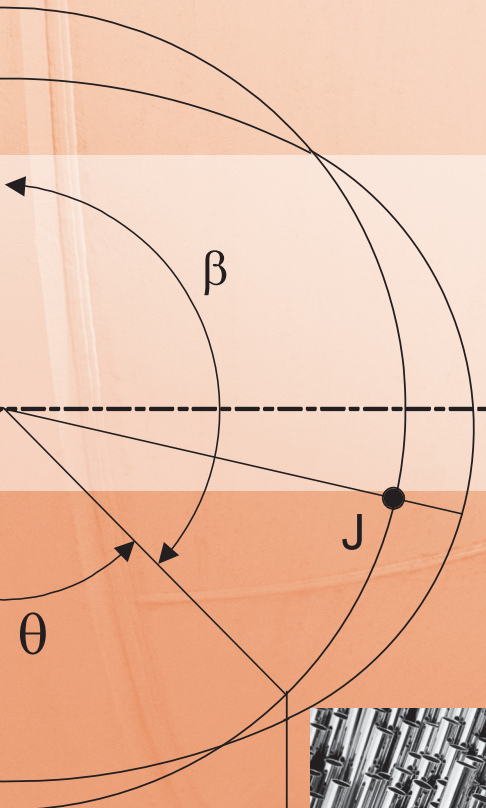
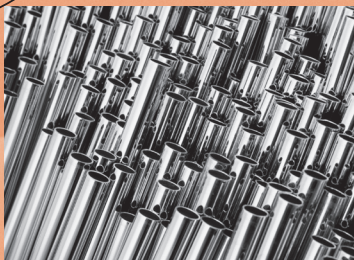


2010 ASME Boiler and Pressure Vessel Code

AN INTERNATIONAL CODE



Code Cases: Nuclear Components



Copyright © 2010 by the American Society of Mechanical Engineers.
No reproduction may be made of this material without written consent of ASME.



AN INTERNATIONAL CODE

2010 ASME Boiler & Pressure Vessel Code

2010 Edition

July 1, 2010

CODE CASES: NUCLEAR COMPONENTS



Three Park Avenue • New York, NY • 10016 USA

Copyright © 2010 by the American Society of Mechanical Engineers.
No reproduction may be made of this material without written consent of ASME.

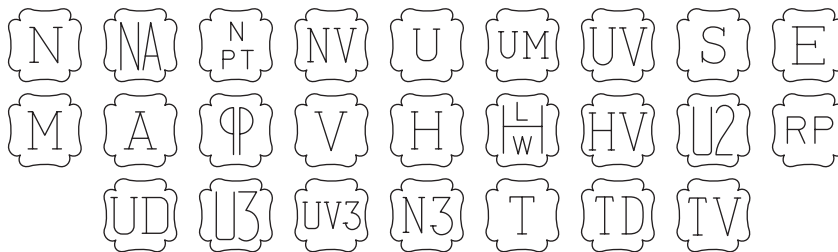
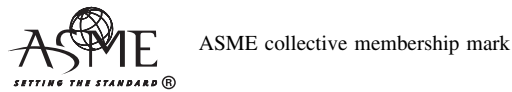


Date of Issuance: July 1, 2010
(Includes all Code Case actions published through Supplement 11 to the 2007 Edition)

ASME does not “approve,” “rate,” or “endorse” any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable letters patent, nor assume any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

The Committee’s function is to establish rules of safety, relating only to pressure integrity, governing the construction of boilers, pressure vessels, transport tanks and nuclear components, and inservice inspection for pressure integrity of nuclear components and transport tanks, and to interpret these rules when questions arise regarding their intent. This code does not address other safety issues relating to the construction of boilers, pressure vessels, transport tanks and nuclear components, and the inservice inspection of nuclear components and transport tanks. The user of the Code should refer to other pertinent codes, standards, laws, regulations, or other relevant documents.



The above ASME symbols are registered in the U.S. Patent Office.

“ASME” is the trademark of the American Society of Mechanical Engineers.

No part of this document may be reproduced in any form, in an electronic retrieval system or otherwise, without the prior written permission of the publisher.

Library of Congress Catalog Card Number: 56-3934
Printed in the United States of America

Adopted by the Council of the American Society of Mechanical Engineers, 1989, 1992, 1995, 1998, 2001, 2004, 2007,
2010

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

Copyright © 2010 by
THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS
All Rights Reserved

Copyright © 2010 by the American Society of Mechanical Engineers.
No reproduction may be made of this material without written consent of ASME.



2010 ASME

(10)

BOILER AND PRESSURE VESSEL CODE

SECTIONS

- I Rules for Construction of Power Boilers
- II Materials
 - Part A — Ferrous Material Specifications
 - Part B — Nonferrous Material Specifications
 - Part C — Specifications for Welding Rods, Electrodes, and Filler Metals
 - Part D — Properties (Customary)
 - Part D — Properties (Metric)
- III Rules for Construction of Nuclear Facility Components
 - Subsection NCA — General Requirements for Division 1 and Division 2
 - Division 1
 - Subsection NB — Class 1 Components
 - Subsection NC — Class 2 Components
 - Subsection ND — Class 3 Components
 - Subsection NE — Class MC Components
 - Subsection NF — Supports
 - Subsection NG — Core Support Structures
 - Subsection NH — Class 1 Components in Elevated Temperature Service
 - Appendices
 - Division 2 — Code for Concrete Containments
 - Division 3 — Containments for Transportation and Storage of Spent Nuclear Fuel and High Level Radioactive Material and Waste
- IV Rules for Construction of Heating Boilers
- V Nondestructive Examination
- VI Recommended Rules for the Care and Operation of Heating Boilers
- VII Recommended Guidelines for the Care of Power Boilers
- VIII Rules for Construction of Pressure Vessels
 - Division 1
 - Division 2 — Alternative Rules
 - Division 3 — Alternative Rules for Construction of High Pressure Vessels
- IX Welding and Brazing Qualifications
- X Fiber-Reinforced Plastic Pressure Vessels
- XI Rules for Inservice Inspection of Nuclear Power Plant Components
- XII Rules for Construction and Continued Service of Transport Tanks



ADDENDA

Addenda, which include additions and revisions to individual Sections of the Code, will be sent automatically to purchasers of the applicable Sections up to the publication of the 2013 Code. The 2010 Code is available only in the loose-leaf format; accordingly, the Addenda will be issued in the loose-leaf, replacement-page format.

INTERPRETATIONS

ASME issues written replies to inquiries concerning interpretation of technical aspects of the Code. The Interpretations for each individual Section will be published separately and will be included as part of the update service to that Section. Interpretations of Section III, Divisions 1

and 2, will be included with the update service to Subsection NCA.

Interpretations of the Code are posted in January and July at www.cstools.asme.org/interpretations.

CODE CASES

The Boiler and Pressure Vessel Committee meets regularly to consider proposed additions and revisions to the Code and to formulate Cases to clarify the intent of existing requirements or provide, when the need is urgent, rules for materials or constructions not covered by existing Code rules. Those Cases that have been adopted will appear in the appropriate 2010 Code Cases book: “Boilers and Pressure Vessels” and “Nuclear Components.” Supplements will be sent automatically to the purchasers of the Code Cases books up to the publication of the 2013 Code.



INDEX TO NEW AND REVISED CASES

Section III, Divisions 1, 2, and 3, and Section XI

Summary of Changes	vii
Numeric Index	ix
Subject Index	xv
Applicability Index (Section XI only)	xxiii



NOTES TO NUMERIC INDEX

- The ASME Boiler and Pressure Vessel Standards Committee took action to eliminate Code Case expiration dates, effective March 11, 2005. This means that all Code Cases listed in Supplement 3 and beyond will remain available for use until annulled by the ASME Boiler and Pressure Vessel Standards Committee. Code Cases will be routinely reviewed for possible incorporation into the body of the ASME Boiler and Pressure Vessel Code.
- There is a change in the way the supplements to the 2004 Edition are distributed. Supplement 11 is the last supplement published in the 2004 Edition, Supplement 12 will be incorporated into the 2007 Edition.
- Cases may be used beginning with the date of approval shown on the Case.
- Annulled Cases will remain in the Numeric Index until the next Edition, at which time they will be deleted.
- The digit following a Case Number is used to indicate the number of times a Case has been revised.
- Newly revised cases supersede previous versions, as indicated by an “S” in the Numeric Index.
- The Cases are arranged in numerical order, and each page of a Case is identified at the top with the appropriate Case Number.

Legend of Abbreviations

Supp. = Supplement
R = Reinstated
S = Superseded



SUMMARY OF CHANGES

(10)

Revisions given below are identified on the pages by a margin note, (10).

NUMERIC INDEX

Affected Pages: ix – xiv

SUBJECT INDEX

Affected Pages: xv – xxi

APPLICABILITY INDEX FOR SECTION XI CASES

Affected Pages: xxiii – xxxvii

NEW AND REVISED CASES

Cases	Affected Pages
N-770-1	1 – 20
N-778	1

ANNULLED CASES

Cases	Affected Pages
N-122-2	1
N-318-5	1
N-391-2	1
N-392-3	1
N-626	1

ERRATA*

Cases	Affected Pages
N-517	1
N-759-2	5
N-779	1, 2

*Errata are identified on the above pages by a margin note, **E**, placed next to the affected area.



NUMERIC INDEX

Case	Approval Date	Errata	Annulled Date/ Superseded (S)
N-4-13	2-12-08	...	...
N-60-5	2-15-94	...	...
N-62-7	5-11-94	...	...
N-71-18	12-8-00	...	...
N-122-2	4-28-94	...	8-20-09
N-131-1	12-11-81	...	...
N-133-3	7-18-85	...	...
N-154-1	12-5-85	...	...
N-155-2	1-21-82	...	...
N-160-1	7-18-85	...	...
N-192-3	7-23-02	...	...
N-201-5	9-18-06	...	...
N-205	7-13-81	...	...
N-208-2	1-4-08	...	...
N-213	8-14-81 3-6-78(ACI)	...	...
N-243	7-16-82	...	...
N-249-14	12-8-00	...	...
N-253-14	9-18-06	...	...
N-254	5-7-87	...	...
N-257	8-25-80	...	...
N-258-2	7-30-86 3-17-86(ACI)	...	...
N-284-2	1-10-07	...	...
N-290-1	4-4-83	...	...
N-312	5-25-83 9-26-83(ACI)	...	...
N-315	2-14-83	...	...
N-318-5	4-28-94	...	8-20-09
N-319-3	1-17-00	...	...
N-329	12-11-81	...	...
N-351	7-16-82	...	...
N-369	2-14-83	...	...
N-373-3	10-8-04	...	...



Case	Approval Date	Errata	Annulled Date/ Superseded (S)
N-391-2	8-24-95	...	8-20-09
N-392-3	12-12-94	...	8-20-09
N-405-1	7-24-89	...	...
N-416-4	1-12-05	...	...
N-432-1	3-28-01	...	...
N-452	3-8-89	...	...
N-453-3	12-12-95	...	...
N-454-1	4-30-92	...	...
N-455-1	4-30-92	...	...
N-460	7-27-88	...	...
N-467	5-6-89	...	...
N-469-1	6-14-00	...	...
N-483-3	5-7-99	...	...
N-491-2	3-12-97	...	...
N-493	3-14-91	...	...
N-494-4	1-12-05	...	...
N-496-2	R 9-18-01	...	...
N-498-4	2-15-99	...	...
N-499-2	9-7-01	...	...
N-500-2	2-20-04	...	...
N-504-4	7-14-06	...	...
N-505	7-27-92	...	...
N-508-4	1-26-09	...	...
N-510-1	12-12-94	...	...
N-511	2-12-93	...	...
N-513-3	1-26-09	...	...
N-516-3	4-8-02	...	...
N-517-1	7-30-98	2010	...
N-520-3	11-10-09	...	...
N-525	12-9-93	...	...
N-526	8-9-96	...	...
N-528-1	5-7-99	...	...
N-530	12-12-94	...	...
N-532-4	4-19-06	...	...
N-533-1	2-26-99	...	...
N-534	12-12-94	...	...
N-537	3-14-95	...	...
N-539	6-9-95	...	...
N-548	3-19-96	...	...



Case	Approval Date	Errata	Annulled Date/ Superseded (S)
N-552	12-12-95	...	...
N-553-1	3-28-01	...	...
N-554-3	2-14-03	...	...
N-557-1	12-31-96	...	...
N-558	8-9-96	...	...
N-560-2	3-28-00	...	...
N-561-2	3-22-07	...	...
N-562-2	3-22-07	...	...
N-564-2	1-20-00	...	...
N-565	12-31-96	...	...
N-566-2	3-28-01	...	...
N-567-1	2-26-99	...	...
N-569-1	5-7-99	...	...
N-570-2	9-9-08	...	...
N-573	3-12-97	...	...
N-575	8-14-97	...	...
N-576-1	5-7-99	...	...
N-577-1	3-28-00	...	...
N-578-1	3-28-00	...	...
N-579	8-14-97	...	...
N-580-2	1-4-08	...	...
N-583	8-14-97	...	...
N-586-1	5-4-04	...	...
N-589-1	7-23-02	...	...
N-593-1	10-8-04	...	...
N-594	3-2-98	...	...
N-595-4	5-12-04	...	...
N-597-2	11-18-03	...	...
N-600	9-18-01	...	...
N-606-1	9-24-99	...	...
N-607	2-26-99	...	...
N-609	7-30-98	...	...
N-610	7-30-98	...	...
N-611	7-30-98	...	...
N-613-1	8-20-02	...	...
N-615	3-28-01	...	...
N-616	5-7-99	...	...
N-618	6-17-03	...	...
N-619	2-15-99	...	...



Case	Approval Date	Errata	Annulled Date/ Superseded (S)
N-620	2-26-99	...	...
N-621-1	10-8-04	...	...
N-624	5-7-99	...	...
N-625-1	3-28-01	...	...
N-626	5-7-99	...	1-25-10
N-629	5-7-99	...	...
N-631	9-24-99	...	...
N-632	12-3-99	...	...
N-633	6-14-02 6-14-02(ACI)	... ...	... ...
N-635-1	2-14-03	...	...
N-636	9-24-99	...	...
N-637	9-24-99	...	...
N-638-5	4-27-09	...	...
N-639	9-24-99	...	...
N-641	1-17-00	...	...
N-642	3-28-00	...	...
N-643-2	5-4-04	...	...
N-644-1	R 2-14-03	...	...
N-645-1	2-25-02	...	...
N-646	12-8-00	...	...
N-647	12-8-00	...	...
N-648-1	9-7-01	...	...
N-649	3-28-01	...	...
N-650	3-28-01	...	...
N-651	8-14-01	...	...
N-652-1	2-20-04	...	...
N-653	9-7-01	...	...
N-654	4-17-02	...	...
N-655-1	9-21-07	...	...
N-656	2-25-02	...	...
N-657	2-25-02	...	...
N-658	4-4-02	...	...
N-659-2	6-9-08	...	...
N-660	7-23-02	...	...
N-661-2	3-22-07	...	...
N-662	8-20-02	...	...
N-663	9-17-02	...	...
N-664	8-20-02	...	...
N-665	2-28-03	...	...



Case	Approval Date	Errata	Annulled Date/ Superseded (S)
N-666	4-18-06	...	...
N-670-1	1-4-08	...	...
N-673	8-7-03	...	...
N-683	2-14-03	...	...
N-685	5-9-03	...	...
N-686-1	1-10-07	...	...
N-691	11-18-03	...	...
N-692	6-17-03	...	...
N-694-1	2-20-04	...	...
N-695	5-21-03	...	...
N-696	5-21-03	...	...
N-697	11-18-03	...	...
N-698	11-18-03	...	...
N-699	1-5-06	...	...
N-700	11-18-03	...	...
N-702	2-20-04	...	...
N-703	5-4-04	...	...
N-705	10-12-06	...	...
N-706-1	1-10-07	...	...
N-707	11-12-04	...	...
N-708	9-21-07	...	...
N-710	5-4-04	...	...
N-711	1-5-06	...	...
N-712	5-12-04	...	...
N-713	11-10-08	...	...
N-716	4-19-06	...	...
N-721	9-9-08	...	...
N-722-1	1-26-09	...	...
N-725	1-12-05	...	...
N-727	2-24-06	...	...
N-728	10-11-05	...	...
N-729-1	3-28-06	...	...
N-730	10-4-06	...	...
N-731	2-22-05	...	...
N-732	1-20-05	...	...
N-733	7-1-05	...	...
N-735	10-12-06	...	...
N-736	1-5-06	...	...
N-738	7-1-05	...	...



Case	Approval Date	Errata	Annulled Date/ Superseded (S)
N-739-1	1-21-07	...	...
N-740-2	11-10-08	...	...
N-741	10-11-05	...	...
N-744	10-11-05	...	...
N-746	1-5-06	...	...
N-747	1-13-06	...	...
N-748	9-9-08	...	...
N-751	8-3-06	...	...
N-753	7-14-06	...	...
N-755	3-22-07	...	...
N-756	1-10-07	...	...
N-757-1	9-21-07	...	...
N-759-2	1-4-08	2010	...
N-760-2	10-10-08	...	...
N-762	1-21-07	...	...
N-765	1-26-09	...	...
N-767	1-4-08	...	...
N-769	1-26-09	...	...
N-770	1-26-09	...	S
N-770-1	12-25-09	...	...
N-773	1-26-09	...	...
N-774	9-3-08	...	...
N-778	12-25-09	...	...
N-779	1-26-09	2010	...
N-782	1-30-09	...	...
N-785	10-12-09	...	...



SUBJECT INDEX

Subject	Case	Subject	Case
SECTION III — DIVISION 1			
NUCLEAR FACILITY COMPONENTS			
Additional Materials for		Boundaries Within Castings Used for Core Support Structures	N-243
Subsection NF Class 1, 2, 3, and MC Supports Fabricated		Class CS Components in Elevated Temperature Service	N-201
by Welding	N-71	Construction of Class 2 or Class 3 Components for Elevated	
Subsection NF Class 1, 2, 3, and MC Supports Fabricated		Temperature Service	N-253
Without Welding	N-249	Design Stress Intensities and Yield Strength Values for	
Air Cooling of SA-182 Grades F304, F304L, F316, F316L		UNS N06690 With a Minimum Specified Yield Strength of	
Forgings Instead of Liquid Quenching After Solution Heat		30 ksi, Class 1 Components	N-525
Treatment, Class 1, 2, and 3	N-548	Design Stress Intensities and Yield Strength Values for	
Alternative		UNS N06690 With a Minimum Specified Yield Strength of	
Methods of Nozzle Attachment for Class 1 Vessels	N-565	35 Ksi, Class 1 Components	N-698
Procedure for Evaluation of Stresses in Butt Welding		Design Stress Values for UNS N06690 With a Minimum	
Elbows in Class 1 Piping	N-319	Specified Yield Strength of 35 ksi (240 MPa), Classes 2 and	
PWHT Time at Temperature for P-No. 5A or		3 Components	N-725
P-No. 5B Group 1 Material, Classes 1, 2, and 3	N-373	Design Temperature for Atmospheric and 0–15 psi Storage	
Radiographic Acceptance Criteria for Vessels Used as		Tanks	N-511
Shipping Casks	N-493	Dissimilar Welding Using Continuous Drive Friction Welding	
Reference Stress Intensity Factor (K_{IR}) Curve for Class 1		for Reactor Vessel CRDM/CEDM Nozzle to Flange/Adapter	
Components	N-610	Welds, Class 1	N-727
Stress Intensification Factors for Circumferential Fillet		Examination of Bar Materials	N-329
Welded or Socket Welded Joints for Class 2 or 3 Piping .	N-646	Expansion Joints in Class 1, Liquid Metal Piping	N-290
Alternative Rules for		Fabrication and Installation of Elevated Temperature	
Acceptability for Class 1 Valves, NPS 1 (DN 25) and		Components, Class 2 and 3	N-254
Smaller With Nonwelded End Connections Other Than		Fatigue Analysis for Precipitation Hardening Nickel Alloy	
Flanges	N-756	Bolting Material to Specification SB-637 N07718 for	
Acceptability for Class 2 and 3 Valves, NPS 1 (DN 25)		Class 1 Construction	N-208
and Smaller With Welded and Nonwelded End		Fiberglass Reinforced Thermosetting Resin Pipe	N-155
Connections Other Than Flanges	N-757	Finned Tubing for Construction	N-160
Determining Allowable External Pressure and Compressive		F-Number Grouping for Ni-Cr-Fe, Classification UNS W86152	
Stresses for Cylinders, Cones, Spheres, and Formed		Welding Electrode	2143 ¹
Heads, Class 1, 2, and 3	N-759	F-Number Grouping for 9Cr-1Mo-V FCAW Consumable	2297 ¹
Linear Piping and Linear Standard Supports for Class 1, 2,		Guidance on Implementation of NS Certificate of	
3 and MC	N-570	Accreditation	N-607
Linear Piping Supports	N-721	Hydrostatic Testing of Internal Piping	N-237
Progressive Liquid Penetrant Examination of Groove Welds		Internal and External Valve Items	N-62
in P-No. 8 Materials $\frac{3}{16}$ in. (5 mm) Thick and Less Made		Magnetic Particle Examination of Forgings for	
by Autogenous Machine or Automatic Welding	N-642	Construction	N-732
Renewal of Active or Expired N-type Certificates for Plants		Martensitic Stainless Steel for Class 1, 2, and 3 Components ..	N-469
Not in Active Construction	N-520	Material for	
Simplified Elastic-Plastic Analysis	N-779	Core Support Structures	N-60
Standard Supports for Classes 1, 2, 3 and MC	N-500	Internal Pressure Retaining Items for Pressure Relief Valves	N-131
The Examination of Butt Welds Used as Closure Welds for		Metal Containment Shell Buckling Design Methods, Class MC	N-284
Electrical Penetration Assemblies in Containment		NDE Full Penetration Butt Welds in Class 2 Supports	N-738
Structures	N-505	Ni-Cr-Mo Alloy (UNS N06022) Welded Construction to	
Alternative Rules to the Provisions of NCA-3800,		800°F	N-621
Requirements for Purchase of Material	N-483	Ni-Cr-Mo Alloy (UNS N06059) Welded Construction to	
Borated Stainless Steel for Class CS Core Support Structures		800°F	N-625
and Class 1 Component Supports	N-510	Nickel-Chromium-Molybdenum-Copper Stainless Steel	
Boron Containing Powder Metallurgy Aluminum Alloy for		(UNS N08925 and N08926) Forged Flanges and Fittings for	
Storage and Transportation of Spent Nuclear Fuel	N-673	Class 2 and 3 Construction	N-455

¹ For Cases 2143, and 2297 see Boiler and Pressure Vessel Code Cases.



Subject	Case
Nickel-Chromium-Molybdenum-Copper Stainless Steels (UNS N08925 and N08926) for Class 2 and 3 Construction	N-453
Nickel-Chromium-Molybdenum-Copper Stainless Steel (UNS N08925 and N08926) Wrought Fittings for Class 2 and 3 Construction	N-454
Projection Resistance Welding of Valve Seats	N-154
Protection Against Overpressure of Elevated Temperature Components	N-257
Provisions for Establishing Allowable Axial Compressive Membrane Stresses in the Cylindrical Walls of 0-15 Psi Storage Tanks, Classes 2 and 3	N-530
Repair of Bellows	N-315
Repairs to P-4 and P-5A Castings Without Postweld Heat Treatment Class 1, 2 and 3 Construction	N-594
Requirements for Spent Fuel Storage Canisters	N-595
Resistance Welding of Bellows	N-369
Rules for Class 1 Type M Pumps	N-620
Socket Welds	N-405
Special Type 403 Modified Forgings or Bars	N-4
Specialized Subcontracted Welding Process (Electron Beam Welding)	N-452
Stamping of Class 2 Vessels Fabricated to Subsection NB	N-558
Testing of Elevated Temperature Components	N-467
UNS J93380 Alloy CD3MWCuN, Class 2 and 3 Construction	N-564
UNS N08367 in Class 2 and 3 Valves	N-539
Use of	
Alloy 600 With Columbium Added	N-580
Braided Flexible Connectors	N-192
Code Editions, Addenda, and Cases	N-782
Ductile Iron SA-395	N-205
18Cr-13Ni-3Mo (Alloy UNS S31703), 19Cr-15Ni-4Mo (Alloy UNS S31725) and 18.5Cr-15.5Ni-4.5Mo-N (Alloy UNS S31726) Forgings, Seamless Tubing, Plate, Welded Tubing, Welded and Seamless Pipe, Welded Pipe With Addition of Filler Metal and Fittings, Classes 2 and 3	N-636
44Fe-25Ni-21Cr-Mo (Alloy UNS N08904) Plate, Bar, Fittings, Welded Pipe, and Welded Tube Classes 2 and 3	N-637
46Fe-24Ni-21Cr-6Mo-Cu (UNS N08367) Bolting Materials for Class 2 and 3 Components	N-746
Fracture Toughness Test Data to Establish Reference Temperature for Pressure Retaining Materials Other Than Bolting for Class 1 Vessels	N-631
JIS G4303, Grades SUS304, SUS304L, SUS316, and SUS316L	N-708
Metric Units Boiler and Pressure Vessel Code	N-744
Nonstandard Nuts in Class 1, 2, and 3, MC, CS Components and Supports Construction	N-579
Polyethylene (PE) Plastic Pipe	N-755
Rupture Disk Devices on Nuclear Fuel Storage Cannisters, Class 1	N-645
SA-533 Type B, Class 1 Plate and SA-508 Grade 3 Class 1 Forgings and Their Weldments for Limited Elevated Temperature Service	N-499
SA-537, Class 2 Plate Material in Non-pressure Boundary Application Service 700°F to 850°F, Class 1 or CS	N-650
SA-479/SA-479M, UNS S41500 for Class 1, Welded Construction	N-785

Subject	Case
SA-738, Grade B, for Metal Containment Vessels, Class MC	N-655
SB-148 Alloys 952 and 954	N-133
Standard Welding Procedures	N-692
Strain Hardened Austenitic Material at Lower Design Stress Values for Class 1 Valves	N-703
Stress Limits as an Alternate to Pressure Limits Subsection NC/ND-3500	N-611
Subsize Charpy V-Notch Specimens	N-351
The N-1A Data Report Form for Spent Fuel Canisters	N-657
13Cr-4Ni (Alloy UNS S41500) Grade F6NM Forging Weighing in Excess of 10,000 lb (4 540 kg) Otherwise Conforming to the Requirements of SA-336/SA-336M Class 1, 2, and 3 Construction	N-774
Titanium Grade 2 (UNS R50400) Tube and Bar, and Grade 1 (UNS R50250) Plate and Sheet for Class 1 Construction	N-699
21Cr-6Ni-9Mn (Alloy UNS S21904) Grade FXM-11 (Conforming to SA-182/SA-182M and SA-336/SA-336M, Grade TPXM-11 (Conforming to SA-312/SA-312M and Type XM-11 (Conforming to SA-666) Material, for Class 1 Construction	N-767
22Cr-5Ni-3Mo-N (Alloy UNS S31803) Forgings, Plate, Bar, Welded and Seamless Pipe, and/or Tube, Fittings, and Fusion Welded Pipe With Addition of Filler Metal, Classes 1, 2, and 3	N-635
22Cr-5Ni-3Mo-N (Alloy UNS S32205 Austenitic/Ferritic Duplex Stainless Steel) Forgings, Plate, Welded and Seamless Pipe and Tubing, and Fittings to SA-182, SA-240, SA-789, A 790-04a, and SA-815, Classes 2 and 3	N-741
Ultrasonic Examination in Lieu of Radiography for Weld Examination	N-659
UNS S32050 Welded and Seamless Pipe and Tubing, Forgings, and Plates Conforming to SA-249/SA-249M, SA-479/SA-479M, and SA-240/SA-240M, and Grade CK35MN Castings Conforming to ASTM A 743-03 for Construction of Class 1, 2, and 3 Components	N-736
Weld Procedure Qualification for Procedures Exempt From PWHT in Classes 1, 2, and 3 Construction	N-644
Welding of Globe Valve Disks to Valve Stem Retainers, Classes 1, 2, and 3	N-760
Zirconium Alloy UNS R60702 Bars, Forgings, Plate, Seamless and Welded Fittings, Seamless and Welded Tubing, and Seamless and Welded Pipe, for Class 3 Construction	N-710

**SECTION III — DIVISION 2
CODE FOR CONCRETE CONTAINMENTS**

Design of Interaction Zones for Concrete Containments	N-258
Use of	
ASTM A 572, Grades 50 and 65 for Structural Attachments to Class CC Containment Liners	N-632
SA-533/SA-533M, Type B, Class 2, Plate for Structural Attachments to Class CC Containment Liners	N-633
Stud Welds to Anchor Section III, Division 1, Class MC Vessels to Section III, Division 2, Class CC Concrete Containment Structures	N-312
Welded Radial Shear Bar Assemblies	N-213



Subject	Case	Subject	Case
SECTION III — DIVISION 3			
CONTAINMENT SYSTEMS FOR STORAGE AND			
TRANSPORT PACKAGINGS OF SPENT NUCLEAR FUEL			
AND HIGH LEVEL RADIOACTIVE MATERIAL			
AND WASTE			
Alternative Rules to the Provisions of NCA-3800, Requirements for Purchase of Material	N-483	Pressure Test Requirement for Welded Brazed Repairs, Fabrication Welds or Brazed Joints for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding or Brazing, Classes 1, 2, and 3	N-416
Rules for the Construction of Inner Transportation Containments	N-656	Qualification Criteria for Eddy Current Examinations of Piping Inside Surfaces	N-773
Use of ASTM B 932-04 Plate Material for Nonpressure Retaining Spent Fuel Containment Internals to 650°F (343°C)	N-728	Qualification Requirements for Personnel Performing Class CC Concrete and Post-tensioning System Visual Examination	N-739
Ductile Cast Iron Conforming to ASTM A 874/A 874M-98 or JIS G5504-2005 for Transport and Storage Containments	N-670	Repair/Replacement Requirements for Items Classified in Accordance With Risk-Informed Processes	N-662
Eddy Current Examination in Lieu of Liquid Penetrant Examination	N-748	Requirements for Beam Angle Measurements Using Refracted Longitudinal Wave Search Units	N-665
Metric Units Boiler and Pressure Vessel Code	N-744	Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds	N-702
SA-537, Class 1 Plate Material for Spent-Fuel Containment Internals in Non-pressure Retaining Applications Above 700°F (370°C)	N-707	Requirements for Classes 1 and 2 Surface Examinations	N-663
Standard Welding Procedures	N-692	Requirements for Inner Radius Examinations of Class 1 Reactor Vessel Nozzles	N-648
Ultrasonic Examination in Lieu of Radiography for Weld Examination	N-659	Requirements for IWE-5240 Visual Examination	N-649
SECTION XI			
RULES FOR INSERVICE INSPECTION OF NUCLEAR			
POWER PLANT COMPONENTS			
Acceptance Criteria for Flaws in Ferritic Steel Components 4 in. and Greater in Thickness	N-654	Requirements for Nozzle Inner Radius Inspections for Class 1 Pressurizer and Steam Generator Nozzles	N-619
Additional Examination for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials	N-722	Requirements for Pneumatic Pressure Testing	N-534
Alternative Additional Examination Requirements for Classes 1, 2, and 3 Piping, Components, and Supports	N-586	Requirements for Preparation and Submittal of Plans, Schedules, and Preservice and Inservice Inspection Summary Reports	N-778
Calibration Block Material	N-639	Requirements for Reconciliation of Replacement Items and Addition of New Systems	N-554
Class 1 System Leakage Test Pressure Requirements	N-731	Requirements for Successive Inspections of Class 1 and 2 Vessels	N-526
Examination Coverage for Class 1 and Class 2 Welds	N-460	Requirements for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems	N-498
Examination Coverage Requirements for Examination Category B-F, B-J, C-F-1, C-F-2, and R-A Piping Welds	N-711	Requirements for VT-2 Visual Examination of Class 1, 2, and 3 Insulated Pressure-Retaining Bolted Connections	N-533
Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities	N-770	Requirements for VT-2 Visual Examination of Classes 1, 2, and 3 Insulated Pressure Retaining Bolted Connections	N-616
Examination Requirements for Class 1, Category B-J Piping Welds	N-560	Requirements for Visual Examinations, VT-1, VT-2, and VT-3	N-686
Examination Requirements for Full Penetration Nozzle-to- Vessel Welds in Reactor Vessels with Set-On Type Nozzles	N-575	Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping	N-561
Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial- Penetration Welds	N-729	Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping	N-562
Examination Requirements to Table IWB-2500-1 and Table IWC-2500-1 for PWR Stainless Steel Residual and Regenerative Heat Exchangers	N-706	Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service	N-661
Methods — Qualification for Nozzle Inside Radius Section from the Outside Surface	N-552	Requirements to Categories B-G-1, B-G-2, and C-D Bolting Examination Methods and Selection Criteria	N-652
Piping Classification and Examination Requirements	N-716	Requirements to Stress-Based Selection Criteria for Category B-J Welds	N-609
Pressure-Temperature Relationship and Low Temperature Overpressure Protection System Requirements	N-641	Rules for Examination of Class 1, 2, 3, and MC Component Supports of Light-Water Cooled Power Plants	N-491
		Rules for Repair by Electrochemical Deposition of Class 1 and 2 Steam Generator Tubing	N-569
		Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping	N-504
		Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination	N-700
		To Augmented Examination Requirements of IWE-2500	N-647
		To Inspection Interval Scheduling Requirements of IWA-2430	N-765
		Annual Training Alternative	N-583
		Application of Risk-Informed Insights to Increase the Inspection Interval for Pressurized Water Reactor Vessels	N-691
		Class 1 Socket Weld Examinations	N-712
		Class 3 Nonmetallic Cured-In-Place Piping	N-589



Subject	Case
Corrective Action for Leakage Identified at Bolted Connections	N-566
Eddy Current Surface Examination	N-553
Evaluation Criteria for Temporary Acceptance of Degradation in Moderate Energy Class 2 or 3 Vessels and Tanks	N-705
Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping.	N-513
Evaluation Procedure and Acceptance Criteria for PWR Reactor Vessel Head Penetration Nozzles	N-694
Examination Requirements for Steam Generator Nozzle-to-Vessel Welds.	N-593
F-Number Grouping for Ni-Cr-Fe, Classification UNS W86152 Welding Electrode	2143 ¹
F-Number Grouping for 9Cr-1Mo-V FCAW Consumable	2297 ¹
Full Structural Dissimilar Metal Weld Overlay for Repair or Mitigation of Class 1, 2, and 3 Items	N-740
Fatigue Crack Growth Rate Curves for Ferritic Steels in PWR Water Environment	N-643
Ferritic and Dissimilar Metal Welding Using SMAW Temper Bead Technique Without Removing the Weld Bead Crown of the First Layer	N-651
Helical-Coil Threaded Inserts	N-496
In-Place Dry Annealing of a PWR Nuclear Reactor Vessel	N-557
Lighting Requirements for Surface Examination	N-685
Location of Ultrasonic Depth-Sizing Flaws.	N-537
Method for Determining Maximum Allowable False Calls When Performing Single-Sided Access Performance Demonstration in Accordance With, Appendix VIII, Supplements 4 and 6.	N-683
Mitigation of Flaws in NPS 2 (DN 50) and Smaller Nozzles and Nozzle Partial Penetration Welds in Vessels and Piping by Use of Mechanical Connection Modification	N-733
Performance Demonstration Requirements for Examination of Unclad Reactor Pressure Vessel Welds, Excluding Flange Welds	N-664
Pipe Specific Evaluation Procedures and Acceptance Criteria for Flaws in Piping that Exceed the Acceptance Standards.	N-494
Pressure Testing of Containment Penetration Piping.	N-751
Pressurized Water Reactor (PWR) Examination and Alternative Examination Requirements for Pressure Retaining Welds in Control Rod Drive and Instrument Nozzle Housings	N-697
Purchase, Exchange, or Transfer of Material Between Nuclear Plant Sites.	N-528
Qualification Requirements for Appendix VIII Piping Examinations Conducted From the Inside Surface	N-696
Qualification Requirements for Dissimilar Metal Piping Welds	N-695
Qualification Requirements for Full Structural Overlaid Wrought Austenitic Piping Welds.	N-653
Qualification Requirements for Ultrasonic Examination of Wrought Austenitic Piping Welds	N-658
Quality Assurance Program Requirements for Owners.	N-517
Reactor Vessel Head-to-Flange Weld Examination	N-747
Reconciliation for Class 1, 2, and 3 Replacement Components	N-567
Repair of Class 1 and 2 SB-163, UNS N06600 Steam Generator Tubing	N-576
Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission.	N-532
Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temper Bead Technique	N-432
Requirements for Analytical Evaluation of Pipe Wall Thinning	N-597
Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method A	N-577

Subject	Case
Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method B	N-578
Risk-Informed Safety Classification for Use in Risk-Informed Repair/Replacement Activities	N-660
Roll Expansion of Class 1 Control Rod Drive Bottom Head Penetrations in BWRs	N-730
Roll Expansion of Class 1 In-Core Housing Bottom Head Penetrations in BWRs	N-769
Rotation of Snubbers and Pressure Retaining Items for the Purpose of Testing or Preventive Maintenance	N-508
Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique.	N-638
Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique for BWR CRD Housing/Stub Tube Repairs	N-606
Successive Inspections.	N-624
Successive Inspections of Class 1 and 2 Piping Welds	N-735
Temper Bead Procedure Qualification Requirements for Repair/Replacement Activities Without Postweld Heat Treatment.	N-762
Transfer of Procedure Qualification Records Between Owners	N-573
Transfer of Welder, Welding Operator, Brazer, and Brazing Operator Qualifications Between Owners	N-600
Ultrasonic Examination as a Surface Examination Method for Category B-F and B-J Piping Welds	N-615
Ultrasonic Examination in Lieu of Radiography	N-713
Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Nozzle-To-Vessel Welds, Figs. IWB-2500-7(a), (b), and (c)	N-613
Underwater Welding	N-516
Use of A Reactor Pressure Vessel as a Transportation Containment System	N-618
Fracture Toughness Test Data to Establish Reference Temperature for Pressure Retaining Materials	N-629
Polyethylene (PE) Plastic Pipe.	N-755
Vision Tests	N-753
Weld Overlay of Class 1, 2, and 3 Socket Welded Connections	N-666

**INDEX OF MATERIAL SPECIFICATIONS
REFERRED TO IN CASES**

ASME Specification	
SA-6.	N-71
SA-36	N-71, 249
SA-105	N-253
SA-106 Grades B, C.	N-253
SA-178 Grade C.	N-253
SA-181 Classes 60, 70	N-253
SA-182	N-635, 636, 741, 767
SA-182 Grades F1, F12, F22, F321, F321H	N-253
SA-182 Grades F11 and F22a	N-201
SA-182 Grades F304, F304H, F316, F316H	N-201, 253
SA-182 Grades F304, F304L, F316, F316L	N-548
SA-182 Grade F347	N-60
SA-193	N-71, 249
SA-193 Grades B5, B7, B16	N-253
SA-193 Grades B8, B8M	N-60, 201, 253
SA-193 Grade B8C	N-60



Subject	Case	Subject	Case
SA-193 Grade B8T	N-60, 253	SA-479	N-60, 192, 635, 636, 736
SA-193 Type B16	N-201	SA-479 Type 316	N-703
SA-194	N-60, 71, 249, 579	SA-479 Types 304, 316	N-201, 253
SA-204 Grades A, B, C	N-253	SA-479 Types 304H, 316H	N-201, 253
SA-210 Grade A-1	N-253	SA-479 Types 321, 321H	N-253
SA-212	N-636	SA-479 Type XM-30	N-62
SA-213	N-636	SA-487	N-71
SA-213 Grades T9, T12	N-253	SA-487 Class 10 Q	N-407
SA-213 Grade T22	N-201, 253	SA-508 Class 2	N-253
SA-213 Grades TP304, TP304H, TP316, TP316H	N-201, 253	SA-508 Grade 3 Class 1	N-499
SA-213 Grades TP304N, TP316N, TP321, TP321H	N-253	SA-508 Grade 4N Class 2	N-71
SA-216 Grades WCA, WCB, WCC	N-253	SA-508 Grade 2, Class 1	N-557, 610
SA-217 Grade C12	N-71, 249	SA-508 Grade 3, Class 1	N-557, 610
SA-217 Grades WC1, WC9	N-253	SA-515 Grades 60, 65, 70	N-253
SA-234	N-253	SA-517 Grades A, B, E, F, J, P	N-71
SA-234 Grades WP22 and WP22W	N-201	SA-524 Grades I, II	N-71
SA-240	N-635, 636, 736, 741	SA-533 Grade B, Class 1	N-499, 512, 557
SA-240 Grades 304, 304H, 316, 316H	N-201, 253	SA-533 Type B Class 1	N-610
SA-240 Grades 304N, 316N, 321, 321H	N-253	SA-533 Type B Class 2	N-633
SA-240 Grades 410, XM-19	N-60	SA-533 Type C Class 1	N-253
SA-240 Type XM-17	N-249	SA-537	N-650
SA-249	N-636, 736	SA-537 Class 1	N-707
SA-249 Grades TP304, TP304H, TP316, TP316H	N-201, 253	SA-540 Grades B21, B22, B23, B24	N-249
SA-266 Class 2	N-253	SA-540 Type B21	N-201
SA-276 Type 403	N-4	SA-541 Class 2	N-253
SA-283 Grade C	N-71	SA-541 Class 22C	N-71
SA-302 Grade B	N-253, 638	SA-542 Classes 1, 2, 3, 4	N-71
SA-307 Grade A	N-249	SA-543 Types B,C Classes 1,2,3	N-71
SA-312	N-636, 767	SA-563	N-249
SA-312 Grades TP304, TP304H, TP316, TP316H	N-201, 253	SA-564 Grade 630	N-616
SA-312 Grades TP304N, TP316N, TP321, TP321H	N-253	SA-564 Grade 630 Types XM-12, XM-13	N-249
SA-320	N-71, 249	SA-574	N-249
SA-325 Type 1	N-249	SA-592 Grades A, E, F	N-71
SA-335 Grades P1, P9, P12, P22	N-253	SA-609	N-670
SA-335 Grade P22	N-201, 774	SA-638 Grade 660	N-60
SA-336	N-201, 253, 767	SA-666	N-767
SA-336 Class F22A	N-201	SA-675 Grades 65, 70	N-71
SA-336 Grades F304 & F304H and F316 & F316H	N-201	SA-691 Grade 2 $\frac{1}{4}$ Cr.	N-253
SA-351	N-539	SA-691 Grade 2 $\frac{1}{4}$	N-201
SA-351 Grades CF8, CF8M, CF3M	N-253	SA-693	N-249
SA-354 Grades BC, BD	N-249	SA-738	N-655
SA-358	N-636	SA-751	N-483
SA-358 Grades 304 and 316	N-201	SA-789	N-635, 741
SA-358 Grade 304N	N-253	SA-790	N-635, 741
SA-369 Grade FP22	N-201	SA-813	N-636
SA-369 Grades FP1, FP9, FP12, FP22	N-253	SA-815	N-635, 741
SA-370	N-351, 483, 510, 516, 606, 638, 651, 762	SA-928	N-635
SA-376	N-636	SA-965	N-201, 253
SA-376 Grades TP304, TP304H, TP316, TP316H	N-201, 253	SA-995	N-564
SA-376 Grades TP304N, TP316N, TP321, TP321H	N-253	SB-148 Alloy 954	N-229
SA-387 Grades 11 and 22	N-201	SB-148 Alloys 952, 954	N-133
SA-387 Grade 12 Classes 1, 2; Grade 22 Classes 1, 2	N-253	SB-150 Alloys 614, 630	N-133, 249
SA-395	N-205	SB-150 Alloy C64200	N-249
SA-403	N-201, 253, 636	SB-150 Alloys C61400, C63000	N-249
SA-403 Grades WP304 & WP304H, WP304W & WP304HW, WP316 & WP316H, and WP316W & WP316HW	N-201	SB-163	N-576
SA-426 Grade CP22	N-201	SB-163 Alloys 600, 800, 800H	N-253
SA-430 Grades FP304, FP304H, FP316, FP316H	N-201, 253	SB-163 Alloy 800H	N-201
SA-430 Grades FP304N, FP316N, FP321, FP321H	N-253	SB-166	N-525, 580
SA-449	N-249	SB-166 Alloy 600	N-253
SA-452 Grades TP304H, TP316H	N-253	SB-167	N-525, 580, 698, 725
SA-453 Grade 660	N-60, 249, 253, 616, 733	SB-167 Alloy 600	N-253
		SB-168	N-525, 580



Subject	Case	Subject	Case
SB-168 Alloy 600	N-60, 253	A 331-74 Grades 4140, 4340	N-62
SB-169 Alloy C61400	N-249	A 331-95 Grade 8620CW	N-71
SB-221	N-673	A 381-96 Class Y35	N-71
SB-265	N-699	A 434-90a Classes BB, BC BD	N-249
SB-271 Alloy C95400	N-249	A 453-75 Grade 660	N-62
SB-338 Grade 2	N-699	A 458-71 Grade 651	N-131
SB-348 Grade 2	N-699	A 471-94 Classes 2 through 6	N-249
SB-366	N-621, 625, 637	A 477-41 Grade 651	N-131
SB-407 Alloy 800H	N-201, 253	A 479-74 Grade XM-19	N-60
SB-408 Alloy 800H	N-201, 253	A 479-75 Grade 410	N-62, 131
SB-409 Alloy 800H	N-201, 253	A 490-97	N-249
SB-435 Alloy X	N-253	A 500-99 Grades B,C	N-71
SB-493	N-710	A 501-99	N-71
SB-523	N-710	A 511-71 Grades MT304, MT304L, MT316, MT316L	N-60
SB-550	N-710	A 513-98	N-71, 249
SB-551	N-710	A 514-94a	N-71
SB-564	N-201, 539, 580, 621, 625, 725	A 519-96	N-249
SB-564 Alloys 600, 800, 800H	N-253	A 519-96	N-71
SB-564 Alloy 800H	N-201	A 521-96 Classes CC, CE	N-71
SB-572 Alloy X	N-253	A 521-96 Class CG	N-249
SB-574	N-621, 625	A 541-81 Class 6	N-71
SB-575	N-621, 625	A 546-82	N-249
SB-584 Alloy C93700	N-249	A 554-72 Grades MT304, MT304L, MT316, MT316L	N-60
SB-619	N-621, 625	A 564 Type XM-13	N-249
SB-622	N-621, 625	A 564-74 Grades 630, XM-25	N-131
SB-625	N-637	A 565-74 Grades 615, 616	N-62, 131
SB-626	N-621, 625	A 567-74 Grade 1	N-62
SB-637	N-208, 616	A 570-98 Grades 33, 36, 45	N-71
SB-637 Grade 688	N-60	A 572 Grades 50, 65	N-632
SB-637 Grade 718	N-253	A 572 Grades 60, 65	N-213
SB-649	N-637	A 572-99a Classes 42, 50	N-71
SB-658	N-710	A 579-99 Grade 12a	N-249
SB-673	N-637	A 580-75	N-192
SB-674	N-637	A 580-83 Grades 302, 304, 316, 317 Class B	N-249
SB-688	N-539	A 580-98 Grades 302, 304, 316, 317 Class B	N-249
SB-691	N-746	A 581-80	N-249
SFA-5.1	N-651	A 582-75 Grades 416, 416Se	N-62
SFA-5.4	N-201, 516	A 582-95b Grades 303, 303Se, 416, 416Se	N-249
SFA-5.5	N-253, 407, 651	A 588-97a Grades A,B	N-71
SFA-5.9	N-201, 253	A 611-97 Grades A,B,C	N-71
SFA-5.11	N-201, 253, 453, 454, 455, 770	A 618-99 Types II, III	N-71
SFA-5.14	N-201, 253, 453, 454, 455, 770	A 633 Grade E	N-213
SFA-5.22	N-201, 253	A 633-95 Grades A,C,D,E	N-71
SFA-5.23	N-201, 253	A 638-70 Grade 660	N-62
SFA-5.28	N-201, 253	A 653-99	N-71, 249
ASTM Specification		A 668-96e1 Classes B,C,D,F,K,L	N-71
A 108-99	N-71, 249	A 668-96e1 Classes B,C,D,F,K,L,M,N	N-249
A 148-93b	N-71, 249	A 675-90a Grade 75	N-71
A 182-75 Grade F6	N-62	A 693-84 Grade 630	N-249
A 217-75 Grade CA15	N-62	A 703	N-564
A 228-93	N-249	A 706	N-213
A 240-75 Grades 410, 410S	N-62	A 710-95 Grade A	N-71
A 268-74a Grade TP410	N-62	A 743-03	N-736
A 276	N-570	A 790-04a	N-741
A 276-73 Type 403	N-131	A 874/A 874M-98	N-670
A 276-75 Types 316, 403, 410, 420, 440C	N-62	A 887-89 Grade A, Types 304B, 304B1, 304B2, 304B3, 304B4, 304B5 and 304B6	N-510
A 276-98b Types 420, 440C	N-249	A 890	N-564
A 314-75 Grades 403, 410, 416, 416Se	N-62	B 16-92 Alloy C36000, Class H102	N-249
A 322-91 Grade 4150	N-249	B 124-99 Alloy C37700, Class M30	N-249
		B 243	N-673
		B 311	N-673



APPLICABILITY INDEX FOR SECTION XI CASES

This Index provides the range of Section XI Editions and Addenda applicable to each Section XI Case.

Code Case No.	Title	Applicability	
		From	Up To and Including
N-34	Inservice Inspection of Welds on Nuclear Components	1970 Edition	1971 Edition with the Summer 1973 Addenda
N-72	Partial Postponement of Category B-C Examinations for Class 1 Components	1974 Edition	1977 Edition with the Winter 1977 Addenda
N-73	Partial Postponement of Category B-D Examinations for Class 1 Components	1974 Edition	1977 Edition with the Winter 1977 Addenda
N-98	Ultrasonic Examination — Calibration Block Tolerances [Note (1)]:		
	(a) For Division 1	1974 Edition	1977 Edition with the Summer 1978 Addenda
	(b) For Division 2	1974 Edition with the Winter 1975 Addenda	Not applicable
N-112	Acceptance Standards Class 2 and 3 Components	1974 Edition	1974 Edition with the Winter 1975 Addenda
N-113	Basic Calibration Block for Ultrasonic Examination of Welds 10 in. to 13 in. Thick	1971 Edition with the Summer 1973 Addenda	1974 Edition with the Summer 1976 Addenda
N-113-1	Basic Calibration Block for Ultrasonic Examination of Welds 10 in. to 14 in. Thick	1971 Edition with the Summer 1973 Addenda	2001 Edition
N-118	Examination — Acceptance Standards for Surface Indications in Cladding	1974 Edition with the Summer 1974 Addenda	1974 Edition with the Winter 1975 Addenda
N-166	Reference by Section XI to N626.1-1975 for Qualification and Duties of Authorized Nuclear Inservice Inspection	1974 Edition	1977 Edition
N-167	Minimum Section Thickness Requirements for Repair of Nozzles	1974 Edition	1977 Edition with the Winter 1977 Addenda
N-198	Exemption From Examination for ASME Class 2 Piping Located at Containment Penetrations	1974 Edition with the Summer 1976 Addenda	1977 Edition with the Winter 1977 Addenda
N-198-1	Exemption From Examination for ASME Class 1 and 2 Piping Located at Containment Penetrations	1974 Edition with the Summer 1976 Addenda	1992 Edition with the 1993 Addenda
N-209	Conditional Acceptance of Identifiable Isolated or Random Rounded Indications		
	(a) For Class 1 Systems	1974 Edition	1980 Edition with the Winter 1980 Addenda
	(b) For Class 2 Systems	1974 Edition with the Summer 1976 Addenda	1983 Edition
N-210	Exemptions to Hydrostatic Test After Repairs	1974 Edition	1977 Edition with the Winter 1977 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-211	Recalibration of Ultrasonic Equipment Upon Change of Personnel		
	(a) To meet requirements of I-4230	1971 Edition with the Summer 1973 Addenda	1974 Edition with the Summer 1976 Addenda
	(b) To meet requirements of III-3330	1977 Edition	1980 Edition
N-216	Alternative Rules for Reactor Vessel Closure Stud Examination	1977 Edition	1977 Edition with the Winter 1977 Addenda
N-234	Time Between Ultrasonic Calibration Checks		
	(a) To meet requirements of I-4230	1971 Edition with the Summer 1973 Addenda	1974 Edition with the Summer 1976 Addenda
	(b) To meet requirements of III-3330	1977 Edition	1980 Edition
N-235	Ultrasonic Calibration Checks per Section V	1974 Edition with the Winter 1976 Addenda	1977 Edition with the Summer 1979 Addenda
N-236	Repair and Replacement of Class MC Vessels	1974 Edition	1983 Edition with the Winter 1984 Addenda
N-236-1	Repair and Replacement of Class MC Vessels	1974 Edition	1989 Edition with the 1990 Addenda
N-252	Low Energy Capacitive Discharge Welding Method for Temporary or Permanent Attachments to Components and Supports	1971 Edition	1980 Edition with the Winter 1980 Addenda
N-278	Alternative Ultrasonic Calibration Block Configuration, I-3131 and T-434.3		
	(a) To meet requirements of I-3131	1974 Edition	1974 Edition with the Summer 1976 Addenda
	(b) To meet requirements of T-434.3	1977 Edition	1983 Edition with the Winter 1984 Addenda
N-288	Hydrostatic Test Requirements for Class 1 and 2 Components	1974 Edition	1980 Edition with the Winter 1980 Addenda
N-306	Calibration Block Material Selection, Appendix I, I-3121 [Note (2)]	1974 Edition with the Summer 1975 Addenda	1974 Edition with the Summer 1976 Addenda
N-307	Revised Ultrasonic Examination Volume for Class 1 Bolting, Examination Category B-G-1, When the Examinations Are Conducted From the Center-Drilled Hole	1974 Edition	1983 Edition with the Winter 1984 Addenda
N-307-1	Revised Ultrasonic Examination Volume for Class 1 Bolting, Table IWB-2500-1, Examination Category B-G-1, When the Examinations Are Conducted From the Center-Drilled Hole	1974 Edition	1998 Edition with the 1999 Addenda
N-307-2	Revised Ultrasonic Examination Volume for Class 1 Bolting, Table IWB-2500-1, Examination Category B-G-1, When the Examinations Are Conducted From the End of the Bolt or Stud or From the Center-Drilled Hole	1974 Edition	1998 Edition with the 1999 Addenda
N-307-3	Ultrasonic Examination of Class 1 Bolting, Table IWB-2500-1, Examination Category B-G-1	1974 Edition	1998 Edition with the 1999 Addenda
N-308	Documentation of Repairs and Replacements of Components in Nuclear Power Plants	1974 Edition	1980 Edition with the Winter 1981 Addenda
N-311	Alternative Examination of Outlet Nozzle on Secondary Side of Steam Generators	1977 Edition with the Winter 1977 Addenda	2004 Edition



Code Case No.	Title	Applicability	
		From	Up To and Including
N-322	Examination Requirements for Integrally Welded or Forged Attachments to Class 1 Piping at Containment Penetrations	1977 Edition with the Summer 1978 Addenda	1992 Edition with the 1993 Addenda
N-323	Alternative Examinations for Integrally Welded Attachments to Vessels	1974 Edition	1974 Edition with the Winter 1976 Addenda
N-323-1	Alternative Examination for Welded Attachments to Pressure Vessels	1980 Edition with the Winter 1981 Addenda	1995 Edition with the 1996 Addenda
N-334	Examination Requirements for Integrally Welded or Forged Attachments to Class 2 Piping at Containment Penetrations	1977 Edition with the Summer 1978 Addenda	1980 Edition with the Summer 1980 Addenda
N-335	Rules for Ultrasonic Examination of Similar and Dissimilar Metal Piping Welds	1974 Edition	1980 Edition with the Winter 1981 Addenda
N-335-1	Rules for Ultrasonic Examination of Similar and Dissimilar Metal Piping Welds	1974 Edition	1980 Edition with the Winter 1981 Addenda
N-343	Alternative Scope of Examination of Attachment Welds for Examination Categories B-H, B-K-1, and C-C	1974 Edition	1980 Edition with the Winter 1981 Addenda
N-355	Calibration Block for Angle Beam Ultrasonic Examination of Large Fittings in Accordance With Appendix III-3410 [Note (3)]	1974 Edition with the Winter 1975 Addenda	1983 Edition
N-356	Certification Period for Level III NDE Personnel	1977 Edition with the Winter 1977 Addenda	1983 Edition
N-375	Rules for Ultrasonic Examination of Bolts and Studs	1980 Edition	1980 Edition with the Winter 1981 Addenda
N-375-1	Rules for Ultrasonic Examination of Bolts and Studs	1980 Edition	1980 Edition with the Winter 1981 Addenda
N-375-2	Rules for Ultrasonic Examination of Bolts and Studs	1971 Edition	1983 Edition
N-389	Alternative Rules for Repairs, Replacements, or Modifications	1974 Edition with the Summer 1975 Addenda	1986 Edition with the 1987 Addenda
N-389-1	Alternative Rules for Repairs, Replacements, or Modifications	1974 Edition with the Summer 1975 Addenda	1992 Edition with the 1993 Addenda
N-390	Evaluation Criteria for Flaws Located in a Flange or Shell Region Near a Structural Discontinuity	1974 Edition with the Summer 1975 Addenda	1983 Edition with the Summer 1983 Addenda
N-401	Eddy Current Examination	1974 Edition with the Summer 1976 Addenda	1989 Edition with the 1989 Addenda
N-401-1	Eddy Current Examination	1974 Edition with the Summer 1974 Addenda	1989 Edition with the 1989 Addenda
N-402	Eddy Current Calibration Standard Material	1980 Edition with the Winter 1980 Addenda	1989 Edition with the 1989 Addenda
N-402-1	Eddy Current Calibration Standards	1980 Edition with the Winter 1980 Addenda	1989 Edition with the 1989 Addenda
N-406	Alternative Rules for Replacement	1977 Edition with the Summer 1978 Addenda	1986 Edition
N-408	Alternative Rules for Examination of Class 2 Piping	1974 Edition	1983 Edition
N-408-1	Alternative Rules for Examination of Class 2 Piping	1974 Edition	1983 Edition
N-408-2	Alternative Rules for Examination of Class 2 Piping	1974 Edition	1989 Edition
N-408-3	Alternative Rules for Examination of Class 2 Piping	1974 Edition	1989 Edition
N-409	Procedure and Personnel Qualification for Ultrasonic Detection and Sizing of Intergranular Stress Corrosion Cracking in Austenitic Piping Welds	1974 Edition	1986 Edition with the 1986 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-409-1	Procedure and Personnel Qualification Requirements for Ultrasonic Detection and Sizing of Intergranular Stress Corrosion Cracking in Austenitic Piping Welds	1974 Edition	1986 Edition with the 1987 Addenda
N-409-2	Procedure and Personnel Qualification Requirements for Ultrasonic Detection and Sizing of Intergranular Stress Corrosion Cracking in Austenitic Piping Welds	1974 Edition	1989 Edition
N-409-3	Procedure and Personnel Qualification Requirements for Ultrasonic Detection and Sizing of Intergranular Stress Corrosion Cracking in Austenitic Piping Welds	1974 Edition	1989 Edition
N-415	Alternative Rules for Testing Pressure Relief Devices	1974 Edition	1983 Edition with the Winter 1984 Addenda
N-416	Alternative Rules for Hydrostatic Testing of Repair or Replacement of Class 2 Piping	1974 Edition	1989 Edition with the 1990 Addenda
N-416-1	Alternative Pressure Test Requirement for Welded Repairs or Installation of Replacement Items by Welding Class 1, 2, and 3	1974 Edition	1998 Edition
N-416-2	Alternative Pressure Test Requirement for Welded Repairs, Fabrication Welds for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding, Class 1, 2, and 3	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-416-3	Alternative Pressure Test Requirement for Welded or Brazed Repairs, Fabrication Welds or Brazed Joints for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding or Brazing, Classes 1, 2, and 3	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-416-4	Alternative Pressure Test Requirement for Welded or Brazed Repairs, Fabrication Welds or Brazed Joints for Replacement Parts and Piping Subassemblies, or Installation of Replacement Items by Welding or Brazing, Classes 1, 2, and 3	1977 Edition with the Summer 1978 Addenda	2001 Edition with the 2002 Addenda
N-419	Extent of VT-1 Examinations, Category B-G-1 of Table IWB-2500-1	1977 Edition with the Summer 1978 Addenda	1983 Edition with the Winter 1984 Addenda
N-424	Qualification of Visual Examination Personnel	1977 Edition with the Summer 1978 Addenda	1983 Edition
N-426	Extent of VT-1 Examinations, Category B-G-2 of Table IWB-2500-1	1977 Edition with the Summer 1978 Addenda	1983 Edition with the Winter 1984 Addenda
N-427	Code Cases in Inspection Plans	1971 Edition	1986 Edition
N-429	Alternate Rules for Ultrasonic Instrument Calibration	1980 Edition with the Winter 1980 Addenda	1983 Edition with the Winter 1983 Addenda
N-429-1	Alternative Rules for Ultrasonic Instrument Calibration	1980 Edition with the Winter 1980 Addenda	1986 Edition with the 1986 Addenda
N-432	Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temper Bead Technique	1971 Edition with the Summer 1973 Addenda	1989 Edition with the 1990 Addenda
N-432-1	Repair Welding Using Automatic or Machine Gas Tungsten-Arc Welding (GTAW) Temper Bead Technique	1971 Edition with the Summer 1973 Addenda	2007 Edition with the 2008 Addenda
N-435	Alternative Examination Requirements for Vessels With Wall Thickness 2 in. or Less	1974 Edition with the Summer 1975 Addenda	1986 Edition



Code Case No.	Title	Applicability	
		From	Up To and Including
N-435-1	Alternative Examination Requirements for Vessels With Wall Thickness 2 in. or Less	1974 Edition with the Summer 1975 Addenda	1995 Edition
N-436	Alternative Methods for Evaluation of Flaws in Austenitic Piping	1983 Edition	1986 Edition
N-436-1	Alternative Methods for Evaluation of Flaws in Austenitic Piping	1983 Edition	1986 Edition
N-437	Use of Digital Readout and Digital Measurement Devices for Performing Pressure Tests	1974 Edition	1986 Edition
N-444	Preparation of Inspection Plans	1974 Edition with the Summer 1975 Addenda	1986 Edition with the 1986 Addenda
N-445	Use of Later Edition of SNT-TC-1A for Qualification of Nondestructive Examination Personnel	1977 Edition with the Summer 1978 Addenda	1986 Edition
N-446	Recertification of Visual Examination Personnel	1977 Edition with the Summer 1978 Addenda	1986 Edition
N-448	Qualification of VT-2 and VT-3 Visual Examination Personnel	1977 Edition with the Summer 1978 Addenda	1986 Edition with the 1987 Addenda
N-449	Qualification of VT-4 Visual Examination Personnel	1977 Edition with the Summer 1978 Addenda	1983 Edition with the Winter 1983 Addenda
N-457	Qualification Specimen Notch Location for Ultrasonic Examination of Bolts and Studs	1983 Edition with the Winter 1983 Addenda	1992 Edition with the 1993 Addenda
N-458	Magnetic Particle Examination of Coated Materials	1980 Edition with the Winter 1981 Addenda	1995 Edition
N-458-1	Magnetic Particle Examination of Coated Materials	1980 Edition with the Winter 1981 Addenda	1995 Edition
N-460	Alternative Examination Coverage for Class 1 and Class 2 Welds	1974 Edition	2007 Edition
N-461	Alternative Rules for Piping Calibration Block Thickness	1974 Edition with the Summer 1975 Addenda	1995 Edition
N-461-1	Alternative Rules for Piping Calibration Block Thickness	1974 Edition with the Summer 1975 Addenda	1995 Edition
N-463	Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping That Exceed the Acceptance Standards of IWB-3514.2	1983 Edition with the Winter 1983 Addenda	1989 Edition with the 1989 Addenda
N-463-1	Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping That Exceed the Acceptance Standards of IWB-3514.2	1983 Edition with the Winter 1983 Addenda	1989 Edition with the 1989 Addenda
N-465	Alternative Rules for Pump Testing	1974 Edition with the Winter 1975 Addenda	1986 Edition with the 1987 Addenda
N-465-1	Alternative Rules for Pump Testing	1974 Edition with the 1975 Addenda	1995 Edition with the 1995 Addenda
N-471	Acoustic Emissions for Successive Inspections	1974 Edition	1998 Edition with the 1999 Addenda
N-472	Use of Digital Readout and Digital Measurement Devices for Performing Pump Vibration Testing	1974 Edition	1986 Edition with the 1987 Addenda
N-473	Alternate Rules for Valve Testing	1974 Edition with the Summer 1975 Addenda	1986 Edition with the 1987 Addenda
N-473-1	Alternative Rules for Valve Testing	1974 Edition with the 1975 Addenda	1995 Edition with the 1995 Addenda
N-478	Inservice Inspection for Class CC Concrete Components of Light-Water Cooled Power Plants	1974 Edition	1986 Edition with the 1987 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-479	Boiling Water Reactor (BWR) Main Steam Hydrostatic Test	1977 Edition with the Winter 1977 Addenda	1989 Edition with the 1989 Addenda
N-479-1	Boiling Water Reactor (BWR) Main Steam Hydrostatic Test	1977 Edition with the Winter 1977 Addenda	1989 Edition with the 1990 Addenda
N-480	Examination Requirements for Pipe Wall Thinning Due to Single Phase Erosion and Corrosion	1974 Edition	1992 Edition with the 1993 Addenda
N-481	Alternative Examination Requirements for Cast Austenitic Pump Casings	1977 Edition with the Summer 1978 Addenda	1998 Edition with the 1999 Addenda
N-485	Eddy Current Examination of Coated Ferritic Surfaces as an Alternative to Surface Examination	1980 Edition with the Winter 1981 Addenda	1989 Edition with the 1990 Addenda
N-485-1	Eddy Current Examination of Coated Ferritic Surfaces as an Alternative to Surface Examination	1980 Edition with the Winter 1981 Addenda	1995 Edition
N-486	Inservice Inspection, Repair, and Replacement Requirements for Class MC and Metallic Liners of Class CC Components	1974 Edition	1989 Edition
N-489	Alternative Rules for Level III NDE Qualification Examinations	1974 Edition with the Summer 1975 Addenda	1989 Edition with the 1989 Addenda
N-490	Alternative Vision Test Requirements for Nondestructive Examiners	1974 Edition with the Summer 1975 Addenda	1989 Edition with the 1990 Addenda
N-490-1	Alternative Vision Test Requirements for Nondestructive Examiners	1974 Edition with the Summer 1975 Addenda	1989 Edition with the 1990 Addenda
N-491	Alternative Rules for Examination of Class 1, 2, 3, and MC Component Supports of Light-Water Cooled Power Plants	1977 Edition with the Summer 1978 Addenda	1989 Edition with the 1989 Addenda
N-491-1	Alternative Rules for Examination of Class 1, 2, 3, and MC Component Supports of Light-Water Cooled Power Plants	1977 Edition with the Summer 1978 Addenda	1989 Edition with the 1989 Addenda
N-491-2	Alternative Rules for Examination of Class 1, 2, 3, and MC Component Supports of Light-Water Cooled Power Plants	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1996 Addenda
N-494	Pipe Specific Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping that Exceed the Acceptance Standards of IWB-3514.2	1974 Edition with the Winter 1975 Addenda	1995 Edition
N-494-1	Pipe Specific Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping that Exceed the Acceptance Standards of IWB-3514.2	1974 Edition with the Winter 1975 Addenda	1995 Edition
N-494-2	Pipe Specific Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping that Exceed the Acceptance Standards of IWB-3514.2	1974 Edition with the Winter 1975 Addenda	1995 Edition
N-494-3	Pipe Specific Evaluation Procedures and Acceptance Criteria for Flaws in Class 1 Ferritic Piping that Exceed the Acceptance Standards of IWB-3514.2 and in Class 1 Austenitic Piping that Exceed the Acceptance Standards of IWB-3514.3	1974 Edition with the Winter 1975 Addenda	1995 Edition
N-494-4	Pipe Specific Evaluation Procedures and Acceptance Criteria for Flaws in Piping that Exceed the Acceptance Standards	1983 Edition	2001 Edition
N-495	Hydrostatic Testing of Relief Valves	1977 Edition	1989 Edition with the 1990 Addenda
N-496	Helical-Coil Threaded Inserts	1977 Edition with the Summer 1978 Addenda	1989 Edition with the 1990 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-496-1	Helical-Coil Threaded Inserts	1977 Edition with the Summer 1978 Addenda	1995 Edition
N-496-2	Helical-Coil Threaded Inserts	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-498	Alternative Rules for 10-Year Hydrostatic Pressure Testing for Class 1 and 2 Systems	1974 Edition with the Summer 1975 Addenda	1992 Edition with the 1992 Addenda
N-498-1	Alternative Rules for 10-Year System Hydrostatic Testing for Class 1, 2, and 3 Systems	1974 Edition with the Summer 1975 Addenda	1998 Edition with the 2000 Addenda
N-498-2	Alternative Requirements for 10-Year System Hydrostatic Testing for Class 1, 2 and 3 Systems	1974 Edition with the Summer 1975 Addenda	1998 Edition with the 2000 Addenda
N-498-3	Alternative Requirements for 10-Year System Hydrostatic Testing for Class 1, 2 and 3 Systems	1974 Edition with the Summer 1975	1998 Edition with the 2000 Addenda
N-498-4	Alternative Requirements for 10-Year System Hydrostatic Testing for Class 1, 2 and 3 Systems	1974 Edition with the Summer 1975	1998 Edition with the 2000 Addenda
N-503	Limited Certification of Nondestructive Examination Personnel	1977 Edition with the Summer 1978 Addenda	1992 Edition
N-504	Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping	1977 Edition with the Summer 1978 Addenda	1986 Edition with the 1987 Addenda
N-504-1	Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping	1977 Edition with the Summer 1978 Addenda	1995 Edition
N-504-2	Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1995 Addenda
N-504-3	Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-504-4	Alternative Rules for Repair of Class 1, 2, and 3 Austenitic Stainless Steel Piping	1977 Edition with the Summer 1978 Addenda	2004 Edition with the 2006 Addenda
N-508	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing	1977 Edition	1989 Edition with the 1990 Addenda
N-508-1	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing	1977 Edition	1995 Edition with the 1995 Addenda
N-508-2	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing	1977 Edition	1998 Edition with the 2000 Addenda
N-508-3	Rotation of Serviced Snubbers and Pressure Relief Valves for the Purpose of Testing	1977 Edition with the Winter 1978 Addenda	2001 Edition with the 2003 Addenda
N-508-4	Rotation of Snubbers and Pressure Retaining Items for the Purpose of Testing or Preventive Maintenance	1989 Edition	2007 Edition with the 2008 Addenda
N-509	Alternative Rules for the Selection and Examination of Classes 1, 2, and 3 Integrally Welded Attachments	1977 Edition with the Summer 1978 Addenda	1995 Edition
N-512	Assessment of Reactor Vessels with Low Upper Shelf Charpy Impact Energy Levels	1986 Edition with the 1987 Addenda	1992 Edition with the 1992 Addenda
N-512-1	Assessment of Reactor Vessels with Low Upper Shelf Charpy Impact Energy Levels	1986 Edition with the 1987 Addenda	1995 Edition
N-513	Evaluation Criteria for Temporary Acceptance of Flaws in Class 3 Piping	1977 Edition with the Summer 1978 Addenda	2001 Edition
N-513-1	Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping	1977 Edition with the Summer 1978 Addenda	2001 Edition
N-513-2	Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping	1977 Edition with the Summer 1978 Addenda	2001 Edition with the 2003 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-513-3	Evaluation Criteria for Temporary Acceptance of Flaws in Moderate Energy Class 2 or 3 Piping	1983 Edition with the Winter 1985 Addenda	2007 Edition with the 2008 Addenda
N-514	Low Temperature Overpressure Protection	1986 Edition with the 1987 Addenda	1992 Edition with the 1992 Addenda
N-515	Class 1 Mechanical Joint- Pressure Tests	1980 Edition with the Winter 1980 Addenda	1989 Edition with the 1990 Addenda
N-516	Underwater Welding	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1995 Addenda
N-516-1	Underwater Welding	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1995 Addenda
N-516-2	Underwater Welding	1974 Edition with the Summer 1978 Addenda	1995 Edition with the 1996 Addenda
N-516-3	Underwater Welding	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-517	Quality Assurance Program Requirements for Owners	1977 Edition with the Summer 1978 Addenda	1995 Edition
N-517-1	Quality Assurance Program Requirements for Owners	1977 Edition with the Summer 1978 Addenda	2004 Edition with the 2006 Addenda
N-521	Alternative Rules for Deferral of Inspections of Nozzle-to-Vessel Welds, Inside Radius Sections and Nozzle-to-Safe End Welds of Pressurized Water Reactor (PWR) Vessel	1977 Edition	1995 Edition
N-522	Pressure Testing of Containment Penetration Piping	1974 Edition	1995 Edition with the 1996 Addenda
N-523	Mechanical Clamping Devices for Class 2 and 3 Piping	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1996 Addenda
N-523-1	Mechanical Clamping Devices for Class 2 and 3 Piping	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1996 Addenda
N-523-2	Mechanical Clamping Devices for Class 2 and 3 Piping	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1996 Addenda
N-524	Alternative Examination Requirements for Longitudinal Welds in Class 1 and 2 Piping	1974 Edition with the Summer 1975 Addenda	1995 Edition
N-526	Alternative Requirements for Successive Inspections of Class 1 and 2 Vessels	1974 Edition	2007 Edition with the 2008 Addenda
N-528-1	Purchase, Exchange, or Transfer of Material Between Nuclear Plant Sites	1977 Edition with the Summer 1978 Addenda	2004 Edition with the 2005 Addenda
N-532	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission as Required by IWA-4000 and IWA-6000	1974 Edition with the Summer 1975 Addenda	1998 Edition with the 2000 Addenda
N-532-1	Alternative Requirements to Repair and Replacement Documentation Requirements and Inservice Summary Report Preparation and Submission	1981 Edition with the Winter 1983 Addenda	1998 Edition with the 2000 Addenda
N-532-2	Alternative Requirements to Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission	1981 Edition with the Winter 1983 Addenda	2001 Edition with the 2002 Addenda
N-532-3	Alternative Requirements to Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission	1981 Edition with the Winter 1983 Addenda	2001 Edition with the 2003 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-532-4	Repair/Replacement Activity Documentation Requirements and Inservice Summary Report Preparation and Submission	1981 Edition with the Winter 1983 Addenda	2004 Edition with the 2005 Addenda
N-533	Alternative Requirements for VT-2 Visual Examination of Class 1 Insulated Pressure-Retaining Bolted Connections	1986 Edition	1998 Edition with the 2000 Addenda
N-533-1	Alternative Requirements for VT-2 Visual Examination of Class 1, 2, and 3 Insulated Pressure Retaining Bolted Connections	1989 Edition	1998 Edition with the 2000 Addenda
N-534	Alternative Requirements for Pneumatic Pressure Testing	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1997 Addenda
N-535	Alternative Requirements for Inservice Inspection Intervals	1977 Edition	1995 Edition with the 1995 Addenda
N-537	Location of Ultrasonic Depth-Sizing Flaws	1989 Edition with the 1989 Addenda	2001 Edition
N-538	Alternative Requirements for Length Sizing Performance Demonstrations in Accordance with Appendix VIII, Supplements 2, 3, 10, 11, and 12	1989 Edition with the 1989 Addenda	1995 Edition with the 1995 Addenda
N-541	Alternative Requirements for Performance Demonstration in Accordance with Appendix VIII, Supplements 4 and 6	1992 Edition with the 1993 Addenda	1995 Edition
N-542	Alternative Requirements for Nozzle Inside Radius Section Length Sizing Performance Demonstration	1989 Edition with the 1989 Addenda	1995 Edition
N-543	Alternative to Performing Periodic Calibration Checks	1977 Edition with the Summer 1978 Addenda	1989 Edition
N-544	Repair/Replacement of Small Items	1977 Edition with the Summer 1978 Addenda	1995 Edition
N-545	Alternative Requirements for Conduct of Performance Demonstration Detection Test of Reactor Vessel	1989 Edition	2004 Edition
N-546	Alternative Requirements for Qualification of VT-2 Examination Personnel	1977 Edition	1995 Edition with the 1997 Addenda
N-547	Alternative Examination Requirements for Pressure Retaining Bolting of Control Rod Drive (CRD) Housings	1980 Edition with the Winter 1980 Addenda	1995 Edition
N-552	Alternative Methods — Qualification for Nozzle Inside Radius Section from the Outside Surface	1989 Edition with the 1989 Addenda	2004 Edition
N-553	Inservice Eddy Current Surface Examination of Pressure Retaining Pipe Welds and Nozzle-to-Safe End Welds	1977 Edition	1995 Edition with the 1996 Addenda
N-553-1	Eddy Current Surface Examination	1977 Edition	1995 Edition with the 1996 Addenda
N-554	Alternative Requirements for Reconciliation of Replacement Items	1977 Edition	1995 Edition with the 1995 Addenda
N-554-1	Alternative Requirements for Reconciliation of Replacement Items	1977 Edition	1995 Edition with the 1996 Addenda
N-554-2	Alternative Requirements for Reconciliation of Replacement Items and Addition of New Systems	1977 Edition	1998 Edition
N-554-3	Alternative Requirements for Reconciliation of Replacement Items and Addition of New Systems	1977 Edition	2001 Edition with the 2002 Addenda
N-555	Use of Section II, V, and IX Code Cases	1977 Edition with the Summer 1978 Addenda	2001



Code Case No.	Title	Applicability	
		From	Up To and Including
N-556	Alternative Requirements for Verification of Acceptability of Replacements	1977 Edition	1992 Edition with the 1993 Addenda
N-557	In-Place Dry Annealing of a PWR Nuclear Reactor Vessel	1974 Edition with the Summer 1975 Addenda	1995 Edition
N-557-1	In-Place Dry Annealing of a PWR Nuclear Reactor Vessel	1974 Edition with the Summer 1975 Addenda	2007 Edition with the 2008 Addenda
N-560	Alternative Examination Requirements for Class 1, Category B-J Piping Welds	1974 Edition	2004 Edition
N-560-1	Alternative Examination Requirements for Class 1, Category B-J Piping Welds	1974 Edition	2004 Edition
N-560-2	Alternative Examination Requirements for Class 1, Category B-J Piping Welds	1977 Edition	2004 Edition
N-561	Alternative Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping	1977 Edition	2004 Edition
N-561-1	Alternative Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping	1977 Edition	2004 Edition with the 2005 Addenda
N-561-2	Alternative Requirements for Wall Thickness Restoration of Class 2 and High Energy Class 3 Carbon Steel Piping	1977 Edition	2007 Edition with the 2008 Addenda
N-562	Alternative Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping	1977 Edition	2004 Edition
N-562-1	Alternative Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping	1977 Edition	2004 Edition with the 2005 Addenda
N-562-2	Alternative Requirements for Wall Thickness Restoration of Class 3 Moderate Energy Carbon Steel Piping	1977 Edition	2007 Edition with the 2008 Addenda
N-563	Grading of Examinations, IWA-2320	1986 Edition with the 1988 Addenda	1992 Edition
N-566	Corrective Action for Leakage Identified at Bolted Connections	1983 Edition with the Winter 1984 Addenda	2004 Edition
N-566-1	Corrective Action for Leakage Identified at Bolted Connections	1983 Edition with the Winter 1984 Addenda	2004 Edition
N-566-2	Corrective Action for Leakage Identified at Bolted Connections	1983 Edition with the Winter 1984 Addenda	2004 Edition with the 2006 Addenda
N-567	Alternative Requirements for Class 1, 2, and 3 Replacement Components	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-567-1	Reconciliation Requirements for Class 1, 2, and 3 Replacement Component	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-568	Alternative Examination Requirements for Welded Attachments	1974 Edition with the Summer 1975 Addenda	1989 Edition with the 1990 Addenda
N-569	Alternative Rules for Repair by Electrochemical Deposition of Class 1 and 2 Steam Generator Tubing	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-569-1	Alternative Rules for Repair by Electrochemical Deposition of Class 1 and 2 Steam Generator Tubing	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-573	Transfer of Procedure Qualification Records Between Owners	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1996 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-574	NDE Personnel Recertification Frequency	1974 Edition with the Summer 1975 Addenda	1995 Edition with the 1996 Addenda
N-575	Alternative Examination Requirements for Full Penetration Nozzle-to-Vessel Welds in Reactor Vessels with Set-On Type Nozzles	1989 Edition	2007 Edition with the 2008 Addenda
N-576	Repair of Class 1 and 2 SB-163, UNS N06600 Steam Generator Tubing	1977 Edition with the Summer 1978 Addenda	1998 Edition with the 2000 Addenda
N-576-1	Repair of Class 1 and 2 SB-163, UNS N06600 Steam Generator Tubing	1977 Edition with the Summer 1978 Addenda	1998 Edition with the 2000 Addenda
N-577	Risk-Informed Requirements for Class 1, 2, and 3 Piping, Method A	1977 Edition	2004 Edition
N-577-1	Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method A	1977 Edition	2004 Edition
N-578	Risk-Informed Requirements for Class 1, 2, and 3 Piping, Method B	1977 Edition	2004 Edition
N-578-1	Risk-Informed Requirements for Class 1, 2, or 3 Piping, Method B	1977 Edition	2004 Edition
N-583	Annual Training Alternative	1986 Edition with the 1988 Addenda	1998 Edition
N-586	Alternative Additional Examination Requirements for Class 1, 2, and 3 Piping, Components, and Supports	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-586-1	Alternative Additional Examination Requirements for Class 1, 2, and 3 Piping, Components, and Supports	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-587	Alternative NDE Requirements for Repair/Replacement Activities	1977 Edition with the Summer 1978 Addenda	1995 Edition with the 1997 Addenda
N-588	Alternative to Reference Flaw Orientation of Appendix G for Circumferential Welds in Reactor Vessels	1986 Edition with the 1987 Addenda	1995 Edition with the 1997 Addenda
N-589	Class 3 Nonmetallic Cured-In-Place Piping	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-589-1	Class 3 Nonmetallic Cured-In-Place Piping	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-590	Alternative to the Requirements of Subsection IWE, Requirements for Class MC and Metallic Liners of Class CC Components of Light-Water Cooled Plants	1992 Edition	1995 Edition with the 1997 Addenda
N-591	Alternative to the Requirements of Subsection IWL, Requirements for Class CC Concrete Components of Light-Water Cooled Plants	1992 Edition	1995 Edition with the 1996 Addenda
N-592	ASNT Central Certification Program	1974 Edition	1998 Edition
N-593	Alternative Examination Requirements for Steam Generator Nozzle-to-Vessel Welds	1974 Edition	2004 Edition
N-593-1	Examination Requirements for Steam Generator Nozzle-to-Vessel Welds	1974 Edition	2007 Edition with the 2008 Addenda
N-597	Requirements for Analytical Evaluation of Pipe Wall Thinning	1974 Edition	2004 Edition
N-597-1	Requirements for Analytical Evaluation of Pipe Wall Thinning	1974 Edition	2004 Edition
N-597-2	Requirements for Analytical Evaluation of Pipe Wall Thinning	1974 Edition	2007 Edition with the 2008 Addenda
N-598	Alternative Requirements to Required Percentages of Examinations	1977 Edition	1995 Edition with the 1997 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-599	Alternatives to Qualification of Nondestructive Examination Personnel for Inservice Inspection of Metal (Class MC) and Concrete (Class CC) Containments	1992 Edition with the 1992 Addenda	1995 Edition with the 1997 Addenda
N-600	Transfer of Welder, Welding Operator, Brazer, and Brazing Operator Qualifications Between Owners	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-601	Extent and Frequency of VT-3 Visual Examination for Inservice Inspection of Metal Containments	1989 Edition	1995 Edition with the 1997 Addenda
N-603	Alternative to the Requirements of IWL-2421, Sites With Two Plants	1989 Edition with the 1991 Addenda	1995 Edition with the 1996 Addenda
N-604	Alternative to Bolt Torque or Tension Test Requirements of Table IWE-2500-1, Category E-G, Item E8.20	1989 Edition	1995 Edition with the 1997 Addenda
N-605	Alternative to the Requirements of IWE-2500(c) for Augmented Examination of Surface Areas	1989 Edition	1995 Edition with the 1997 Addenda
N-606	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-606-1	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique for BWR CRD Housing/Stub Tube Repairs	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-609	Alternative Requirements to Stress-Based Selection Criteria for Category B-J Welds	1977 Edition	2004 Edition with the 2005 Addenda
N-613	Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Vessel-to-Nozzle Welds, Fig. IWB-2500-7(a), (b), and (c)	1989 Edition with the 1989 Addenda	2004 Edition
N-613-1	Ultrasonic Examination of Full Penetration Nozzles in Vessels, Examination Category B-D, Item No's. B3.10 and B3.90, Reactor Nozzle-to-Vessel Welds, Figs. IWB-2500-7(a), (b), and (c)	1989 Edition with the 1989 Addenda	2007 Edition with the 2008 Addenda
N-615	Ultrasonic Examination as a Surface Examination Method for Category B-F and B-J Piping Welds	1977 Edition with the Summer 1978 Addenda	1998 Edition with the 2000 Addenda
N-616	Alternative Requirements for VT-2 Visual Examination of Classes 1, 2, and 3 Insulated Pressure-Retaining Bolted Connections	1983 Edition with the Winter 1984 Addenda	2001 Edition with the 2002 Addenda
N-617	Alternative Examination Distribution Requirements for Table IWC-2500-1 Examination Category C-G, Pressure Retaining Welds in Pumps and Valves	1977 Edition with the Summer 1978 Addenda	1998 Edition with the 1999 Addenda
N-618	Use of a Reactor Pressure Vessel as a Transportation Containment System	1983 Edition	2007 Edition with the 2008 Addenda
N-619	Alternative Requirements for Nozzle Inner Radius Inspections for Class 1 Pressurizer and Steam Generator Nozzles	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-622	Ultrasonic Examination of RPV and Piping, Bolts, and Studs	1989 Edition with the 1989 Addenda	2001 Edition
N-623	Deferral of Inspections of Shell-to-Flange and Head-to-Flange Welds of a Reactor Vessel	1977 Edition with the Summer 1978 Addenda	1998 Edition
N-624	Successive Inspections	1977 Edition with the Summer 1978 Addenda	2007 Edition



Code Case No.	Title	Applicability	
		From	Up To and Including
N-627	VT-1 Visual Examination in Lieu of Surface Examination for RPV Closure Nuts	1977 Edition with the 1978 Addenda	1989 Edition
N-629	Use of Fracture Toughness Test Data to Establish Reference Temperature for Pressure Retaining Materials	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-630	Alternatives to VT-1C and VT-3C Visual Examination for Inservice Inspection of Concrete and VT-1 Visual Examination for Inservice Inspection of Anchorage Hardware and Surrounding Concrete for Concrete Containments	1992 Edition with the 1992 Addenda	1995 Edition with the 1996 Addenda
N-638	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-638-1	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-638-2	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1980 Edition with the Winter 1981 Addenda	2004 Edition
N-638-3	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1980 Edition with the Winter 1981 Addenda	2004 Edition
N-638-4	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1980 Edition with the Winter 1981 Addenda	2004 Edition
N-638-5	Similar and Dissimilar Metal Welding Using Ambient Temperature Machine GTAW Temper Bead Technique	1980 Edition with the Winter 1981 Addenda	2004 Edition
N-639	Alternative Calibration Block Material	1986 Edition with the 1987 Addenda	2007 Edition with the 2008 Addenda
N-640	Alternative Reference Fracture Toughness for Development of P-T Limit Curves	1992 Edition	1998 Edition
N-641	Alternative Pressure-Temperature Relationship and Low Temperature Overpressure Protection System Requirements	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-643	Fatigue Crack Growth Rate Curves for Ferritic Steels in PWR Water Environment	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-643-1	Fatigue Crack Growth Rate Curves for Ferritic Steels in PWR Water Environment	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-643-2	Fatigue Crack Growth Rate Curves for Ferritic Steels in PWR Water Environment	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-647	Alternative to Augmented Examination Requirements of IWE-2500	1977 Edition with the Summer 1978 Addenda	1998 Edition with the 2000 Addenda
N-648	Alternative Requirements for Inner Radius Examinations of Class 1 Reactor Vessel Nozzles	1977 Edition with the Summer 1978 Addenda	2004 Edition
N-648-1	Alternative Requirements for Inner Radius Examinations of Class 1 Reactor Vessel Nozzles	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda
N-649	Alternative Requirements for IWE-5240 Visual Examination	1989 Edition	1998 Edition with the 2000 Addenda
N-651	Ferritic and Dissimilar Metal Welding Using SMAW Temper Bead Technique Without Removing the Weld Bead Crown of the First Layer	1977 Edition with the Summer 1978 Addenda	2007 Edition with the 2008 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-652	Alternative Requirements to Categories B-G-1, B-G-2, and C-D Bolting Examination Methods and Selection Criteria	1977 Edition	2001 Edition
N-652-1	Alternative Requirements to Categories B-G-1, B-G-2, and C-D Bolting Examination Methods and Selection Criteria	1977 Edition	2001 Edition with the 2003 Addenda
N-653	Qualification Requirements for Full Structural Overlaid Wrought Austenitic Piping Welds	1989 Edition with the 1989 Addenda	2004 Edition
N-654	Acceptance Criteria for Flaws in Ferritic Steel Components 4 in. and Greater in Thickness	1974 Edition	2007 Edition with the 2008 Addenda
N-658	Qualification Requirements for Ultrasonic Examination of Wrought Austenitic Piping Welds	1989 Edition with the 1989 Addenda	2001 Edition
N-660	Risk-Informed Safety Classification for Use in Risk-Informed Repair/Replacement Activities	1980 Edition with the Winter 1981 Addenda	2007 Edition with the 2008 Addenda
N-661	Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service	1977 Edition	2004 Edition with the 2005 Addenda
N-661-1	Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service	1977 Edition	2004 Edition with the 2005 Addenda
N-661-2	Alternative Requirements for Wall Thickness Restoration of Classes 2 and 3 Carbon Steel Piping for Raw Water Service	1977 Edition	2007 Edition with the 2008 Addenda
N-662	Alternative Repair/Replacement Requirements for Items Classified in Accordance With Risk-Informed Processes	1980 Edition with the Winter 1981 Addenda	2001 Edition with the 2002 Addenda
N-663	Alternative Requirements for Classes 1 and 2 Surface Examinations	1986 Edition	2007 Edition with the 2008 Addenda
N-664	Performance Demonstration Requirements for Examination of Unclad Reactor Pressure Vessel Welds, Excluding Flange Welds	1989 Edition with the 1989 Addenda	2001 Edition with the 2002 Addenda
N-665	Alternative Requirements for Angle Beam Measurements Using Refracted Longitudinal Wave Search Units	1983 Edition with the Winter 1985 Addenda	2001 Edition with the 2002 Addenda
N-666	Weld Overlay of Class 1, 2, and 3 Socket Welded Connections	1980 Edition with the Winter 1981 Addenda	2004 Edition
N-683	Method for Determining Maximum Allowable False Calls When Performing Single-Sided Access Performance Demonstration in Accordance With, Appendix VIII, Supplements 4 and 6	1989 Edition with the 1989 Addenda	2001 Edition with the 2002 Addenda
N-685	Lighting Requirements for Surface Examination	1998 Edition	2001 Edition with the 2003 Addenda
N-686	Alternative Requirements for Visual Examinations, VT-1, VT-2, and VT-3	1989 Edition with the 1990 Addenda	1998 Edition with the 2000 Addenda
N-686-1	Alternative Requirements for Visual Examinations, VT-1, VT-2, and VT-3	1989 Edition with the 1990 Addenda	2004 Edition
N-691	Application of Risk-Informed Insights to Increase the Inspection Interval for Pressurized Water Reactor Vessels	1986 Edition	2004 Edition with the 2006 Addenda
N-694	Evaluation Procedure and Acceptance Criteria for PWR Reactor Vessel Upper Head Penetration Nozzles	1983 Edition	2001 Edition with the 2003 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-694-1	Evaluation Procedure and Acceptance Criteria for PWR Reactor Vessel Head Penetration Nozzles	1983 Edition	2001 Edition with the 2003 Addenda
N-695	Qualification Requirements for Dissimilar Metal Piping Welds	1989 Edition with the 1989 Addenda	2001 Edition with the 2003 Addenda
N-696	Qualification Requirements for Appendix VIII Piping Examinations Conducted From the Inside Surface	1989 Edition with the 1989 Addenda	2001 Edition with the 2003 Addenda
N-697	Pressurized Water Reactor (PWR) Examination and Alternative Examination Requirements for Pressure Retaining Welds in Control Rod Drive and Instrument Nozzle Housings	1977 Edition	2001 Edition with the 2003 Addenda
N-700	Alternative Rules for Selection of Classes 1, 2, and 3 Vessel Welded Attachments for Examination	1995 Edition with the 1996 Addenda	2001 Edition with the 2003 Addenda
N-702	Alternative Requirements for Boiling Water Reactor (BWR) Nozzle Inner Radius and Nozzle-to-Shell Welds	1986 Edition	2007 Edition with the 2008 Addenda
N-705	Evaluation Criteria for Temporary Acceptance of Degradation in Moderate Energy Class 2 or 3 Vessels and Tanks	1983 Edition with the Winter 1985 Addenda	2007 Edition with the 2008 Addenda
N-706	Alternative Examination Requirements to Table IWB-2500-1 and Table IWC-2500-1 for PWR Stainless Steel Residual and Regenerative Heat Exchangers	1977 Edition	2004 Edition with the 2005 Addenda
N-706-1	Alternative Examination Requirements to Table IWB-2500-1 and Table IWC-2500-1 for PWR Stainless Steel Residual and Regenerative Heat Exchangers	1977 Edition	2007 Edition with the 2008 Addenda
N-711	Alternative Examination Coverage Requirements for Examination Category B-F, B-J, C-F-1, C-F-2, and R-A Piping Welds	1989 Edition	2007 Edition with the 2008 Addenda
N-712	Class 1 Socket Weld Examinations	1986 Edition	2007 Edition with the 2008 Addenda
N-713	Ultrasonic Examination in Lieu of Radiography	1986 Edition	2007 Edition with the 2008 Addenda
N-716	Alternative Piping Classification and Examination Requirements	1989 Edition	2004 Edition with the 2006 Addenda
N-722	Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials	1980 Edition	2007 Edition with the 2008 Addenda
N-722-1	Additional Examinations for PWR Pressure Retaining Welds in Class 1 Components Fabricated With Alloy 600/82/182 Materials	1980 Edition	2007 Edition with the 2008 Addenda
N-729	Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds	1980 Edition	2004 Edition
N-729-1	Alternative Examination Requirements for PWR Reactor Vessel Upper Heads With Nozzles Having Pressure-Retaining Partial-Penetration Welds	1980 Edition	2004 Edition
N-730	Roll Expansion of Class 1 Control Rod Drive Bottom Head Penetrations in BWRs	1989 Edition	2007 Edition with the 2008 Addenda
N-731	Alternative Class 1 System Leakage Test Pressure Requirements	1989 Edition	2007 Edition with the 2008 Addenda



Code Case No.	Title	Applicability	
		From	Up To and Including
N-733	Mitigation of Flaws in NPS 2 (DN 50) and Smaller Nozzles and Nozzle Partial Penetration Welds in Vessels and Piping by Use of a Mechanical Connection Modification	1983 Edition	2004 Edition with the 2006 Addenda
N-735	Successive Inspections of Class 1 and 2 Piping Welds	1995 Edition with the 1996 Addenda	2007 Edition with the 2008 Addenda
N-739	Alternative Qualification Requirements for Personnel Performing Class CC Concrete and Post-tensioning System Visual Examinations	1992 Edition with the 1992 Addenda	2004 Edition with the 2006 Addenda
N-739-1	Alternative Qualification Requirements for Personnel Performing Class CC Concrete and Post-tensioning System Visual Examinations	1992 Edition with the 1992 Addenda	2004 Edition with the 2006 Addenda
N-740	Dissimilar Metal Weld Overlay for Repair of Class 1, 2, and 3 Items	1980 Edition with Winter 1981 Addenda	2004 Edition with the 2006 Addenda
N-740-1	Dissimilar Metal Weld Overlay for Repair or Mitigation of Class 1, 2, and 3 Items	1980 Edition with Winter 1981 Addenda	2004 Edition with the 2006 Addenda
N-740-2	Full Structural Dissimilar Metal Weld Overlay for Repair or Mitigation of Class 1, 2, and 3 Items	1986 Edition with the 1988 Addenda	2007 Edition with the 2008 Addenda
N-747	Reactor Vessel Head-to-Flange Weld Examination	1989 Edition	2007 Edition with the 2008 Addenda
N-751	Pressure Testing of Containment Penetration Piping	1989 Edition	2004 Edition with the 2006 Addenda
N-753	Vision Tests	1986 Edition with the 1988 Addenda	2004 Edition with the 2006 Addenda
N-755	Use of Polyethylene (PE) Plastic Pipe	1995 Edition with the 1995 Addenda	2007 Edition with the 2008 Addenda
N-762	Temper Bead Procedure Qualification Requirements for Repair/Replacement Activities Without Postweld Heat Treatment	1995 Edition with the 1995 Addenda	2007 Edition with the 2008 Addenda
N-765	Alternative to Inspection Interval Scheduling Requirements of IWA-2430	1989 Edition	2007 Edition with the 2008 Addenda
N-769	Roll Expansion of Class 1 In-Core Housing Bottom Head Penetrations in BWRs	1989 Edition	2007 Edition with the 2008 Addenda
N-770	Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities	1989 Edition	2007 Edition with the 2008 Addenda
N-770-1	Alternative Examination Requirements and Acceptance Standards for Class 1 PWR Piping and Vessel Nozzle Butt Welds Fabricated With UNS N06082 or UNS W86182 Weld Filler Material With or Without Application of Listed Mitigation Activities	1989 Edition	2007 Edition with the 2008 Addenda
N-773	Alternative Qualification Criteria for Eddy Current Examinations of Piping Inside Surfaces	1995 Edition with the 1996 Addenda	2007 Edition with the 2008 Addenda
N-778	Alternative Requirements for Preparation and Submittal of Plans, Schedules, and Preservice and Inservice Inspection Summary Reports	1989 Edition ^a	2007 Edition with the 2009 Addenda

NOTES:

- (1) Applies to the 1974 Edition of Section V.
- (2) Applies to the 1974 Edition with the Winter 1976 Addenda of Section V.
- (3) Applies to the 1980 Edition of Section V.



Approval Date: February 12, 2008

*Code Cases will remain available for use until annulled
by the applicable Standards Committee.*

**Case N-4-13
Special Type 403 Modified Forgings or Bars,
Class 1 and CS
Section III, Division 1**

Inquiry: May Special Type 403 Modified forgings or bars be used in the construction of Section III, Class 1 and CS components in accordance with Section III, Division 1, and what special requirements apply to this material?

Reply: It is the opinion of the Committee that Special Type 403 Modified forgings or bars may be used for Section III Class 1 and CS components, and the following specified special requirements apply in addition to the applicable requirements specified in Section III.

Steel forgings or bars (AISI Type 403 Modified) conforming to the following chemical analysis, having specified minimum mechanical properties shown below, and complying with the specified additional requirements may be used in the construction.

(a) *Chemistry*
(AISI Type 403 Modified)

	Percent
Carbon	0.06 to 0.13
Manganese	0.25 to 0.80
Phosphorus, max.	0.03
Sulfur, max.	0.03
Chromium	11.50 to 13.00
Nickel, max.	0.50
Silicon, max.	0.50

(b) Mechanical properties in the annealed condition as received shall conform to the following requirements:

	ksi (MPa)
Tensile strength, min.	70 (480)
Yield strength, min.	40 (275)
Elongation in 2 in., min.	22%
Reduction of area, min.	50%

(c) Condition 1 material shall be given an austenitizing heat treatment, followed by air cooling or quenching in liquid media, salt bath, or oil and air cooled to room temperature, and then tempered 1125°F (605°C) minimum for

4 hr. Mechanical properties for Condition 1 material shall conform to the following requirements.

	Condition 1, ksi (MPa)
Tensile strength, min.	110 (760)
Yield strength, min.	90 (620)
Elongation in 2 in., min.	16%
Reduction in area, min.	50%
Brinell Hardness	226 to 277 or equivalent

Condition 2 material shall be given an austenitizing heat treatment, followed by air cooling or quenching in liquid media, salt bath, or oil and air cooled to room temperature, and then tempered at 1250°F (675°C) minimum. Mechanical properties for Condition 2 material shall conform to the following requirements.

	Condition 2, ksi (MPa)
Tensile strength, min.	100 (690)
Yield strength, min.	80 (550)
Elongation in 2 in., min.	15%
Reduction in area, min.	45%

Toughness requirements shall be per NB-2300 for Class 1, and NG-2300 for Class CS, except that the drop-weight tests are not required. The acceptance standards of NB-2332 or NG-2331 and NG-2332 shall apply.

(d) The material shall conform to all other requirements of SA-182 Grade F6a for forgings, and SA-276 Type 403 for bars.

(e) The maximum operating temperature shall not exceed 700°F (370°C).

(f) Design stress intensity, yield, and tensile strength values as shown in Tables 1 and 2 for the heat-treated condition may be used when the material has enhanced properties due to the special heat treatment described in (c) above.

(g) Where the method of fabrication requires welding after heat treatment, it shall be done by applying austenitic stainless steel or nickel alloy weld deposits prior to heat treatment and only on regions designed to the design stress intensity values in Table 1 for annealed properties. The minimum thickness of this weld shall be $\frac{3}{16}$ in. (5 mm) and the maximum $\frac{1}{2}$ in. (13 mm). Such weld deposits shall be liquid penetrant examined. Attachments to these weld deposits may be made austenitic stainless or nickel alloy welds subsequent to heat treatment, and the thickness shall

The Committee's function is to establish rules of safety, relating only to pressure integrity, governing the construction of boilers, pressure vessels, transport tanks and nuclear components, and inservice inspection for pressure integrity of nuclear components and transport tanks, and to interpret these rules when questions arise regarding their intent. This Code does not address other safety issues relating to the construction of boilers, pressure vessels, transport tanks and nuclear components, and the inservice inspection of nuclear components and transport tanks. The user of the Code should refer to other pertinent codes, standards, laws, regulations or other relevant documents.

