and 3 Tanks |
| N-246 | 07-09-79 | Use of SB-169, Alloy CA 614, Sec- |
| | 09-07-82 | tion III, Division 1, Class 3 |
| N-248 | 08-30-79 | Alternative Reference Radiographs, |
| | 07-01-80 | Section III, Division 1, Classes 1, 2, |
| 1 | | 3, MC, and CS Construction |
| N-259 | 01-07-80 | Ni-Cu-Al Bolting Material SB 164 |
| | 02-14-83 | Modified, Section III, Division 1, |
| 1,262 | 01-01-84 | Class 3 |
| N-267 | 01-07-80 | Double-Wall Radiography, Section |
| N 277 | 07-01-81 | III, Division 1, Class 1 and 2 Use of Type XM-19 Austenitic |
| N-277 | 03-17-80 | |
| | 09-17-80 | Stainless Steel for Section III, Divi- |
| N 205 | 01.16.01 | sion I, Class MC Construction |
| N-295 | 01-15-81 | NCA-1140, Materials, Section III, |
| | 12-11-81 | Division 1 |
| N 210 1 | 06-30-82 | Contification of Dalties Materials |
| N-310-1 | 08-14-81 | Certification of Bolting Materials, |
| | 07-01-82 | Section III, Division 1, Class 1, 2, |

Code Case N-310-1 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 (1) in what way the bolting does not meet NCA-3800 (or NA-3700), (2) where the bolting will be used in the plant, and (3) how it will be shown that the bolting material properties required by the Equipment Support

3. MC and CS

Design Specification are present in the actual bolting material.

N-317 07-13-81 ASTM A276 Bar Section III, 07-01-82 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 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, ¹⁴ and title. ¹⁵

| 1332-6 | 03-09-72 | Requirements for Steel Forgings, |
|---------|----------|------------------------------------|
| | 01-08-79 | Section III and VIII, Division 2 |
| 1335-9 | 04-29-74 | Requirements for Bolting Materials |
| | 08-28-78 | |
| 1337-9 | 04-29-74 | Special Type 403 Modified Forg- |
| | 04-28-75 | ings or Bars, Section III |
| 1337-10 | 04-28-75 | Special Type 403 Modified Forg- |
| | 05-15-78 | ings or Bars, Section III |
| 1344-5 | 04-29-74 | Nickel-Chromium, Age-Hardenable |
| (N-5) | 01-08-79 | Alloys (Alloy X750), Section III |
| | 01-21-82 | |
| | 12-13-82 | |
| 1358-5 | 11-03-75 | High Yield Strength Steel, Section |
| (N-7) | 01-08-79 | III, Division 1, Class 1 Vessels |
| | 01-21-82 | |
| | 12-13-82 | |

Code Case 1358-5 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The information required to be developed by Note 1 in the Code Case should be provided in each referencing Safety Analysis Report.

| 1395-3 | 11-06-72 01-08-79 | SA-508, Class 2 Forgings with Modified Manganese Content, Section III |
|--------|----------------------|---|
| | | or Section VIII, Division 2 |
| 1407-2 | 06-26-72 | Time of Examination for Class 1, 2, |
| | 07-01-74 | and 3, Section III Vessels |
| 1414-3 | 11-03-75 | High Yield Strength Cr-Mo Steel for |
| | 03-01-76 | Section III, Division 1, Class 1 |
| | | Vessels |

Code Case 1414-3 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The information required to be developed by Note 1 in the Code Case should be provided in each referencing Safety Analysis Report.

1414-4 03-01-76 High Yield Strength Cr-Mo Steel for 08-09-77 Section III, Division I, Class 1 Vessels

¹⁴ Earlier date-date Code Case was approved by ASME Council; later date-date revision of Code Case was approved by ASME Council.

¹⁵Code Cases 1334-2, 1337-7, 1344-3, 1484, 1521, and 1542, which were listed in the original issue of this guide, were revised by the ASME prior to July 1, 1974.

Code Case 1414-4 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The information required to be developed by Note 1 in the Code Case should be provided in each referencing Safety Analysis Report.

| 1484-1 | 04-29-74 11-04-74 | SB-163 Nickel-Chromium-Iron Tubing (Alloy 600) at a Specified Minimum Yield Strength of 40.0 Ksi, |
|--------|----------------------|---|
| | | Section III, Class 1 |
| 1484-2 | 11-04-74 | SB-163 Nickel-Chromium-Iron Tub- |
| | 08-13-76 | ing (Alloy 600 and 690) at a Speci- |
| | | fied Minimum Yield Strength of |
| | | 40.0 Ksi, Section III, Class 1 |
| 149216 | 10-29-71 | Post Weld Heat Treatment, Section 1, |
| | 03-03-75 | III and VIII, Division 1 and 2 |
| 1557-2 | 12-17-73 | Steel Products Refined by Secondary |
| | 01-08-79 | Remelting |
| 1618 | 03-02-74 | Material for Core Support Struc- |
| | 03-03-75 | tures - Section III, Subsection NG |
| | | |

Code Case 1618 was acceptable subject to the following conditions in addition to those specified in the Code Case:

- a. Welding of age-hardenable alloy SA-453 Grade 660 and SA-637 Grade 688 should be performed when the material is in the solution-treated condition.
- Use of alloy ASTM A-564 Grade 631 is not acceptable on a generic basis.
- 1618-1 03-03-75 Material for Core Support Structures 03-01-76 Section III, Subsection NG

Code Case 1618-1 was acceptable subject to the following condition in addition to those specified in the Code Case: Welding of age-hardenable alloy SA-453 Grade 660 and SA-637 Grade 688 should be performed when the material is in the solution-treated condition.

| 1618-2 | 03-01-76 | Material for Core Support Structures - |
|------------------|----------|--|
| 1618-2 (N-60) | 01-08-79 | Section III, Division 1, Subsection |
| İ | 01-21-82 | NG |
| - | 05-25-83 | |

Code Case 1618-2 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Welding of age-hardenable alloy SA-453 Grade 660 and SA-637 Grade 688 should be performed when the material is in the solution-treated condition.

| 1626 | 03-02-74 | Normalized and Tempered 1-1/4 Cr |
|--------|----------|--------------------------------------|
| | 01-08-79 | Low Alloy Steel Forgings, Section 1. |
| | | Section III, and Section VIII, Divi- |
| | | sion 1 and 2 |
| 1634 | 07-01-74 | Use of SB-359 for Section III, |
| | 08-12-74 | Class 3 Construction |
| 1634-1 | 08-12-74 | Use of SB-359 for Section !!!, |
| | 08-13-76 | Class 3 Construction |

¹⁶ Code Case 1492 is no longer listed by ASME as a Section III Code Case and is therefore deleted from the acceptable listing.

1644 08-12-74 Additional Materials for Component 04-28-75 Supports - Section III, Subsection NF, Class 1, 2, 3, and MC Construction

Code Case 1644 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength of the component support material should not exceed 170 Ksi.

1644-1 04-28-75 Additional Materials for Component O6-30-75 Support - Section III, Subsection NF, Class 1, 2, 3, and MC Construction

Code Case 1644-1 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength of the component support material should not exceed 170 Ksi.

1644-2 06-30-75 Additional Materials for Component 11-03-75 Supports - Section III, Subsection NF, Class 1, 2, 3 and MC Construction

Code Case 1644-2 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength of the component support material should not exceed 170 Ksi.

1644-3 11-03-75 Additional Materials for Component
03-01-76 Supports - Section III, Subsection
NF, Class 1, 2, 3 and MC Construction

Code Case 1644-3 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength of the component support material should not exceed 170 Ksi.

1644-4 03-01-76 Additional Materials for Component O8-13-76 Supports and Alternate Design Requirements for Bolted Joints, Section III, Division 1, Subsection NF, Class 1, 2, 3 and MC Construction

Code Case 1644-4 was acceptable subject to the following conditions in addition to those specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is

not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

1644-5 08-13-76 Additional Materials for Component
03-03-77 Supports and Alternate Design
Requirements for Bolted Joints,
Section III, Division 1, Subsection NF,
Class 1, 2, 3 and MC Construction

Code Case 1644-5 was acceptable subject to the following conditions in addition to those specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of highstrength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

1644-6
03-03-77
Additional Materials for Component
11-21-77
Supports and Alternate Design
Requirements for Bolted Joints,
Section III, Division 1, Subsection
NF, Class 1, 2, 3 and MC Construction

Code Case 1644-6 was acceptable subject to the following conditions in addition to those specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of highstrength materials to brittleness and stress corrosion cracking, Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

1644-7 11-21-77 Additional Materials for Component (N-71-7) 05-15-78 Supports, Section III, Division I,

Subsection NF, Class 1, 2, 3 and MC Component Supports

Code Case 1644-7 was acceptable subject to the following conditions in addition to those specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

1644-8 05-15-78 Additional Materials for Component (N-71-8) 01-07-80 Supports, Section III, Division 1, Subsection NF, Class 1, 2, 3 and MC Component Supports

Code Case 1644-8 was acceptable subject to the following conditions in addition to those specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of highstrength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service.

1644-9 01-07-80 Additional Materials for Component Supports Fabricated by Welding, Section III, Division 1, Subsection NF, Class 1, 2, 3, and MC Component Supports

Code Case 1644-9 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: In the last sentence of paragraph 5.3, reference should be made to paragraph 4.5.2.2, "Alternate Atmosphere Exposure Time Periods Established by Test," of the AWS D.1.1 Code for the evidence presented to and accepted by the Authorized Inspector concerning exposure of electrodes for longer periods of time.

N-71-10 05-11-81 Additional Materials for Component O6-17-82 Supports Fabricated by Welding, Section III, Division 1, Subsection NF, Class 1, 2, 3, and MC Component Supports

Code Case N-71-10 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of high-strength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (1) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service. In the last sentence of paragraph 5.3, reference should be made to paragraph 4.5.2.2, "Alternate Atmosphere Exposure Time Periods Established by Test," of the AWS D.1.1 Code for the evidence presented to and accepted by the Authorized Inspector concerning exposure of electrodes for longer periods of time.

N-71-11 06-17-82 Additional Materials for Component 02-14-83 Supports Fabricated by Welding, Section III, Division 1, Subsection NF, Class 1, 2, 3, and MC Component Supports

Code Case N-71-11 was acceptable subject to the following conditions in addition to those conditions specified in the Code Case: The maximum measured ultimate tensile strength (UTS) of the component support material should not exceed 170 Ksi in view of the susceptibility of highstrength materials to brittleness and stress corrosion cracking. Certain applications may exist where a UTS value of up to 190 Ksi could be considered acceptable for a material and, under this condition, the Design Specification should specify impact testing for the material. For these cases, it should be demonstrated by the applicant that (I) the impact test results for the material meet code requirements and (2) the material is not subject to stress corrosion cracking by virtue of the fact that (a) a corrosive environment is not present and (b) the component that contains the material has essentially no residual stresses or assembly stresses, and it does not experience frequent sustained loads in service. In the last sentence of paragraph 5.3, reference should be made to paragraph 4.5.2.2, "Alternate Atmosphere Exposure Time Periods Established by Test," of the AWS D.1.1 Code for the evidence presented to and accepted by the Authorized Inspector concerning exposure of electrodes for longer periods of time.

| | 08-11-75 | facturers and Suppliers, Section III, Subarticle NA-3700 |
|-----------|-----------|---|
| 1714 | 08-11-75 | Postweld Heat Treatment of P-1 |
| | 07-11-774 | Material, Section III, Class MC |
| 1714-1 | 07-11-774 | Postweld Heat Treatment of P-1 |
| (N-102-1) | 08-28-78 | Material, Section III, Class MC |
| 1722 | 11-03-75 | Vacuum, Carbon Deoxidized SA-508 |
| | 01-08-79 | Forgings, Section III, Division I, and |
| | | VIII, Division 1 and 2 |
| 1741 | 12-22-75 | Interim Rules for the Required |
| | 01-14-77 | Number of Impact Tests for Rolled |
| | | Shapes, Section III, Division 1, |
| | | Subsection NF, Component Supports |
| 1755 | 04-26-76 | Alternative Rules for Examination |
| | 01-14-77 | of Welds in Piping, Class 1 and 2 |
| | | Construction, Section III, Division 1 |
| 1759 | 08-13-76 | Material for Internal Pressure Re- |
| | 05-15-78 | taining Items for Pressure Relief |
| | | Valves, Section III, Division 1, Class |
| | | 1, 2, and 3 |

Code Case 1759 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants using this Case should also use Code Case 1711 for the design of pressure relief valves.

| N-188 | 08-29-77 | Use of Welded Ni-Fe-Cr-Mo-Cu |
|-------|----------|---|
| | 05-15-78 | (Alloy 825) and Ni-Cr-Mo-Cb (Al- |
| | • | loy 625) Tubing, Section III, Division 1, Class 3 |
| N-207 | 03-20-78 | Use of Modified SA-479 Type |
| | 03-19-79 | XM-19 for Section III, Division 1, |
| | | Class 1, 2 or 3 Construction |
| N-224 | 11-20-78 | Use of ASTM A500 Grade B and |
| | 05-11-81 | ASTM A501 Structural Tubing for |
| | | Welded Attachments for Section III, |
| | | Class 2 and 3 Construction |
| N-242 | 04-12-79 | Materials Certification, Section III, |
| | 04-10-80 | Division 1, Classes 1, 2, 3, MC, and |
| | | CS Construction |

Code Case N-242 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Applicants should identify the components and supports requiring the use of paragraphs 1.0 through 4.0 of the Code Case in their Safety Analysis Reports.

| N-246-1 | 09-07-82 | SB-169, Alloy C61400, Section III, | | |
|---------|----------|------------------------------------|--|--|
| | 05-25-83 | Division 1, Class 3 | | |
| N-249 | 01-07-80 | Additional Materials for Compo- | | |
| | 05-11-81 | nent Supports Fabricated With- | | |
| | | out Welding, Section III, Divi- | | |
| | | sion 1, Subsection NF, Class 1, | | |
| | | 2, 3 and MC Component Supports | | |

Code Case N-249 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Footnote 2 of the Code Case should apply to all materials listed in Tables 1, 2, 3, 4, and 5 of the Code Case and should be so indicated on line 5 of the "Reply."

1682

N-249-1 05-11-81 06-17-82 Additional Materials for Component Supports Fabricated Without Welding, Section III, Division 1, Subsection NF, Class 1, 2, 3, and MC Component Supports

Code Case N-249-1 was acceptable subject to the following condition in addition to those conditions specified in the Code Case: Paragraph 7 of the "Reply" should reference the requirements of NF-2600 instead of NF-2800. This is a typographical error in that NF-2800 does not exist.

N-249-2 06-17-82 Additional Materials for Subsection NF Class 1, 2, 3, and MC Component Supports Fabricated Without Welding, Section III, Division 1

- 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 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 of 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*

| 1335-10 (N-3-10) | 1755-1 (N-127) | N-298 |
|------------------|-------------------|-------|
| 1337-11 (N-4-11) | -1759-1 (N-131-1) | N-299 |
| N-5-1 | 1772 (N-140) | N-321 |
| N-7-1 | 1793 (N-156) | N-329 |
| 1407-3 (N-10) | N-188-1 | N-337 |
| 1474-1 (N-17) | N-205 | N-342 |
| -1484-3 (N-20) | N-207-1 | N-348 |
| 1527 (N-26) | N-224-1 | N-351 |
| 1542-1 (N-33) | N-242-2 | N-352 |
| 1571 (N-41) | . N-245 | N-353 |
| N-60-1 | N-246-2 | N-367 |
| 1626-1 (N-65-1) | N-249-3 | N-370 |
| I N-71-12 | N-265 | N-371 |
| 1714-2 (N-102-2) | N-274 | N-372 |
| 1747 (N-124) | N-294 | N-379 |
| 1754 (N-126) | N-296 | N-388 |

^{*}Code Case 1624 was inadvertently listed in the appendix of Regulatory Guide 1.85, Revision 1.

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

OFFICIAL RUSINESS
PENALTY FOR PRIVATE USE: \$300

FIRST CLASS MAIL FOSTAGE & FEES PAID USWRC WASH D.C. PERMIT NO. U.S.Z.