ASME BPVC.SSC.III.II.V.IX.XIII-2023



Summary of Significant Changes in the

2023 ASME Boiler and Pressure Vessel Code

Section III
Section II
Section V
Section IX
Section XIII

ASME
SETTING THE STANDARD

ASME BPVC.SSC.III.II.V.IX.XIII-2023

Summary of Significant Changes in the 2023 ASME Boiler and Pressure Vessel Code

Sections III, II, V, IX, and XIII

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CONTENTS

List of Sections in the ASME Boiler and Pressure Vessel Code iv

Foreword v

Acknowledgments vi

SECTION III 1
Introduction 1
Subsection NCA 3
Appendices 4
Subsection NB 6
Subsection NCD 7
Subsection NE 8
Subsection NF 9
Subsection NG 10
Division 2 11
Division 3 12
Division 4 13
Division 5 14
SECTION II 15
Introduction 15
Part A 16
Part B 24
Part C 26
Part D Customary and Metric 29
SECTION V 33
Introduction 33
Significant Changes 34
SECTION IX 38
Introduction 38
Significant Changes 41
SECTION XIII 42
Introduction 42
Significant Changes 43

LIST OF SECTIONS
IN THE ASME BOILER AND PRESSURE VESSEL CODE

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
- Appendices
- Division 1
  - Subsection NB — Class 1 Components
  - Subsection NCD — Class 2 and Class 3 Components
  - Subsection NE — Class MC Components
  - Subsection NF — Supports
  - Subsection NG — Core Support Structures
- Division 2 — Code for Concrete Containments
- Division 3 — Containment Systems for Transportation and Storage of Spent Nuclear Fuel and High-Level Radioactive Material
- Division 4 — Fusion Energy Devices
- Division 5 — High Temperature Reactors

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, Brazing, and Fusing Qualifications

X Fiber-Reinforced Plastic Pressure Vessels

XI Rules for Inservice Inspection of Nuclear Reactor Facility Components
- Division 1 — Rules for Inspection and Testing of Components of Light-Water-Cooled Plants
- Division 2 — Requirements for Reliability and Integrity Management (RIM) Programs for Nuclear Reactor Facilities

XII Rules for Construction and Continued Service of Transport Tanks

XIII Rules for Overpressure Protection

FOREWORD

This book is a companion to the 2023 ASME Boiler and Pressure Vessel Code (BPVC). It explains only significant changes to Code requirements that will be published in the 2023 Edition. It covers the following ASME BPVC Sections:

- Section III, Divisions 1, 2, 3, 4, and 5
- Section II, Parts A, B, C, and D
- Section V
- Section IX
- Section XIII

For each of the above Sections, an Introduction describes the historical background, scope of coverage, and commercial application of that Section. The list of changes follows the Introduction. The "Explanation" for each change provides the reason for the action and the value to the Code user. The sequence of the changes follows the order of the Code requirements.

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ASME Press's *Online Companion Guide to the ASME Boiler and Pressure Vessel Codes: Criteria and Commentary on Select Aspects of the Boiler & Pressure Vessel and Piping Codes* (January 2020) provided source material for the Introduction preceding each list of changes. The complete Guide is available in the ASME Digital Collection at https://asmedigitalcollection.asme.org/ebooks/pages/onlinecompanionguide.

ASME gratefully acknowledges the members of the following volunteer committees, who are responsible for development of the ASME Boiler and Pressure Vessel Code Sections noted in this book:
- BPV Committee on Construction of Nuclear Facility Components (III)
- BPV Committee on Materials (II)
- BPV Committee on Nondestructive Examination (V)
- BPV Committee on Welding, Brazing, and Fusing (IX)
- BPV Committee on Overpressure Protection (XIII)

SECTION III

Introduction

Section III consists of five major Divisions that cover nuclear components, concrete containments, transportation and storage containment systems, fusion energy devices, and high temperature reactors. These Divisions provide requirements that address the material, design, fabrication, installation, examination, testing, overpressure protection, inspection, stamping, and certification for the construction of nuclear facility components, ensuring pressure boundary integrity and structural integrity.

Subsection NCA provides the general requirements of Section III, Division 1 and Division 2, which are applicable to all Classes of construction, including steel vessels, piping, pumps, and valves, as well as concrete structures. It identifies how to classify components and describes how the jurisdictional boundaries of Section III define what is within and outside the scope of the Code. The requirements for Design Basis, Design and Construction Specifications, and Design Reports are included. This Subsection also addresses the responsibilities and Quality Assurance Program requirements of the different entities involved in constructing a nuclear power plant, from the manufacturer of materials to the Owner. Requirements for ASME accreditation, application of the ASME Certification Mark, and use of Code Data Reports are also included.

Section III Appendices are designated as either mandatory or nonmandatory. Mandatory Appendices are required by Section III rules for construction. Nonmandatory Appendices provide additional information or guidance when using Section III.

Division 1, Subsection NB contains rules for the material, design, fabrication, examination, testing, overpressure relief, marking, stamping, and preparation of reports by the Certificate Holder for items that conform to the requirements for Class 1 construction. The rules of Subsection NB cover the requirements for strength and pressure integrity of items, the failure of which would violate the pressure-retaining boundary. The rules cover initial construction requirements, but not deterioration that may occur in service as a result of corrosion, radiation effects, or instability of materials.

Division 1, Subsection NCD contains rules for the material, design, fabrication, examination, testing, overpressure relief, marking, stamping, and preparation of reports by the Certificate Holder for items that are intended to conform to the requirements for Class 2 and Class 3 construction. The rules of Subsection NCD cover the strength and pressure integrity of items, the failure of which would violate the pressure-retaining boundary. The rules cover load stresses but not deterioration that may occur in service as a result of corrosion, radiation effects, or instability of materials. Subsection NCD does not contain rules that cover all details of construction of Class 2 and Class 3 vessels and storage tanks.

Division 1, Subsection NE contains rules for the material, design, fabrication, examination, inspection, testing, and preparation of reports for metal containment vessels. Class MC containment vessels are constructed in accordance with the rules of this Subsection, except as provided in NCA-2134(c). Only containment vessels and their appurtenances are classified as Class MC. Piping, pumps, and valves that are part of the containment system (NE-1130) or that penetrate or are attached to the containment vessel are classified as Class 1 or Class 2 by the Design Specification.

Division 1, Subsection NF contains rules for the material, design, fabrication, examination, installation, and preparation of certification documents (Certificate of Compliance and NS-1 Certificate of Conformance) for component supports and piping conforming to the requirements for Class 1, 2, 3, and MC construction as required by Subsections NB, NCD, and NE. Requirements covered in Subsection NF do not include deterioration that may occur in service as a result of corrosion, erosion, radiation effects, or metallurgical instability of materials (NCA-1130).

Division 1, Subsection NG contains rules for materials, design, fabrication, examination, and preparation of reports required in the manufacture and installation of core support structures.