DEPARTMENT OF HOMELAND SECURITY

Coast Guard

46 CFR Parts 50, 52, 53, 54, 56, 57, 58, 59, 61, 62, 63, and 64

[Docket No. USCG–2020–0634]

RIN 1625–AC72

Updates to Marine Engineering Standards

AGENCY: Coast Guard, DHS.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Coast Guard proposes to incorporate by reference updated marine engineering standards and eliminate outdated or unnecessarily prescriptive regulations in Title 46 of the Code of Federal Regulations (CFR) subchapter F. This proposed rule is part of a continuing effort for regulatory reform that increases compliance options for the regulated public while providing a cost savings to the regulated public and the U.S. government.

DATES: Comments and related material must be received by the Coast Guard on or before December 20, 2021.

ADDRESSES: You may submit comments identified by docket number USCG–2020–0634 using the Federal eRulemaking Portal at *https://www.regulations.gov.* See the ''Public Participation and Request for Comments'' portion of the **SUPPLEMENTARY INFORMATION** section for further instructions on submitting comments.

FOR FURTHER INFORMATION CONTACT: For further information about this document call or email Thane Gilman, Systems Engineering Division (CG–ENG–3), 2703 Martin Luther King Jr. Ave. SE, Washington, DC 20593. Phone (202) 372–1383, Email: *thane.gilman@uscg.mil.*

SUPPLEMENTARY INFORMATION:

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I. Public Participation and Request for Comments

The Coast Guard views public participation as essential to effective rulemaking, and will consider all comments and material received during the comment period. Your comment can help shape the outcome of this rulemaking. If you submit a comment, please include the docket number for this rulemaking, indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation.

We encourage you to submit comments through the Federal eRulemaking Portal at *www.regulations.gov.* If you cannot submit your material by using *www.regulations.gov,* call or email the person in the **FOR FURTHER INFORMATION CONTACT** section of this proposed rule for alternate instructions. Documents mentioned in this proposed rule, and all public comments, will be available in our online docket at *www.regulations.gov,* and can be viewed by following that website's instructions. Additionally, if you visit the online docket and sign up for email alerts, you will be notified when comments are posted or if a final rule is published.

We accept anonymous comments. All comments received will be posted without change to *https://www.regulations.gov* and will include any personal information you have provided. For more about privacy and submissions in response to this document, see the Department of Homeland Security's (DHS) eRulemaking System of Records notice (85 FR 14226, March 11, 2020).

We do not plan to hold a public meeting but we will consider doing so if public comments indicate that a meeting would be helpful. We would issue a separate **Federal Register** notice to announce the date, time, and location of such a meeting.

II. Abbreviations

ABYC American Boat and Yacht Council
ABS American Bureau of Shipping
ANSI American National Standards Institute
API American Petroleum Institute
ASME American Society of Mechanical Engineers
ASTM ASTM International
BLS Bureau of Labor Statistics
BPVC Boiler and Pressure Vessel Code
CFR Code of Federal Regulations
CG–5PS United States Coast Guard Commercial Regulations and Standards Directorate
CGA Compressed Gas Association
DHS Department of Homeland Security
FR Federal Register
GPO Government Publishing Office
GS General Service
IBR Incorporation by Reference
IMO International Maritime Organization
ISO International Organization for Standardization
MISLE Marine Information for Safety and Law Enforcement
MSC Marine Safety Center
MSS Manufacturers Standardization Society of the Valve and Fitting Industry, Inc.
NAICS North American Industry Classification System
NFPA National Fire Protection Association
NPRM Notice of Proposed Rulemaking
OFR Office of the Federal Register
OMB Office of Management and Budget
OPM Office of Personnel Management
PV Pressure Vessel
RA Regulatory Analysis
RFA The Regulatory Flexibility Act of 1980
§ Section
SAE SAE International
SBA Small Business Administration
SOLAS International Convention for Safety of Life at Sea
UL Underwriters Laboratories
U.S.C. United States Code

III. Background, Basis, and Purpose

This notice of proposed rulemaking (NPRM) incorporates by reference updated marine engineering standards in Title 46 of the Code of Federal Regulations (CFR) subchapter F, including standards for boilers, pressure vessels, auxiliary machinery, piping, valves, and fittings, for various types of vessels; adds a limited number of alternative standards; and eliminates outdated or unnecessarily prescriptive regulations.

The Office of Management and Budget (OMB) directs, via OMB Circular A–119, that federal agencies use industry-based voluntary consensus standards in lieu of government-unique requirements where appropriate. The Coast Guard actively participates in the development of industry standards of safety for marine equipment at the International Maritime Organization (IMO), the International Organization for Standardization (ISO), ASTM International (ASTM), American Society of Mechanical Engineers (ASME), and other standards-setting bodies that belong to the American National Standards Institute (ANSI). Recently published editions of these standards provide necessary updates to materials, testing practices, and technologies, enhancing safety and compliance.

The United States Coast Guard has statutory authority to promulgate regulations under Title 43, United States Code (U.S.C.), section 1333(d); and Title 46 U.S.C. 3306 and 3703, and the Department of Homeland Security Delegation No. 0170.1, which delegates authority under these statutes to the Commandant of the Coast Guard. 43 U.S.C. 1333(d) grants the Secretary the authority to promulgate and enforce regulations with respect to lights and other warning devices, safety equipment, and other matters relating to the promotion of safety of life and property on artificial islands, installations, and other devices. 46 U.S.C. 3306(a)(1) authorizes the Secretary to prescribe regulations for the design, construction, alteration, repair, and operation of vessels subject to inspection, including equipment, appliances, propulsion machinery, auxiliary machinery, boilers, unfired pressure vessels, piping, and electric installations. Additionally, 46 U.S.C. 3703(a) grants the Secretary authority to regulate tank vessels regarding the construction, alteration, repair, maintenance, operation, and equipping of vessels that may be necessary for increased protection against hazards to life and property, for navigation and vessel safety, and for enhanced protection of the marine environment.

IV. Discussion of Proposed Rule

A. General Discussion

In general, the proposed rule would make the following changes:

1. Corrections—we would amend several sections to correct inadvertent errors or deletions. We would also remove material that is obsolete or superfluous to an efficient and effective marine safety regulatory scheme, and update contact information for Coast Guard offices and standards organizations.

2. Stylistic Revisions—we would revise the language of some sections, primarily for greater clarity. This includes revising sentences containing the word ''shall'' to use ''must'' or another grammatically equivalent word or phrase in accordance with plain language guidelines, and standardizing terms that were variously presented as compound words, hyphenated constructions, or multi-word phrases using the format preferred by the Government Publishing Office (GPO).

3. Updated cross references—we would update cross references to reflect the relocation, within the CFR, of pertinent provisions. We would also standardize designations for tables, figures, notes, and formulas using the format preferred by the Office of the Federal Register (OFR).

4. Updated industry standards—we would update cross-references to industry standards by adding new references, replacing references to superseded standards or editions, and by conforming text accordingly. We incorporate these updated standards because they reflect the latest available technologies, practices, and procedures that are recommended by consensus bodies, ship classification societies and other maritime organizations with experience in the industry. As the baseline upon which other standards, rules, and equivalency requests are evaluated, it is important that subchapter F incorporate up-to-date references. The class rules of the American Bureau of Shipping (ABS), in particular, are incorporated by reference in multiple locations within subchapter F and 46 CFR Chapter I. It is important to note that while these rules set the regulatory baseline or standard for specific engineering systems and equipment, the Coast Guard has also authorized classification societies in accordance with 46 CFR part 8. These authorized classification societies are listed on the Coast Guard website [1] and have been delegated the authority to perform certain functions and certifications using their respective class rules for vessels enrolled in the Alternate Compliance Program. For vessels not enrolled in the Alternate Compliance Program, the class rules of an authorized classification society may be proposed as an alternative to the ABS class rules incorporated by reference for engineering systems and equipment. The following table indicates the sections we propose to amend, and why.

BILLING CODE 9110–04–P

[1] *https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Prevention-Policy-CG-5P/Inspections-Compliance-CG-5PC-/Commercial-Vessel-Compliance/Flag-State-Control-Division/ClassSocAuth/.*

Table 1 – Reason for Change---CFR Part or Section Affected

Reason for Change	*Section*
Corrections...	§§ 50.05-5(b), 50.05-20, 50.05-20(a), 50.10-23, 50.20-5(b), 50.20-5(c), 50.20-10(a), 50.20-15(a), 50.20-30, 50.25-1, 50.25-7(c), 50.25-7(d), 52.01-1(a), 52.01-1(b), 52.01-3, 52.01-50, 52.01-50(b)(2), 52.01-55(a), 52.01-90, 52.01-95(a), 52.01-95(e), 52.01-110, 52.01-120, 52.01-130, 52.01-135, 52.01-145, 52.05-15, 52.05-20, 52.20-1, 52.25-3, 52.25-5, 52.25-7, 52.25-20, 53.01-1(a), 53.01-1(b), 53.05-1, 53.05-2, 53.05-3, 53.05-5, 54.01-1(a), 54.01-1(b), 54.01-1(d), 54.01-1(e), 54.01-5(a), 54.01-5(b), 54.01-15, 54.01-15(a)(3)(i), 54.01-18(a), 54.01-18(b)(5), 54.05-20, 54.05-30(b), 54.10-3, 54.10-3(b), 54.10-20(a)(2), 54.15-10(e), 54.15-10(h)(2), 54.15-25(c-1), 56.01-2(a), redesignated 56.01-2(c), redesignated 56.01-2(f), redesignated 56.01-2(g), redesignated 56.01-2(j), redesignated 56.01-2(k), 56.07-5, 56.10-5, 56.15-1, 56.15-5, 56.20-1, 56.20-5, 56.20-9, 56.20-15, 56.25-5, 56.25-7, 56.25-20, 56.30-5, 56.30-10, 56.30-20, 56.30-25, 56.30-30, 56.30-35, 56.35-1, 56.50-1, 56.50-15, 56.50-20, 56.50-50(k), 57.01-1(a), 57.02-1(a), 57.02-1(b), 56.97-1, 57.02-2(a), Table 57.02-1(a), 57.02-2(a)(1), 57.02-3(a), 57.03-1(a)(1), 57.06-1(c), 58.01-10(b), 58.03-1(a), 58.03-1(b), 58.03-1(c), redesignated 58.03-1(d), redesignated 58.03-1(e), redesignated 58.03-1(f), redesignated 58.03-1(g), redesignated 58.03-1(h), redesignated 58.03-1(i), redesignated 58-16.5, 58.16-10(b), 59.01-2(b), 59.10-5(i), 61.03-1(a), 61.03-1(b), 62.05-1(a), 62.35-50, 63.01-3(b), 63.05-1(a), 63.05-1(c), 63.10-1, 63.25-9(a), 63.25-9(b), 63.25-9(b)(3), 64.2(b)
Stylistic revisions...	§§ 50.01-10(b), 50.05-1(a), 50.05-1(c), 50.05-5(b), 50.05-5(c), 50.05-10(a), 50.05-15(a), 50.05-15(b), 50.05-20(a), 50.05-20(b), 50.10-20, 50.10-23, 50.10-25, 50.10-30(b), 50.20-1(b), 50.20-25(a), 50.20-25(b), 50.20-30, 50.20-35(a), 50.20-35(b), redesignated 50.25-1(e), 50.25-3(a), 50.25-3(b), 50.25-5(a), 50.25-5(b), 50.25-7(b), 50.25-7(c), 50.30-1(a), 50.30-10(a), 50.30-10(b), 50.30-15(a), 50.30-15(b), 50.30-15(c), 50.30-20(a), 50.30-20(b), 52.01-1(a), 52.01-1(b)(1), 52.01-2(a), 52.01-5(a), 52.01-35(b), 52.01-40, redesignated 52.01-50(b)(1), redesignated 52.01-50(b)(2), 52.01-55(a), 52.01-55(b), 52.01-95(a), 52.01-95(b)(1), 52.01-95(b)(2), 52.01-95(b)(3), 52.01-95(c), 52.01-95(e), 52.01-95(f), 52.01-100(a), 52.01-100(b), 52.01-105(d)(1), 52.01-105(d)(2), 52.01-105(e)(1), 52.01-110(a), 52.01-110(b)(1), 52.01-110(b)(2), 52.01-110(b)(3), 52.01-110(b)(4), 52.01-110(c), 52.01-110(d), 52.01-110(f), 52.01-120(a)(3), 52.01-120(a)(4), 52.01-120(a)(5), 52.01-120(a)(6), 52.01-120(a)(8), 52.01-120(a)(9), 52.01-120(b)(1), 52.01-120(b)(2), 52.01-120(c)(1), 52.01-120(c)(2), 52.01-120(c)(3), 52.01-120(d)(1), 52.01-120(d)(2), 52.01-130(a)(1), 52.01-130(a)(2), 52.01-130(a)(3), 52.01-130(b)(1), 52.01-130(b)(2), redesignated 52.01-130(b)(3), redesignated 52.01-130(b)(4), redesignated 52.01-130(b)(5), 52.01-130(c)(1), 52.01-130(c)(2), 52.01-135(a), 52.01-135(b), 52.01-135(c), 52.01-140(c), 52.01-140(d), 52.05-1(a), 52.05-15(a), 52.05-30(a), 52.05-30(b), 52.05-30(c), 52.05-45(a), 52.15-1, 52.15-5(a), 52.15-5(b), 52.15-5(c), 52.15-5(d), 52.20-1, 52.20-25(a), 52.20-25(b), 52.25-1, 52.25-10(a), 52.25-10(b), 52.25-15(a), 53.01-1(a), 53.01-1(b), 53.01-1(b)(1), 53.01-1(b)(2), 53.01-1(c)(1), 53.01-1(c)(2), 53.01-3(a), 53.01-5(a), 53.01-5(b), 53.01-10(a), 53.01-10(b)(1), 53.01-10(b)(2), 53.01-10(c)(2), 53.01-10(d), 53.10-1, 53.10-3(a), 53.10-10, 53.10-15, 53.12-1(a), 53.12-1(b), 54.01-1(a), 54.01-1(b)(1), 54.01-2(a), 54.01-10(b), 54.01-10(c), 54.01-

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redesignated 56.01-2(d)(54), redesignated 56.01-2(d)(55), redesignated 56.01-2(d)(57), redesignated 56.01-2(d)(58), redesignated 56.01-2(d)(59), redesignated 56.01-2(d)(60), redesignated 56.01-2(d)(61), redesignated 56.01-2(d)(62), redesignated 56.01-2(d)(63), redesignated 56.01-2(d)(64), redesignated 56.01-2(e)(1), redesignated 56.01-2(f)(1), redesignated 56.01-2(g)(1), redesignated 56.01-2(h)(1), redesignated 56.01-2(i)(1), redesignated 56.01-2(j)(1), redesignated 56.01-2(j)(2), redesignated 56.01-2(j)(3), redesignated 56.01-2(j)(4), redesignated 56.01-2(j)(5), redesignated 56.01-2(j)(6), redesignated 56.01-2(j)(7), redesignated 56.01-2(j)(8), redesignated 56.01-2(j)(9), redesignated 56.01-2(k)(1), redesignated 56.01-2(k)(2), 56.01-5, 56.01-10(a), 56.01-10(b), 56.01-10(c)(1), 56.01-10(c)(2), 56.01-10(d)(1), 56.01-10(d)(2), 56.01-10(d)(3), 56.01-10(e), 56.04-1, 56.04-2, 56.07-10(a)(2), 56.07-10(b)(1), 56.07-10(b)(2), 56.07-10(b)(3), 56.07-10(c), 56.07-10(e)(2), 56.07-10(f)(1), 56.10-1(a), 56.10-5(a), 56.10-5(b), 56.10-5(c)(5), 56.15-5(a), 56.15-5(b), 56.20-5, 26.20-7, 56.20-9(b), 56.20-9(c), 56.20-9(d), 56.20-9(e), 56.20-9(f), 56.20-15(a), 56.20-15(b), 56.20-20(a), 56.25-10(a), 56.25-15(a), 56.25-20(e), 56.30-3, 56.30-5(b)(1), 56.30-5(b)(2), 56.30-5(e), 56.30-10(b)(6), 56.30-30(a), 56.30-30(b)(1), redesignated 56.30-40(c), redesignated 56.30-40(f), redesignated 56.30-40(g), 56.35-1(a), 56.50-1(a), 56.50-1(b)(1), 56.50-1(b)(2), 56.50-1(d), 56.50-1(e), 56.50-1(f), 56.50-1(h), 56.50-1(i), 56.50-1(j), 56.50-1(k), 56.50-15(a), 56.50-15(b), 56.50-15(c), 56.50-15(d), 56.50-15(g), 56.50-15(j), 56.50-20(b), 56.50-25(a), 56.50-25(b), 56.50-25(c), 56.50-25(d), 56.50-30(a)(1), 56.50-30(a)(3), 56.50-30(a)(4), redesignated 56.50-30(b)(2), redesignated 56.50-30(b)(3), 56.50-30(c)(1), 56.50-30(c)(2), 56.50-30(d), 56.50-30(d)(1), 56.50-30(d)(3), 56.50-30(e), 56.50-30(e)(1), 56.50-30(e)(2), 56.50-30(f), 56.50-40(a)(2), 56.50-40(b), 56.50-40(c), 56.50-40(d), 56.50-45(a), 56.50-45(b), redesignated 56.50-50(a)(2), redesignated 56.50-50(a)(3), 56.50-50(b), 56.50-50(d), 56.50-50(d)(3), 56.50-50(d)(4), 56.50-50(d)(5), 56.50-50(f)(1), 56.50-50(f)(4), 56.50-50(g), 56.50-50(i), 56.50-50(j), 56.50-50(l), 56.50-50(m), 56.50-55(b)(1), 56.50-55(b)(2), 56.50-55(d), 56.50-55(e)(2), 56.50-55(e)(3), 56.50-60(a)(1), 56.50-60(d)(3)(ii), 56.50-60(d)(3)(iii), 56.50-60(d)(3)(iv), 56.50-60(f), 56.50-65(c), 56.50-60(d), 56.50-60(e), 56.50-60(f), 56.50-70(a)(1), 56.50-70(a)(3), 56.50-70(a)(4), 56.50-70(b)(1), 56.50-70(c), 56.50-70(d), 56.50-70(f), 56.50-70(g), 56.50-70(h), 56.50-75(a)(1),56.50-75(a)(2), 56.50-75(a)(3), 56.50-75(b)(1), 56.50-75(b)(2), 56.50-75(b)(3), 56.50-75(b)(4), 56.50-75(b)(6), 56.50-75(b)(7), 56.50-80(a), 56.50-80(b), 56.50-80(c), 56.50-80(d), 56.50-80(e), 56.50-80(f), 56.50-80(g), 56.50-85(a)(1), 56.50-85(a)(2), 56.50-85(a)(3), 56.50-85(a)(7), 56.50-85(a)(7)(i), 56.50-85(a)(9), 56.50-85(a)(12), 56.50-90(b), 56.50-90(e), 56.50-95(a)(1), 56.50-95(a)(2), 56.50-95(a)(3), 56.50-95(b)(2), 56.50-95(b)(3), 56.50-95(d)(1), 56.50-95(d)(2), 56.50-95(e)(1), 56.50-95(e)(2), 56.50-95(f), 56.50-95(g), 56.50-95(h), 56.50-96(a), 56.50-97, 56.50-103(b), 56.50-103(e), 56.50-103(g), 56.50-103(h), 56.50-103(i), 56.50-103(k), 56.50-105(a), 56.50-105(a)(1), 56.50-105(a)(1)(i), 56.50-105(a)(1)(ii), 56.50-105(a)(2), 56.50-105(a)(3), 56.50-105(a)(4), 56.50-105(b), 56.50-105(b)(2), 56.50-105(b)(3), 56.50-105(b)(4), 56.50-105(b)(6), 56.60-1(a)(1), 56.60-1(b), 56.60-2(a), 56.60-2(c)(1)(ii), 56.60-2(c)(2), 56.60-3(b), redesignated 56.60-5(c), 56.60-10(a), 56.60-10(b), 56.60-25, 56.65-1, 56.70-5(b), 56.70-10(a)(1)(iii), 56.70-10(a)(2), 56.70-10(a)(4), 56.70-15(a)(1), redesignated 56.70-15(a)(2), 56.70-15(b)(2), 56.70-15(b)(3), 56.70-15(b)(4), 56.70-15(b)(8), 56.70-15(e)(1), 56.70-15(f)(1), 56.70-15(g)(2), 56.70-15(g)(4), 56.70-15(g)(5), 56.70-15(g)(5)(i), 56.70-15(g)(5)(ii), 56.70-15(g)(6), 56.70-

15(h), 56.70-20(a), 56.70-20(b), 56.75-5(b), redesignated 56.75-10, 56.75-15(a), 56.75-20(a), 56.75-20(b), 56.75-25(c), 56.75-30(a)(1), 56.75-30(b)(1), 56.75-30(b)(2), 56.75-30(c)(1), 56.75-30(c)(2), 56.80-5, 56.80-15(b), 56.80-15(f), 56.85-10(c), 56.85-15(b), 56.85-15(c), 56.90-1(a), 56.90-5(a), 56.90-5(c), 56.90-10(a), 56.90-10(b), 56.95-1(a), 56.95-1(b), 56.95-5, 56.95-10(a), 56.95-10(b), 56.95-10(c)(1), 56.95-10(c)(1)(i), 56.95-10(c)(1)(ii), 56.95-10(c)(3), 56.95-10(c)(4), 56.95-10(c)(4)(i), 56.95-10(c)(5), 56.97-5(b), 56.97-40(a), 56.97-40(a)(1), 56.97-40(c), 57.01-1(a), 57.02-1(a), 57.02-2(a), 57.02-4(a), 57.02-4(b), 57.04-1, 57.05-1, 57.05-2, 57.05-3, 57.05-5, 57.06-1(a), 57.06-1(b), 57.06-1(c), 57.06-2(a), 57.06-2(a)(1), 57.06-2(a)(2), 57.06-2(b), 57.06-2(c), 57.06-3(a), 57.06-3(b), 57.06-3(d), 57.06-3(e), 57.06-4(a), 57.06-4(b), 57.06-4(c), 57.06-4(d), 57.06-4(e), 57.06-4(f), 57.06-4(f)(1), 57.06-4(f)(2), 57.06-4(g), 57.06-4(h), 57.06-4(i), 57.06-5(a), 57.06-5(b), 58.01-20, 58.01-5, 58.01-30, 58.01-50, 58.01-55, 58.03-1(a), 58.03-1(b)(1), 58.03-1(c)(1), redesignated 58.03-1(d)(1), redesignated 58.03-1(d)(2), redesignated 58.03-1(e)(1), redesignated 58.03-1(e)(2), redesignated 58.03-1(e)(3), redesignated 58.03-1(e)(4), redesignated 58.03-1(f)(1), redesignated 58.03-1(f)(2), redesignated 58.03-1(f)(3), redesignated 58.03-1(f)(4), redesignated 58.03-1(f)(5), redesignated 58.03-1(f)(6), redesignated 58.03-1(f)(7), redesignated 58.03-1(f)(8), redesignated 58.03-1(f)(9), redesignated 58.03-1(g)(1), redesignated 58.03-1(g)(2), redesignated 58.03-1(h)(1), redesignated 58.03-1(i)(1), redesignated 58.03-1(i)(2), 58.05-1(b), 58.05-5(a), 58.10-5(a), 58.10-5(b)(1), 58.10-5(c), 58.10-5(d)(1), 58.10-5(d)(1)(i), 58.10-10(a), 58.10-15(a), 58.10-15(b), 58.10-15(c)(1), 58.10-15(c)(2), 58.10-15(c)(3), 58.10-15(e), 58.10-15(f)(1), 58.10-15(f)(2), 58.10-15(f)(3), 58.10-15(g), 58.10-15(h), 58.16-1(c), 58.16-10(a)(1), 58.16-10(a)(3), redesignated 58.16-10(b)(2), redesignated 58.16-10(b)(3), 58.16-10(d), 58.16-10(e), 58.16-15(a), 58.16-15(b), 58.16-15(c), 58.16-15(d), 58.16-15(e), 58.16-16(a), 58.16-16(b), 58.16-16(c), 58.16-17(a), 58.16-17(b), 58.16-17(c), 58.16-18(a)(1), 58.16-18(a)(2), 58.16-18(a)(3), 58.16-18(a)(4), 58.16-18(a)(5), 58.16-18(b)(1), 58.16-18(b)(2), 58.16-18(c), 58.16-18(d), 58.16-19(a)(1), 58.16-19(a)(2), 58.16-19(b), 58.16-20(a), 58.16-20(b), 58.16-25(a), 58.16-30(a), 58.16-30(b), 58.16-30(c), 58.16.30(d), 58.16-30(e), 58.16-30(f), 58.16-30(g), 58.16-35(a), 58.16-35(b), 58.16-35(c), 58.20-1(b), 58.20-5, 58.20-10(a), 58.20-10(b), 58.20-15(a), 58.20-15(b), 58.20-15(c), 58.20-20(a), 58.20-20(b), 58.20-20(c), 58.20-25(a), 58.20-25(b), 58.25-5, 58.30-5(b), 58.30-5(c), 58.30-10(b), 58.30-10(c), 58.30-10(d), 58.30-10(e), 58.30-15(b), 58.30-15(c), 58.30-15(d), 58.30-15(e), 58.30-15(f), 58.30-20(b), 58-30-20(c), 58.30-20(d), 58.30-25(b), 58.30-25(c), 58.30-30(c), 58.30-30(d), 58.30-30(e), 58.30-35(a), 58.30-35(b), 58.30-35(c), 58.30-35(c)(1), 58.30-35(c)(2), 58.30-35(c)(3), 58.30-35(d), 58.30-50, 58.50-1(b), 58.50-1(c), 58.50-5(a)(1), 58.50-5(a)(2), 58.50-5(a)(3), 58.50-5(a)(4), 58.50-5(a)(5), 58.50-5(a)(6), 58.50-5(a)(7), 58.50-5(a)(8), 58.50-5(b)(1), 58.50-5(b)(2), 58.50-5(b)(3), 58.50-5(b)(4), 58.50-5(b)(5), 58.50-5(c)(1), 58.50-5(c)(2), 58.50-5(c)(3), 58.50-10(a)(2), 58.50-10(a)(3), 58.50-10(a)(5), 58.50-10(a)(6), 58.50-10(a)(7), 58.50-10(a)(8), 58.50-10(a)(9), 58.50-10(b)(1), 58.50-10(b)(2), 58.50-10(b)(3), 58.50-10(b)(4), 58.50-10(b)(5), 58.50-10(c)(1), 58.50-10(c)(2), 58.50-10(c)(3), 58.60-7, 59.01-2(a), 59.01-2(b)(1), 59.01-2(b)(2), 59.01-2(b)(3), 59.01-2(b)(4), 59.01-5(a), 59.01-5(b), 59.01-5(c), 59.01-5(d), 59.10-1(b), 59.10-1(d), 59.10-5(h), 59.10-5(i), 59.10-5(j), 59.10-5(k), 59.10-5(l), 59.10-10(a)(1), 59.10-10(a)(2), 59.10-10(a)(3), 59.10-10(d), 59.10-10(e), 59.10-10(f), 59.10-15(a), 59.10-15(b), 59.10-20(a), 59.10-25, 59.10-30, 59.10-35(a), 59.10-35(b), 59.10-35(c), 59.10-35(d), 59.15-1(a), 59.15-

	1(a)(1), 59.15-1(a)(2), 59.15-1(d), 59.15-5(b), 59.15-10(a), 59.15-10(c), 59.20-1, 61.01-1(a), 61.01-1(b), 61.03-1(a), 61.03-1(b), 61.05-1, 61.05-5(a), 61.05-5(b), 61.05-10(b), 61.05-10(c), 61.05-10(d), 61.05-10(e), 61.05-10(f), 61.05-10(g), 61.05-15(a), 61.05-15(e), 61.05-20, 61.10-5(g), 61.15-1, 61.15-5(a), 61.15-5(c), 61.15-10(a), 61.15-15(a), 61.20-1(b), 61.20-3(a), 61.20-3(b), 61.20-5(a), 61.20-5(b), 61.20-17(b), 61.20-23(c), 61.30-5, 61.30-20, 61.35-3, 61.40-1(b), 62.01-3, 62.01-5, 62.05-1(a), 62.05-1(b)(1), 62.10-1, 62.15-1, 62.20-1, 62.20-5(a), 62.35-1(a), 62.35-15(a)(2), 62.35-40, 63.05-1(a), 63.05-1(b)(1), 63.05-1(c)(1), 63.05-1(d)(1), 63.05-1(e)(1), 63.05-1(e)(2), 63.05-1(f)(1), 63.05-1(f)(2), 63.05-1(f)(3), 63.05-1(g)(1), 63.05-1(g)(2), 63.05-1(g)(3), 63.05-1(g)(4), 63.15-1, 63.15-3, 63.15-7, 63.25-7, 63.25-9, 64.2(a), 64.2(b), 64.5, 64.11, 64.13, 64.21, 64.25, 64.31, and 64.63.
Updated cross-references	§§ 54.01-1(b)(1), 54.01-1(c)(1) 54.01-1(c)(2), 54.01-1(c)(3), 54.01-1(c)(4), 54.01-1(c)(5), 54.01-1(d)(1), 54.10-20(a)(2), 57.02-1(b), 59.01-2(b)(1), 59.01-2(b)(2), 59.01-2(b)(3), 59.01-2(b)(4), 63.05-1(e)(1), 63.05-1(e)(2), 63.05-1(f)(2), 63.05-1(f)(1), 63.05-1(f)(3), 63.05-1(g)(1), 63.05-1(g)(2)
Updated industry standards	§§ 54.01-1(b)(1), 54.01-1(c)(1), 54.01-1(c)(2), 54.01-1(c)(3), 54.01-1(c)(4), 54.01-1(c)(5), 54.01-1(d)(1), 54.01-1(e)(1), 54.01-2, 56.01-2, 56.60-1, 57.02-1(b), 59.01-2(b)(1), 59.01-2(b)(2), 59.01-2(b)(3), 59.01-2(b)(4), 62.05-1(b)(1), 62.25-30(a)(1), 62.25-30(a)(2), 62.25-30(a)(3), 62.25-30(a)(5), 62.35-5(d), 62.35-35, 62.35-50, 62.50-30(c), 63.05-1(b)(1), 63.05-1(c)(1), 63.05-1(d)(1), 63.05-1(f)(1), 63.05-1(f)(3), 63.05-1(g)(1), 63.05-1(g)(2), 63.05-1(g)(3), 63.05-1(g)(4), 63.25-3(a)

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B. Standards Incorporated by Reference To Be Updated or Added

Following this paragraph, we include an alphabetical list of the standards we propose to update or add, each with a listing of the sections in which they appear in Title 46 of the CFR. For each standard listed, we describe the topics covered by the standard, the proposed changes to the standard, any difference between the older edition of standards currently included within the CFR via incorporation by reference (IBR) and the edition proposed for adoption, and a list of subparts or sections that reference the standard.

• American Bureau of Shipping (ABS) standard ABS Rules for Building and Classing Marine Vessels, 2020, Part 4, Vessel Systems and Machinery. This standard updates the 2003 standard, incorporated by reference in §§ 58.01–5, 58.05–1, 58.10–15, 58.20–5, 58.25–5, 62.25–30, 62.35–5, 62.35–35, 62.35–40, 62.35–50, and 62.50–30. In 2020, ABS changed the name of the Steel Vessel Rules to Marine Vessel Rules. All parts and sections contain the same information along with updates to reflect the current technologies for commercial vessels.

• American Boat and Yacht Council (ABYC) standard ABYC P–1–14, Installation of Exhaust Systems for Propulsion and Auxiliary Engines (2009 standard reaffirmed 2014). This standard updates the 1973 standard, incorporated by reference at § 58.10–5. It contains the rules and guidance for the safe installation and operation of exhaust systems for propulsion and auxiliary engines. Updates to the standard are editorial (non-substantive) in nature.

• ANSI Z21.22–2015, Relief valves for hot water supply systems. This standard updates the 1986 edition incorporated by reference at § 63.25–3. This standard establishes requirements for relief valves for hot water systems. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the standard intent. It is the internationally accepted standard.

• API Recommended Practice 14C, Analysis, Design, Installation, and Testing of Safety Systems for Offshore Production Facilities, Eighth Edition, February 2017. This standard updates the 1986 edition, incorporated by reference in § 58.60–9. The updates made to the standard are editorial in nature.

• API STD 53, Well Control Equipment Systems for Drilling Wells, fifth edition. This standard replaces API Recommended Practice 53 (API RP 53), the second edition of which is currently incorporated by reference at § 58.60–7. API STD 53 promotes best safety practices for the oil and gas industry during drilling operations, principally focusing on blowout prevention.

• API STD 607, Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats, seventh edition (2016). This standard replaces the fourth edition of API STD 607 (1993), incorporated by reference at § 56.20–15. This standard specifies fire type-testing of valves that contain nonmetallic materials and pressure-containing capabilities after the fire test.

• ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers (2019 edition). The 2001 edition is currently incorporated by reference at §§ 52.01–2, 52.01–5, 52.01–50, 52.01–95, 52.01–100, 52.01–105, 52.01–110, 52.01–115, 52.01–120, 52.01–135, 52.01–140, 52.01–145, 52.05–1, 52.05–15, 52.05–20, 52.05–30, 52.05–45, 52.15–1, 52.15–5, 52.20–1, 52.20–25, 52.25–3, 52.25–5, 52.25–7, 52.25–10, 56.15–1, 56.20–1, 56.60–1, 56.70–15, 56.95–10, 58.30–15, and 59.10–5. By means of this rule, we propose to remove the references at §§ 56.20–1 and 56.70–15. This portion of the ASME Boiler and Pressure Vessel Code (BPVC) provides rules for construction of power boilers, electric

boilers, miniature boilers, and high temperature water boilers to be used in stationary service and includes power boilers used in locomotive, portable, and traction service. Every two years, the code is revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the code. It is the internationally-accepted authoritative standard for design and construction of boilers. Incorporating the latest edition simplifies regulatory compliance and ensures the latest industry practices based on changes in technology are addressed and the highest possible level of safety is required. The 2019 standard updates the code by developing a new non-mandatory appendix for fabrication of dissimilar metal welds for creep strength enhanced ferritic steel to austenitic materials, rewriting section PW–38, incorporating non-mandatory appendix A–100, including detailed rules for preheating and inter-pass temperatures and interruption of welding and preheat, and adding a new figure for code jurisdictional limits for piping for fire-tube boilers.

• ASME Boiler and Pressure Vessel Code, Section IV, Rules for Construction of Heating Boilers (2019 edition). The 2004 edition is currently incorporated by reference at §§ 53.01–3, 53.01–5, 53.01–10, 53.05–1, 53.05–2, 53.05–3, 53.05–5, 53.10–1, 53.10–3, 53.10–10, 53.10–15, and 53.12–1. This code contains requirements, specific prohibitions, and non-mandatory guidance for construction of heating boilers. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the code. It is the internationally accepted authoritative standard for design and construction of heating boilers. Incorporating the latest editions ensures compliance with current industry practices. The 2019 code updates Section IV by adding stress values to Table HF–30001 and adding language to various parts to allow for electronic signatures.

• ASME Boiler and Pressure Vessel Code, Section VII, Recommended Guidelines for the Care of Power Boilers (2019 edition). The 2001 edition is currently incorporated by reference at §§ 59.01–2. This code contains requirements, specific prohibitions, and non-mandatory guidance for construction of power boilers. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the code. It is the internationally accepted authoritative standard for operating, maintaining, examining, and care of power boilers. Incorporating the latest editions ensures compliance with current industry practices. The changes made to the standard are structural and stylistic. ASME Boiler and Pressure Vessel Code, Section VIII, Rules for Construction of Pressure Vessels (2019 edition). The 1998 edition is currently incorporated by reference at §§ 54.01–2, 54.01–5, 54.01–15, 54.01–18, 54.01–25, 54.01–30, 54.01–35, 54.03–1, 54.05–1, 54.10–1, 54.10–3, 54.10–5, 54.10–10, 54.10–15, 54.15–1, 54.15–5, 54.15–10, 54.15–13, 54.20–1, 54.20–3, 54.25–1, 54.25–3, 54.25–8, 54.25–10, 54.25–15, 54.25–20, 54.30–3, 54.30–5, 54.30–10, 56.15–1, 56.20–1, 56.25–5, 56.30–10, 56.30–30, 56.60–1, 56.60–2, 56.60–15, 56.95–10, 58.30–15, 59.10–5, and 59.10–10. By means of this rule, we propose to remove the references at §§ 54.01–15, 56.20–1, and 56.30–30. The 1989 edition is also incorporated by reference at §§ 64.5, 64.11, 64.13, 64.21, 64.25, and 64.31, and reference is made to the use of a constant from the 1974 edition in a calculation at § 64.63. However, these earlier editions would remain unchanged within the CFR, as part 64 is applicable only to marine portable tanks for which the Coast Guard's Marine Safety Center (MSC) received an application on or before May 1, 1991. This code contains requirements, specific prohibitions, and non-mandatory guidance for construction of pressure vessels. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the code. It is the internationally accepted authoritative standard for design and construction of heating boilers. Incorporating the latest editions ensures compliance with current industry practices. The 2019 edition allows for additional design methods from Div. 2 to be used in Div. 1 by creating new appendix 46. Revisions were also made for clarity.

• ASME Boiler and Pressure Vessel Code, Section IX, Welding, Brazing, and Fusing Qualifications (2019 edition). This standard updates the 1989 edition currently incorporated at §§ 56.70–5, 56.70–20, 56.75–2, 57.01–1, 57.01–1,57.02–2, 57.02–3, 57.02–4, 57.03–1, 57.04–1, 57.05–1, 57.06–1, 57.06–3, 57.06–4, and 59.10–5. By means of this rule, we propose to newly incorporate this standard at § 56.85–10 and to remove the references at §§ 57.01–1, 57.02–3, and 57.06–3. This standard establishes the qualifications of welders, welding operators, brazers, and brazing operators and the procedures employed in welding or brazing, and has been regularly revised to accommodate technological developments, address administrative requirements, incorporate interpretations, and clarify the intent of the code. It is the internationally accepted authoritative standard for pressure vessels.

• ASME B1.1–2003 (reaffirmed 2008), Unified Inch Screw Threads (UN and UNR Thread Form). This standard updates the 1982 edition, incorporated by reference at §§ 56.25–20 and 56.60–1, and specifies the thread form, series, class, allowance, tolerance, and designation for unified screw threads. The revision changes some of the values in tables provided in the standard. These changes in value were the result of the application of consistent eight decimal and round rules established in ASME B1.30–1992.

• ASME B1.20.1–2013, Pipe Threads, General Purpose (Inch). This standard updates the 1983 edition incorporated by reference at § 56.60–1, and covers the dimensions and gauging of pipe threads. The revisions to the standard include editorial changes, changes in calculations and figures, and clarification of figures.

• ASME B1.20.3–1976, Dryseal Pipe Threads (Inch), January 1, 1976, reaffirmed 2013 (''ASME B1.20.3''), IBR approved for § 56.60–1. We are updating the reaffirmation date of this standard to conform with its most recent reaffirmation. This document primarily provides specific dimensions for tapered pipe threads of various common sizes, and has not changed substantially.

• ASME B16.1–2015, Gray Iron Pipe Flanges and Flanged Fittings, Classes 25, 125, and 250. This standard updates the 1998 standard for these fittings as incorporated by reference in §§ 56.60–1 and 56.60–10. It covers pressure-temperature ratings, markings, and materials for Classes 25, 125, and 250 gray iron pipe flanges and flanged fittings. Updates include editorial changes, revisions and corrections to the 1998 edition.

• ASME B16.3–2016, Malleable Iron Threaded Fittings, Classes 150 and 300. This standard updates the 1998 edition incorporated by reference at § 56.60–1, and covers pressure-temperature ratings, dimensions, markings, and materials for Classes 150 and 300 malleable iron threaded fittings. Updates to the standard are editorial in nature, with changes made to update verbiage and readings.

• ASME B16.4–2016, Gray Iron Threaded Fittings, Classes 125 and 250.

This standard updates the 1998 edition incorporated by reference at § 56.60–1. It covers pressure-temperature ratings, markings, materials, dimensions, and tolerances for Classes 125 and 250 gray iron threaded fittings. The updates to this standard include metric system units and revisions to the text concerning dimensions and tolerance.

- ASME B16.5–2017, Pipe Flanges and Flanged Fittings, NPS ½ through NPS 24 Metric/Inch Standard. This standard updates the 2003 edition incorporated by reference at §§ 56.25–20, 56.30.10, and 56.60–1. It covers pressure-temperature ratings, materials, dimensions, tolerances, marking, testing, and methods of designing openings for pipe flanges and flanged fittings. The updates made to this standard include updating materials and requirements for forgings.
- ASME B16.11–2016, Forged Fittings, Socket-Welding and Threaded. This standard updates the 2001 edition incorporated by reference at §§ 56.30–5 and 56.60–1. It covers pressure-temperature ratings, materials, dimensions, tolerances, marking, and testing for forged fittings. Updates to the standard include the addition of another type of fitting, format and reference revisions, and marking requirements.
- ASME B16.14–2013, Ferrous Pipe Plugs, Bushings, and Locknuts with Pipe Threads. This standard updates the 1991 edition incorporated by reference at § 56.60–1. It covers pressure-temperature ratings, materials, dimensions, tolerances, marking, testing, and threading for various threaded ferrous pipe fittings. The updates to this standard were mostly editorial and conforming in nature, with revisions to section 8 requiring threads and gauging practices to conform to ASME B1.20.1 and other B16 standards.
- ASME B16.15–2013, Cast Copper Alloy Threaded Fittings, Classes 125 and 250. This standard updates the 1985 edition that is currently incorporated by reference at § 56.60–1. It covers pressure-temperature ratings, materials, dimensions, tolerances, marking, testing, and threading requirements for Classes 125 and 250 of cast copper alloy fittings. The standard was updated in 2004, and 2011, and the 2013 edition revises section 7, requiring threading and gauging practices be identical to ASME B1.20.1 and other B16 standards.
- ASME B16.20–2012, Metallic Gaskets for Pipe Flanges, Ring-Joint, Spiral-Wound, and Jacketed. This standard updates the 1998 edition incorporated by reference at § 56.60–1. It covers materials, dimensions, tolerances, and markings for metal ring-joint gaskets, spiral-wound metal gaskets, metal-jacketed gaskets, and grooved metal gaskets with covering layers. The updates to the standard include minor revisions to the material requirements for spiral-wound gaskets, along with tables and figures.
- ASME B16.21–2016, Nonmetallic Flat Gaskets for Pipe Flanges. This standard updates the 2005 edition incorporated by reference at § 56.60–1. It covers types, sizes, materials, and dimensions for gaskets used with flanges. The 2016 edition primarily expands the scope of the standard to include values greater than size 12 NPS.
- ASME B16.23–2016, Cast Copper Alloy Solder Joint Drainage Fittings: DWV. This standard updates the 2002 edition incorporated by reference at § 56.60–1. It covers materials, dimensions, tolerances, and markings for cast copper alloy solder joint drainage fittings, designed for use in drain, waste, and vent systems. The updates in the 2016 edition are editorial in nature, with updates to verbiage and readings.
- ASME B16.25–2012, Buttwelding Ends. This standard updates the 2003 edition incorporated by reference at §§ 56.30–5, 56.60–1, and 56.70–10. It covers the preparation of buttwelding ends of piping components to be joined into a piping system by welding and includes requirements for welding bevels, for external and internal shaping of heavy-wall components, and for preparation of internal ends (including dimensions and tolerances). The updates to the standard are editorial in nature, and include updated reference and tables.
- ASME B16.29–2012, Wrought Copper Alloy Solder-Joint Drainage Fittings-DWV. This standard updates the 2007 edition currently incorporated at § 56.60–1. This standard covers the materials, marking, sizes, and dimensions for wrought copper and copper alloy solder-joint drainage fittings, and was updated editorially in 2012.
- ASME B16.34–2017, Valves—Flanged, Threaded, and Welding End. This standard updates the 1996 edition currently incorporated by reference at §§ 56.20–1 and 56.60–1, though we propose to remove the reference at § 56.20–1 through this rule. This standard applies to new construction and covers pressure-temperature ratings, dimensions, tolerances, materials, testing and marking for flanged, threaded, and welding end valves. The standard updates the materials manufactured list to include valves up to NPS 60 and changes were made to allowable materials.
- ASME B18.2.1–2012, Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series). This standard updates the 1996 edition incorporated by reference at §§ 56.25–20 and 56.60–1. It covers the dimensional requirements for nine product types of inch series bolts and screws recognized as American National Standard. The 2012 standard provides significant revisions to illustrations in tables 6, 7 and 8 which provided the wrong dimensions for several figures.
- ASME B18.2.2–2015, Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Couplings Nuts (Inch Series). This standard updates the 1987 edition incorporated by reference at §§ 56.25–20 and 56.60–1. It covers complete general and dimensional data for various types of inch series hex and square nuts.
- ASME B31.1–2016, Power Piping, ASME Code for Pressure Piping, B31. This standard updates the 2001 edition currently incorporated by reference at §§ 56.01–3, 56.01–5, 56.07–5, 56.07–10, 56.10–1, 56.10–5, 56.15–1, 56.15–5, 56.20–1, 56.25–7, 56.30–1, 56.30–5, 56.30–10, 56.30–20, 56.35–1, 56.50–1, 56.50–15, 56.50–40, 56.50–65, 56.50–70, 56.50–97, 56.60–1, 56.65–1, 56.70–10, 56.70–15, 56.80–5, 56.80–15, 56.95–1, 56.95–10, and 56.97–1. By means of this rule, we propose to add a new reference at § 56.70–5 and remove the existing references at §§ 56.15–5, 56.20–1, 56.30–10, 56.50–15, and 56.50–65. This standard prescribes requirements for the design, materials, fabrication, inspection, operation, and maintenance of piping systems. The updates to the standard were numerous, with many revisions to nomenclature and additions to stress test values for several items in various tables.
- ASME B31.3–2018, Process Piping, ASME Code for Pressure Piping, B31. This standard updates the 1987 edition currently incorporated by reference at § 58.60–7, and would also be adopted for § 56.60–1. ASME B31.3 is the industry standard for low temperature piping. It is a more appropriate reference for low temperature piping than ASME B31.1, which is the current main reference document for Part 56. A specific standard for low temperature piping is needed due to the increase in liquefied natural gas (LNG) as a ship fuel. LNG is cryogenic, necessitating the use of very specific materials.
- ASME B31.5–2016, Refrigeration Piping and Heat Transfer Components, ASME Code for Pressure Piping, B31. This standard updates the 1987 edition, incorporated by reference at § 58.20–5 and 58.20–20. It prescribes requirements

for the materials, design, fabrication, assembly, test and inspection of refrigerant, heat transfer components, and secondary cooling piping for very low temperatures. The changes in the standards are editorial in nature.

- ASME B36.10M–2015, Welded and Seamless Wrought Steel Pipe. This standard updates the 2004 edition incorporated by reference at §§ 56.07–5, 56.30–20, and 56.60–1. This standard covers the standardization of dimensions of welded and seamless wrought steel pipe for high or low temperatures and pressure. The 2015 edition updates the standard with editorial changes and revisions.
- ASME CSD–1–2018, Controls and Safety Devices for Automatically Fired Boilers. This standard updates the 2004 edition currently incorporated by reference at §§ 63.10–1, 63.15–1, and 63.20–1. This standard establishes requirements for the assembly, installation, maintenance, and operation of controls and safety devices on automatically operated boilers. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the standard. It is the internationally accepted authoritative standard on controls and safety devices for pressure vessels.
- ASME SA–675–2021, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties. This standard replaces the 1998 edition currently incorporated at § 56.60–2. The standard is identical to ASTM A675 in that it covers special quality carbon steel bars and bar size shapes to specific mechanical properties, most importantly tensile strength. The current standard has minor technical differences from the 1998 edition, such as minor changes to maximum carbon content of certain steel grades.
- ASTM A20/A20M–19, Standard Specification for General Requirements for Steel Plates for Pressure Vessels. The 1997 edition is currently incorporated by reference at §§ 54.05–10 and 54.25–10. This standard provides a group of common requirements that apply to rolled steel plates used for pressure vessels. It has been regularly updated to address advancements in steel plate chemical compositions, manufacturing processes, and material testing.
- ASTM A36/A36M–14, Standard Specification for Carbon Structural Steel. This standard updates the 1997 edition incorporated by reference at § 56.30–10. This standard covers ''carbon steel shapes, plates, and bars of structural quality for use in rivet, bolted, or welded construction . . .for general purposes.'' The updates to the standard include updates to material construction limits for plate products greater than 15 inches.
- ASTM A47A47M–99 (Reapproved 2014), Standard Specification for Ferritic Malleable Iron Castings. This standard updates the 1995 edition incorporated by reference at § 56.60–1. This standard, which covers ferritic malleable castings for general engineering usage at temperatures from normal ambient to approximately 400°C (750 °F), is routinely updated to reflect updates in technology and practices.
- ASTM A53/A53M–12, Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc-Coated, Welded and Seamless. This standard updates the 1998 edition incorporated by reference at §§ 56.10–5 and 56.60–1. It covers seamless and welded black and hot-dipped galvanized steel pipes and is updated to reflect changes in material composition for copper content of a type of pipe, as well as some editorial changes.
- ASTM A126–04, Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings (Reapproved 2014). This standard updates the 1995 edition incorporated by reference at § 56.60–1. It covers three classes of gray iron for castings intended for use as valve pressure retaining parts, pipe fittings, and flanges and is updated to reflect changes in material testing.
- ASTM A135/A135M–19, Standard Specification for Electric-Resistance-Welded Steel Pipe. This standard updates the 1997 edition incorporated by reference at § 56.60–1. It covers two grades of electric-resistance-welded steel pipe in NPS 2 to NPS 30 wall thickness. The standard has been updated to reflect changes in material testing and some editorial changes.
- ASTM A193/A193M–19, Standard Specification for Alloy-Steel and Stainless Steel Bolting for High-Temperature Service or High Pressure Service and Other Special Purpose Applications. This updates the 1998 standard incorporated by reference at § 58.30–15. This standard covers alloy and stainless steel bolting materials and components for pressure vessels, valves, flanges, and fittings for high temperature or high-pressure service. The updates to this standard are editorial in nature with minor technical changes and changes in material testing and grading.
- ASTM A197/A197M–00 (Reapproved 2015), Standard Specification for Cupola Malleable Iron. This standard updates the 1992 edition incorporated by reference at § 56.60–1. It covers malleable irons for castings made by the cupola process. The standard has been updated to reflect changes in material testing, as well as with some editorial changes.
- ASTM A203/A203M–17, Standard Specification for Pressure Vessel Plates, Alloy Steel, Nickel. The 1997 edition is currently incorporated by reference at § 54.05–20. This standard covers nickel-alloy steel plates intended for pressure vessels. It has been revised twice since 1997 to update the chemical composition requirements of nickel-alloy steel and to eliminate prescriptive ''current practice'' thickness limits. Instead, thickness is only limited by the capacity of the composition to meet specified mechanical properties.
- ASTM A210/A210M–19, Standard Specification for Seamless Medium-Carbon Steel Boiler and Superheater Tubes. This standard updates the 1996 edition incorporated by reference at § 56.60–1. It covers minimum-wall-thickness, seamless medium-carbon steel, boiler flues, including safe ends, arch and stay tubes, and superheater tubes and is updated to reflect changes in material testing and grading, as well as some editorial changes.
- ASTM A268/A268M–10 (Reapproved 2016), Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service. This standard updates the 1996 edition incorporated by reference at § 56.60–1. It covers minimum-wall-thickness, stainless steel tubing for general corrosion-resisting and high-temperature service. The updated standard reflects changes in material testing and grading, as well as some editorial changes.
- ASTM A276/A276M–17, Standard Specification for Stainless Steel Bars and Shapes. This standard updates the 1998 edition incorporated by reference at § 56.60–2. It covers hot-finished or cold-finished bars except bars for forging. The updated standard reflects changes in material testing and grading, as well as some editorial changes.
- ASTM A312/A312M–17, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes. This standard updates the 1995 edition incorporated by reference at §§ 56.50–105 and 56.60–1. The standard covers overs seamless, straight-seam welded, and heavily cold worked welded austenitic stainless steel pipe intended for high-temperature and general corrosive service. The standard is updated to reflect changes in material testing and grading, as well as some editorial changes.

• ASTM A333/A333M–16, Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness. This standard updates the 1994 edition incorporated by reference at §§ 56.50–105 and 56.60–1. It covers nominal (average) wall seamless and welded carbon and alloy steel pipe intended for use at low temperatures and in other applications requiring notch toughness and is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A334/A334M–04a (Reapproved 2016), Standard Specification for Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service. This standard updates the 1994 edition incorporated by reference at §§ 56.50–105 and 56.60–1. It covers nominal (average) wall seamless and welded carbon and alloy steel tubes intended for use at low temperatures and in other applications requiring notch toughness and is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A350/A350M–17, Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components. The standard updates the 1997 edition incorporated by reference at § 56.50–105. This standard covers several grades of carbon and low-alloy steel forged or ring-rolled flanges, forged fittings and valves intended primarily for low-temperature service and requiring notch toughness testing. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A352/A352M–17, Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service. The standard updates the 1998 edition incorporated by reference at § 56.50–105. This standard covers steel castings for valves, flanges, fittings, and other pressure-containing parts. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A358/A358M–15, Standard Specification for Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications. The standard updates the 1992 edition incorporated by reference at § 56.60–1. This standard covers the grades of alloy and stainless steel piping suitable for corrosive or high-temperature service. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A370–19, Standard Test Methods and Definitions for Mechanical Testing of Steel Products. The 1997 edition is currently incorporated by reference at § 54.25–20. This standard covers procedures and definitions for the mechanical testing of steels, stainless steels, and related alloys. It has been revised almost annually since 1997 to address advancements in testing technology and practices.

• ASTM A376/A376M–17, Standard Specification for Seamless Austenitic Steel Pipe for High-Temperature Service. The standard updates the 1998 edition incorporated by reference at §§ 56.60–1 and 56.60–2. This standard covers grades of hydrogen and nitrogen for seamless austenitic steel pipes made for high-temperature service. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A403/A403M–16, Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings. The standard updates the 1998 edition incorporated by reference at § 56.60–1. This standard covers wrought stainless steel fittings for pressure piping applications. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A420/A420M–16, Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service. The standard updates the 1996 edition incorporated by reference at §§ 56.50–105 and 56.60–1. This standard covers fittings for use in pressure piping and pressure vessel service at low temperatures. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A522/A522M–14, Standard Specification for Forged or Rolled 8 and 9% Nickel Alloy Steel Flanges, Fittings, Valves, and Parts for Low-Temperature Service. The standard updates the 1995 edition incorporated by reference at § 56.50–105. This standard covers 8 or 9% nickel-alloy steel forged or rolled flanges, fittings, valves, and parts intended for use in welded pressure vessels for low-temperature service. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A575–96 (Reapproved 2013), Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades. The standard updates the 1996 (reapproved in 2007) edition incorporated by reference at § 56.60–2. This standard covers hot-wrought merchant quality steel bars produced to a chemical composition. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM A576–17, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality. The standard updates the 1990 edition (reapproved in 2012) incorporated by reference at § 56.60–2. This standard covers hot-wrought special quality steel bars. The standard is updated to reflect editorial revisions and corrections.

• ASTM B16/B16M–10 (Reapproved 2015), Standard Specification for Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines. The standard updates the 1992 edition incorporated by reference at § 56.60–2. This standard establishes the requirements for free-cutting brass rod, bar, wire and shapes of any specified cross section produced from copper alloy suitable for high speed screw matching applications and moderate thread rolling. The standard is updated to reflect editorial revisions as well as changes in material composition, grading, and testing.

• ASTM B21/B21M–20, Standard Specification for Naval Brass Rod, Bar, and Shapes. The standard updates the 1996 edition incorporated by reference at § 56.60–2. It establishes the requirements for naval brass rod, bar, and shapes produced from copper alloy, including dimensions, workmanship and appearance, testing methods, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM B26/B26–M–18, Standard Specification for Aluminum-Alloy Sand Castings. The standard updates the 1997 edition incorporated by reference at § 56.60–2. It covers specifications aluminum-alloy sand castings used in general purpose applications, including dimensions, workmanship and appearance, testing methods, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM B42–20, Standard Specification for Seamless Copper Pipe, Standard Sizes. The standard updates the 1996 edition incorporated by reference at § 56.60–1. This standard covers the requirements for seamless copper pipe in all nominal or standard pipe sizes, both regular and extra-strong, suitable for use in plumbing, boiler feed lines, and for similar purposes. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

• ASTM B43–15, Standard Specification for Seamless Red Brass

Pipe, Standard Sizes. The standard updates the 1996 edition incorporated by reference at § 56.60–1. This standard covers grades of hydrogen and nitrogen for seamless austenitic steel pipes made for high-temperature service. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.

- ASTM B68/B68M–19, Standard Specification for Seamless Copper Tube, Bright Annealed. The standard updates the 1995 edition incorporated by reference at § 56.60–1. This standard covers the requirements for bright annealed seamless copper tube suitable for use in refrigeration, oil lines, and gasoline lines, where tubing with an interior surface free from scale and dirt is required. This standard was also updated in 2011. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B75/B75M–19, Standard Specification for Seamless Copper Tube. The standard updates the 1997 edition incorporated by reference at § 56.60–1. This standard establishes the requirements for seamless round, rectangular, and square copper tube suitable for general engineering applications. This standard was also updated in 2011. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B85/B85M–18, Standard Specification for Aluminum-Alloy Die Castings. The standard updates the 1996 edition incorporated by reference at § 56.60–2. It covers aluminum alloy die castings for use in general purpose applications, including dimensions, workmanship and appearance, testing methods, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B96/B96M–16, Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels. The standard updates the 1993 edition incorporated by reference at §§ 56.60–2 and 58.50–5. This standard establishes requirements for copper-silicon alloy plate, sheet, strip, and rolled bar for drawing, forming, stamping, bonding, and general engineering applications. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B111/B111M–18a, Standard Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock. The standard updates the 1995 edition incorporated by reference at § 56.60–1. It establishes the requirements for seamless tube and ferrule stock of copper and various copper alloys, including testing methods, material and manufacture, mechanical properties, and performance requirements. The standard is updated to reflect editorial revisions in the tables provided in the standard.
- ASTM B122/B122M–16, Standard Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar. This updates the 1998 standard incorporated by reference at § 58.50–5. This standard establishes the requirements for copper-nickel-tin alloy, copper-nickel-zinc alloy (nickel silver), and copper-nickel alloy plate, sheet, strip, and rolled bar, including testing methods, material and manufacture, mechanical properties, and performance requirements. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.
- ASTM B124/B124M–18, Standard Specification for Copper and Copper Alloy Forging Rod, Bar, and Shapes. The standard updates the 1996 edition incorporated by reference at § 56.60–2. It establishes the requirements for copper and copper alloy rod, bar, and shapes intended for hot forging, including testing methods, material and manufacture, mechanical properties, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B127–19, Standard Specification for Nickel-Copper Alloy Plate, Sheet, and Strip. This updates the 1993 standard incorporated by reference at §§ 58.50–5 and 58.50–10. This standard covers the requirements for rolled nickel-copper alloy plate, sheet, and strip including testing methods, material and manufacture, mechanical properties, and performance requirements. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.
- ASTM B152/B152M–19, Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar. This updates the 1997 standard incorporated by reference at § 58.50–5. This standard covers the requirements for copper sheet, strip, plate, and rolled bar, including testing methods, material and manufacture, mechanical properties, and performance requirements. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.
- ASTM B161–05 (Reapproved 2019), Standard Specification for Nickel Seamless Pipe and Tube. The standard updates the 1993 edition incorporated by reference at § 56.60–1. It covers the requirements for nickel and low-carbon nickel in the form of cold-worked seamless pipe and tubes, including testing methods, material and manufacture, mechanical properties, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B165–19, Standard Specification for Nickel-Copper Alloy Seamless Pipe and Tube. The standard updates the 1993 edition incorporated by reference at § 56.60–1. It covers the requirements for nickel-copper alloy in the form of cold-worked seamless pipe and tubes, including testing methods, material and manufacture, mechanical properties, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B167–18, Standard Specification for Nickel-Chromium-Aluminum Alloys (UNS N06699), Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674), and Nickel-Chromium-Molybdenum-Copper Alloy (UNS N06235) Seamless Pipe and Tube. The standard updates the 1997 edition incorporated by reference at § 56.60–1. The standard covers cold-worked annealed, hot worked, annealed, and hot-finished seamless pipe and tube intended for general corrosion resistant and heat resistant applications. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B171/B171M–18, Standard Specification for Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers, and Heat Exchangers. The standard updates the 1995 edition incorporated by reference at § 56.60–2. It covers the requirements for copper-alloy plate, sheet, and circles cut from plate and sheet for pressure vessels, condensers, and heat exchangers, including testing methods, material and manufacture, mechanical properties, and performance requirements. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B209–14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate. This updates the 1996 standard incorporated by reference at §§ 58.50–5 and 58.50–10. This standard covers aluminum and aluminum-alloy flat sheet, coiled sheet, and plate, including testing methods,

material and manufacture, mechanical properties, and performance requirements. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.

- ASTM B210/B210M–19a, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes. The standard updates the 1995 edition incorporated by reference at § 56.60–1. It covers aluminum and aluminum-alloy drawn seamless tubes in straight lengths and coils for general purpose and pressure application in alloys. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B234–17, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes for Surface Condensers, Evaporators, and Heat Exchangers. This standard updates the 1995 standard incorporated by reference at § 56.60–1. It covers aluminum-alloy drawn seamless round tube in straight lengths for use in surface condensers, evaporators, and heat exchangers. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B241/B241M–16, Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube. The standard updates the 1996 edition incorporated by reference at § 56.60–1. It covers aluminum and aluminum-alloy seamless pipe intended for pressure applications, and outlines the standard sizes and tempers necessary. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B280–18, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service. The standard updates the 1997 edition incorporated by reference at § 56.60–1. This standard establishes the requirements for seamless copper tube intended for use in the connection, repairs, or alterations of air conditioning or refrigeration units in the field. The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B283/B283M–18, Standard Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed). The standard updates the 1996 edition incorporated by reference at § 56.60–2. This standard establishes the requirements for copper and copper alloy die forgings produced by the hot pressing method. The standard is updated to reflect editorial revisions as well as changes in chemical compositions and material grading and testing.
- ASTM B315–19, Standard Specification for Seamless Copper Alloy Pipe and Tube. The standard updates the 1993 edition incorporated by reference at § 56.60–1. This standard establishes the requirements for seamless copper alloy tube intended for general engineering purposes. The standard is updated to reflect editorial revisions.
- ASTM B361–16, Standard Specification for Factory-Made Wrought Aluminum and Aluminum-Alloy Welding Fittings. The standard updates the 1995 edition, incorporated by reference at § 56.60–1. It covers factory-made wrought aluminum and aluminum-alloy welding fittings (butt-welding or socket-end parts). The standard is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM B858–06 (Reapproved 2018), Standard Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys. The standard updates the 1995 edition, incorporated by reference at § 56.60–2. This test method describes a procedure to determine the presence of residual stress in wrought copper alloy products that may lead to stress corrosion cracking. The standard is updated to reflect editorial revisions as well as changes in material testing.
- ASTM D92–18, Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester. This updates the 1997 standard incorporated by reference at § 58.30–10. The standard describes the determination of the flash point and fire point of petroleum products by manual or automated Cleveland open cup apparatus. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.
- ASTM D93–19, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester. This updates the 1997 standard incorporated by reference at § 58.01–10. These test methods cover the determination of the flash point of petroleum products in the temperature range from 40 °C to 370 °C by manual or automated Pensky-Martens closed-cup apparatus. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.
- ASTM D323–15a, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method). This updates the 1994 standard incorporated by reference at § 58.16–5. This standard covers test method procedures for the determination of vapor pressure of gasoline, volatile crude oil, and other volatile petroleum products. The updates to this standard are editorial in nature with minor technical changes, or changes in material testing and grading.
- ASTM D665–19, Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water. This standard updates the standard from 1998, incorporated by reference at § 61.20–17. It covers test methods evaluating the ability of inhibited mineral oils, particularly steam-turbine oils, to aid in rust prevention of ferrous parts. The edits to this standard are editorial in nature.
- ASTM E23–18, Standard Test Methods for Notched Bar Impact Testing of Metallic Materials. The standard updates the 1996 edition, incorporated by reference at §§ 54.05–5 and 56.50–105. This test method describes notched-bar impact testing of metallic materials. The standard is updated to reflect editorial revisions as well as changes in material testing.
- ASTM E208–19, Standard Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steels. The standard updates the 1995 edition, currently incorporated by reference at § 54.05–5. This standard describes methods of determining nil-ductile transition (NDT) of ferritic steels. It has been revised three times since 1995 to address advancements in testing methods.
- ASTM F1006–86 (Reapproved 2018), Standard Specification for Entrainment Separators for Use in Marine Piping Applications. The standard updates the 1986 edition (reapproved in 2008), incorporated by reference at § 56.60–1. It covers the minimum requirements for the pressure-temperature rating, testing, and making of pressure-containing vessels for entrainment separators and is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM F1007–18, Standard Specification for Pipeline Expansion Joints of the Packed Slip Type for Marine Application. This standard updates the 1986 edition (reapproved in 2007), incorporated by reference at § 56.60–1. It covers the design, manufacturing, and testing of packed slip tube expansion joints used in pipelines for thermal growth and contraction and is updated to reflect editorial revisions as well as changes in material grading and testing.
- ASTM F1020–86 (Reapproved 2018), Standard Specification for Line-Blind Valves for Marine Applications.

This standard reapproves the 1986 edition (reapproved last in 2011), incorporated by reference at § 56.60–1. It provides the minimum requirements for design fabrication, pressure rating, and testing for line-blind valves.

- ASTM F1120–87 (Reapproved 2015), Standard Specification for Circular Metallic Bellows Type Expansion Joints for Piping Applications. This standard reapproves the 1987 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. It establishes the requirements for design, manufacture, inspection, and testing of circular metallic bellows-type expansion joints for piping applications.
- ASTM F1123–87 (Reapproved 2015), Standard Specification for Non-Metallic Expansion Joints. This standard reapproves the 1987 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. It provides the minimum requirements for construction, materials, performance, and dimensional requirements of arch-type non-metallic expansion joints.
- ASTM F1139–88 (Reapproved 2015), Standard Specification for Steam Traps and Drains. This standard reapproves the 1988 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. This standard provides the minimum requirements for the design, fabrication, pressure rating, marking, and testing of steam traps and drains.
- ASTM F1155–10 (Reapproved 2015), Standard Practice for Selection and Application of Piping System Materials. ASTM F1155 already specifies a list of acceptable material and design standards for many shipboard systems. This standard is currently not incorporated by reference in 46 CFR part 56, and would be incorporated by reference in §§ 56.50–60, 56.50–105, 56.60–1, and 56.60–15. Incorporating F1155 would enable the removal of the following standards from Part 56:
  - ASME B16.9, Factory-Made Wrought Steel Buttwelding Fittings.
  - ASME B16.10, Face-to-Face and End-to-End Dimensions of Valves.
  - ASME B16.18, Cast Copper Alloy Solder Joint Pressure Fittings.
  - ASME B16.22, Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
  - ASME B16.24, Cast Copper Alloy Pipe Flanges, Flanged Fittings, and Valves Classes 150, 300, 600, 900, 1500, and 2500.
  - ASME B16.42, Ductile Iron Pipe Flanges and Flanged Fittings Classes 150 and 300.
  - ASTM A106/A106M, Standard Specification for Seamless Carbon Steel Pipe for High-Temperature Service.
  - ASTM A139/A139M, Standard Specification for Electric-Fusion (Arc)-Welded Steel Pipe (NPS 4 and Over).
  - ASTM A182/A182M, Standard Specification for Forged or Rolled Alloy-Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service.
  - ASTM A192/A192M, Standard Specification for Seamless Carbon Steel Boiler Tubes for High-Pressure Service.
  - ASTM A194/A194M, Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
  - ASTM A213/A213M, Standard Specification for Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes.
  - ASTM A214/A214M, Standard Specification for Electric-Resistance-Welded Carbon Steel Heat-Exchanger and Condenser Tubes.
  - ASTM A234/A234M, Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service.
  - ASTM A249/A249M, Standard Specification for Welded Austenitic Steel Boiler, Superheater, Heat-Exchanger, and Condenser Tubes.
  - ASTM A307, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
  - ASTM A320/A320M, Standard Specification for Alloy-Steel and Stainless Steel Bolting for Low-Temperature Service.
  - ASTM A335/A335M, Standard Specification for Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service.
  - ASTM A351/A351M, Standard Specification for Castings, Austenitic, for Pressure-Containing Parts.
  - ASTM A395/A395M, Standard Specification for Ferritic Ductile Iron Pressure-Retaining Castings for Use at Elevated Temperatures.
  - ASTM A536, Standard Specification for Ductile Iron Castings.
  - ASTM B88, Standard Specification for Seamless Copper Water Tube.
  - ASTM F682, Standard Specification for Wrought Carbon Steel Sleeve-Type Pipe Couplings.
  - MSS SP–44, Steel Pipe Line Flanges.
  - MSS SP–67, Butterfly Valves.
  - MSS SP–72, Ball Valves with Flanged or Butt-Welding Ends for General Service.
  - MSS SP–83, Class 3000 and 6000 Pipe Unions, Socket Welding and Threaded (Carbon Steel, Alloy Steel, Stainless Steels, and Nickel Alloys).
- ASTM F1172–88 (Reapproved 2015), Standard Specification for Fuel Oil Meters of the Volumetric Positive Displacement Type. This standard reapproves the 1988 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. It provides the minimum requirements for the design, fabrication, pressure rating, marking, calibration and testing for fuel oil measurement meters of the volumetric, positive displacement type. Editorial corrections were made in the 2015 standard.
- ASTM F1173–01 (Reapproved 2018), Standard Specification for Thermosetting Resin Fiberglass Pipe Systems to be Used for Marine Applications. This standard reapproves the 1995 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. It covers reinforced thermosetting resin pipe systems with nominal pipe sizes 1 through 48 in. (25 through 1200 mm). The update reflects editorial revisions as well as changes in material grading and testing.
- ASTM F1199–88 (Reapproved 2015), Standard Specification for Cast (All Temperatures and Pressures) and Welded Pipe Line Strainers (150 psig and 150 °F Maximum). This standard reapproves the 1988 edition (reapproved last in 2010) incorporated by reference at § 56.60–1. It covers the minimum requirements for the design, fabrication, rating, marking, and testing of cast and welded pipe line strainers.
- ASTM F1200–88 (Reapproved 2016), Standard Specification for Fabricated (Welded) Pipe Line Strainers (Above 150 psig and 150 °F). This standard reapproves the 1988 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. It covers the minimum requirements for the design, fabrication, rating, marking, and testing of welded pipe line strainers.
- ASTM F1201–88 (Reapproved 2016), Standard Specification for Fluid Conditioner Fittings in Piping Applications above 0 °F. This standard reapproves the 1988 edition (reapproved last in 2010), incorporated by reference at § 56.60–1. It provides the minimum requirements for pressure-retaining components of fluid conditioner fittings. It addresses the pressure-retaining component design, fabrication, rating, marking, and testing.
- ASTM F1323–14, Standard Specification for Shipboard Incinerators. This standard updates the 2001 standard currently incorporated by reference at § 63.25–9. It establishes requirements for design, manufacture, performance, operation, functioning, and testing of shipboard incinerators and has been regularly revised to accommodate technological

developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the standard.

• ASTM F1387–19, Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings. This standard updates the 1993 edition currently incorporated by reference at § 56.30–25. The standard covers performance characteristics required for mechanically attached fillings used in piping and tubing systems. The changes made to the standard include updates to references, deleting cancelled United States Military Specifications and Standards, corrections to notes and tables, and clarifications on required testing.

• ASTM F1476–07 (Reapproved 2013), Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications. This standard reapproves the 2007 edition, which updated the 1995 edition incorporated by reference at § 56.30–35. The specification provides the performance characteristics and qualification tests required for gasketed mechanical couplings, including grooved-type mechanical couplings for grooved end pipe. The changes made to the standard in 2007 were editorial in nature, and with some changes to material testing and grading.

• ASTM F1548–01 (Reapproved 2018), Standard Specification for Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications. This standard reapproves the 2001 edition, which updated the 1994 edition incorporated by reference at § 56.30–35. It defines classification, materials, test requirements, inspection certification, marking and packing of fittings for use with gasketed mechanical couplings. The changes made to the standard in 1999 were editorial in nature, with some changes to material testing and grading.

• Compressed Gas Association (CGA) standard CGA S–1.2–2009, Pressure Relief Device Standards—Part 2—Portable Containers for Compressed Gases. The 1979 edition is currently incorporated by reference at § 54.15–10. This standard covers the recommended minimum requirements for pressure relief devices used on portable containers for compressed gases that comply with regulations of the U.S. Department of Transportation or the corresponding regulations of Transport Canada. It has been revised at least five times since 1979 to address advancements in technology and changes in U.S. and Canadian regulations.

• Standards of the Expansion Joint Manufacturers Association, Tenth Edition (2015). This edition replaces the 1980 edition currently incorporated in § 56.60–1. This standard specifies the design and manufacturing requirements for expansion joints, including metallic bellows type, used in piping systems to accommodate pipe movements due to temperature expansion/contraction, and slight misalignments in joined piping sections.

• Fluid Controls Institute Inc. (FCI), FCI 69–1, Pressure Rating Standard for Steam Traps, 2017. The 2017 edition replaces the edition currently incorporated at § 56.60–1. This standard covers the minimum design, fabrication, pressure rating and marking of pressure-containing housings for steam traps. Revisions to this document consist mainly of editorial changes and modifications to definitions.

• International Convention for Safety of Life at Sea (SOLAS), 1974 as amended. This standard is not currently codified within 46 CFR part 56 or part 58, though its applicability to passenger vessels on international voyages is mentioned in § 56.50–50(c)(2). However, the CFR codifies language taken directly from SOLAS in a number of places in Titles 33 and 46 CFR. Incorporating specific SOLAS regulations by reference, in § 56.50–50 for bilge systems and § 58.25–10 for steering gear, would allow for an alternative to the prescriptive technical requirements of the CFR. SOLAS is an international maritime treaty that sets minimum safety standards in the construction, equipment, and operation of merchant ships. This requires no updates, merely the adoption of a standard already in place in practice.

• IMO Resolution MEPC.244(66), Standard Specification for Shipboard Incinerators, 2014. This document is proposed for addition as an alternate method of compliance to the requirements for shipboard incinerators in § 63.25–9. IMO MEPC.244(66) is the IMO's updated standard for shipboard incinerator design, defining the engineering requirements and environmental air emissions limits for ship incinerators.

• IMO Resolution MSC.337(91), Code on Noise Levels on Board Ships, 2012. This document replaces the older IMO Resolution A.468(XII), Code on Noise Levels on Board Ships, incorporated by reference in § 58.01–50. The Code on Noise Levels on Board Ships is intended to provide standards to prevent and mitigate the occurrence of hazardous noise levels on board ships, and to provide standards for an acceptable working and living environment for seafarers. The 2012 Code on Noise Levels on Board Ships reflects technology improvements and mandatory requirements not included in the older IMO Resolution, and is intended to provide the basis for a design standard.

• ISO 9096:2017(E), Stationary source emissions—Manual determination of mass concentration of particulate matter. This standard updates the 2003 edition currently incorporated by reference at § 63.25–9. This standard establishes methods for measurement of particulate matter concentration in waste gases. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the standard intent. It is the internationally accepted standard.

• ISO 13617:2019(E), Ships and marine technology—Shipboard incinerators—Requirements. This standard updates the 2001 edition currently incorporated by reference at § 63.25–9. This standard establishes design, manufacture, performance, operation, functioning and testing of incinerators. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the standard intent. It is the internationally accepted standard.

• ISO 15540:2016(E), Ships and marine technology—Fire resistance of non-metallic hose assemblies and non-metallic compensators—Test methods. This standard replaces the 1999 edition currently incorporated in § 56.60–25. It specifies the temperatures, duration, and pressure testing associated with fire tests used to qualify nonmetallic hose for use in ship piping systems.

• Manufacturers Standardization Society of the Valve and Fitting Industry, Inc. (MSS) standard MSS SP–6–2017, Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings. This standard updates the 2001 edition, incorporated by reference at §§ 56.25–10 and 56.60–1. This standard pertains to the finish of gasket contact faces of pipe flanges and connecting-end flanges of valves and fittings. The changes made to the standard were largely editorial in nature; however there are also some changes to definitions and material limitations.

• MSS SP–9–2013, Spot Facing for Bronze, Iron, and Steel Flanges. This standard updates the 2001 edition, incorporated by reference at § 56.60–1. It applies to the spot facing for U.S. customary bolting of pipe flanges in

bronze, gray iron, ductile iron, or settle. The changes made to the standard are editorial in nature, with some changes to material testing, design and grading.

• MSS SP–25 (ANSI/MSS SP–25–2018), Standard Marking System for Valves, Fittings, Flanges and Unions. The 1998 edition is currently incorporated by reference at § 54.01–25, while the 2001 edition is incorporated by reference at §§ 56.15–1, 56.20–5, and 56.60–1. This standard provides a marking system for new valves, fittings, flanges, and unions used in piping connections that include (but are not limited to) flanged, soldered, brazed, threaded, or welded joints. Markings are used for product identification and to assist in proper application. The standard has been revised three times since 1998 to address changes in industry practices.

• MSS SP–51–2012, Class 150LW Corrosion Resistant Flanges and Cast Flanged Fittings. This standard updates the 2003 edition, incorporated by reference at § 56.60–1. This standard establishes the design dimensions, tolerances, and pressure-temperature ratings for flanged steel fittings for both Metric and Imperial units.

• MSS SP–53–2012, Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components—Magnetic Particle Examination Method. This standard updates the 1995 edition, incorporated by reference at § 56.60–1. It provides methods and acceptance standards for magnetic particle examination of ferritic steel valves, flanges, fittings, and other piping components by use of dry magnetic powder or wet magnetic particles. The changes made to the standard are editorial in nature, with some changes to material testing, design and grading.

• MSS SP–55 (ANSI/MSS–SP–55–2011), Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components—Visual Method for Evaluation of Surface Irregularities. This standard updates the 2001 edition, incorporated by reference at § 56.60–1. The document describes common irregularities found in the castings of steel pipe fittings and flanges, as well as acceptable criteria for evaluating irregularities. The changes made to the standard are editorial in nature, with some changes to material testing, design and grading.

• MSS SP–58 (ANSI/MSS SP–58–2009), Pipe Hangers and Supports—Materials, Design, Manufacture, Selection, Application, and Installation. This standard updates the 1993 edition, incorporated by reference at § 56.60–1. MSS–SP–58 specifies the design criteria and minimum strength requirements for hangars used to mount piping systems to ship bulkheads and decks. The changes made to the standard are editorial in nature, with some changes to material testing, design and grading.

• MSS SP–61–2019, Pressure Testing of Valves. This standard updates the 2003 edition incorporated by reference at § 56.60–1. The document provides standardized technical requirements and acceptance criteria for the pressure testing of valves.

• National Fire Protection Association (NFPA) standard NFPA 302, Fire Protection Standard for Pleasure and Commercial Motor Craft, 2020 Edition. This standard provides the minimum requirements on boats for the prevention of fire and explosion, mitigation of carbon monoxide hazards, and life safety in case of fire. It updates the 1989 standard incorporated by reference at § 58.10–5. The updates to this standard are editorial in nature with minor technical changes, and changes in material testing and grading.

• SAE International (SAE) standard SAE J429 MAY2014, Mechanical and Material Requirements for Externally Threaded Fasteners. This standard updates the 1989 standard incorporated by reference at § 58.30–15. It covers the mechanical and material requirements for inch-series steel bolts, screws, studs, screws for screw-and-washer assemblies, and U-bolts.The updates to this standard are editorial in nature with minor technical changes, and changes in material testing and grading.

• SAE J1475 JUN2014, Hydraulic Hose Fittings for Marine Applications. This standard updates the 1996 edition currently incorporated in § 53.01–10. It covers the materials, design, and testing requirements for fittings used with flexible hose assemblies for use in ship piping systems. The updates to this document are primarily editorial in nature with no substantive change to technical requirements.

• SAE J1928 JUN2018, Devices Providing Backfire Flame Control for Gasoline Engines in Marine Applications. This standard updates the 1989 standard incorporated by reference at § 58.10–5. It covers the minimum requirements for design, construction, and testing of devices to prevent the propagation of backfire flame from a gasoline engine to the surrounding atmosphere. The updates to this standard are editorial in nature with minor technical changes, and changes in material testing and grading.

• SAE J1942 MAR2019, Hose and Hose Assemblies for Marine Applications. This standard updates the 1997 edition currently incorporated in § 56.60–25. It defines the design and testing requirements, including fire tests, for non-metallic flexible hose assemblies used in shipboard piping systems. Changes to this standard are administrative in nature, including updated testing frequency and record retention requirements.

• Underwriters Laboratories (UL) standard UL 174, Standard for Safety, Household Electric Storage Tank Water Heaters, Eleventh Edition, 2004 (reapproved in 2016). The 1996 edition is currently incorporated by reference at §§ 53.01–10 and 63.25–3. This standard contains requirements and non-mandatory guidance for household electric storage tank water heaters. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the intent of the standard. Incorporating the latest edition ensures compliance with current industry practices.

• UL 296, UL Standard for Safety Oil Burners, 11th Edition (''2017 UL 296''). This standard updates the 1993 edition currently incorporated by reference at § 63.15–5. This standard establishes requirements for oil burners intended for firing appliances and devices such as boilers, central, floor, wall, and special furnaces, storage tank water, air, and direct-fired air heater units. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the standard intent. It is the internationally accepted standard.

• UL 343, UL Standard for Safety Pumps for Oil-Burning Appliances, 2008. This standard updates the 1997 edition currently incorporated by reference at § 63.15–3. This standard establishes requirements for pumps intended for use as part of oil-burning appliances or installed in fuel-oil piping systems serving equipment. It has been regularly revised to accommodate technological developments, to address administrative requirements, to incorporate interpretations, and to clarify the standard intent. It is the internationally accepted standard.

• UL 1453, Standard for Safety, Electric Booster and Commercial Storage Tank Water Heaters, Sixth Edition, 2016. This standard would replace the 1995 standard, currently incorporated by reference at §§ 53.01–10 and 63.25–3. This standard contains requirements for electric booster water heaters, electric commercial storage tank water heaters, and remote control assemblies for such heaters, rated 600 volts or less, that are over 120 gallons

(454 L) in capacity, rated over 12 kilowatts, or are equipped with one or more temperature regulating controls permitting water temperature of more than 85°C (185 °F). The 2016 edition provides minor technical changes and has been edited for clarity.

C. Standards Previously Approved for Incorporation by Reference

The following standards were previously approved for incorporation by reference and are included in the proposed regulatory text because either the current format of the reference does not comply with current OFR requirements or the proposed text is a revision that includes an existing reference to the standard. We do not propose to change the existing IBR approval.

- ASME B36.19M–2004 Stainless Steel Pipe, October 25, 2004 (''ASME B36.19M''), IBR approved for §§ 56.07–5 and 56.60–1.
- IMO A.467(XII), Guidelines for Acceptance of Non-Duplicated Rudder Actuators for Tankers, Chemical Tankers and Gas Carriers of 10,000 Tons Gross Tonnage and Above But Less Than 100,000 Tonnes Deadweight, 1981 (''IMO A.467(XII)''), IBR approved for § 58.25–60.
- IMO Resolution A.753(18) Guidelines for the Application of Plastic Pipes on Ships, adopted on 4 November 1993 (''IMO Resolution A.753(18)''), IBR approved for § 56.60–25.
- IMO Resolution MEPC.76(40), Standard Specification for Shipboard Incinerators (Sep. 25, 1997) (''IMO MEPC.76(40)''), IBR approved for § 63.25–9.
- IMO Resolution MSC.313(88), Amendments to the Guidelines for the Application of Plastic Pipes on Ships, adopted 26 November 2010 (''IMO Resolution MSC.313(88)''), IBR approved for § 56.60–25.
- The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Annexes I, II, III, and V (1978) (''IMO MARPOL 73/78''), IBR approved for § 63.25–9.
- ISO 10396, Stationary source emissions—Sampling for the automated determination of gas emission concentrations for permanently-installed monitoring systems, Second edition (Feb. 1, 2007) (''ISO 10396''), IBR approved for § 63.25–9.
- MSS SP–45–2003, Bypass and Drain Connections, 2003 (''MSS SP–45''), IBR approved for §§ 56.20–20 and 56.60–1.

D. Section by Section Analysis of Proposed Changes to the Regulatory Text

In addition to updating existing standards incorporated by reference, adding new standards, and removing obsolete standards, we propose to modify technical regulatory text in the following sections of Subchapter F. For the convenience of the reader, the list below excludes purely stylistic revisions and corrections of drafting errors.

Part 50—General Provisions

Section 50.05–5 Existing Boilers, Pressure Vessels or Piping Systems

Modifying paragraph (b) to eliminate redundant text and more clearly describe the requirements for recalculating the maximum allowable working pressure.

Section 50.05–20 Steam-Propelled Motor Boats

Replacing the words ''motor boats'' with the more current and universally used ''vessels''.

Section 50.10–23 Marine Safety Center

Modifying the contact information for the MSC and the details for electronically submitting documents.

Section 50.20–5 Procedures for Submittal of Plans

Modifying the procedures for submitting plans to the Coast Guard by eliminating the requirements in paragraph (b) for plans to be submitted in triplicate, since most plans are electronically submitted, and by deleting unnecessary detail in paragraph (c).

Section 50.20–10 Number of Copies of Plans Required

Deleting this section. Submittal of plans is adequately addressed in § 50.20–5.

Section 50.20–15 Previously Approved Plans

Deleting the unnecessary text ''(including work accomplished under a different contract)'' in paragraph (a).

Section 50.20–30 Alternative Materials or Methods of Construction

Modifying paragraph (a) to include the word ''materials'' and deleting paragraph (b). These changes improve the clarity of the section.

Section 50.25–1 General

Deleting paragraph (e) as unnecessary because nonmetallic flexible hoses, including those intended for hydraulic service, are adequately addressed in § 56.60–25.

Section 50.25–7 Testing of Products Required To Be Certified in Presence of Marine Inspector

Deleting paragraphs (c) and (d) as unnecessary. When specific testing conditions are required, they are specified in the applicable standards or regulations.

Part 52—Power Boilers

Replacing the words ''boiler pressure vessel code'' with ''BPVC'' throughout all of part 52, as BPVC is recognized as the appropriate acronym for the ASME Boiler Pressure Vessel Code.

Section 52.01–52.25 Power Boilers

Modifying various paragraphs to delete text already addressed in ASME BPVC.

Section 52.01–3 Definitions

Deleting definitions listed in this section but not currently used in Part 52 and not needed going forward, as there is no need to define a term if it is not used later in the regulatory text. Deleted terms include: *High temperature water boiler, packaged boiler, Fired steam boiler, Hybrid boiler, Shell, Heads, Dished heads, Stayed heads, Water wall, Header, Domes, Steam chimneys, Corrugated furnace, Plain furnace, Combustion chamber, Separate combustion chamber, Common combustion chamber, Crown or top plate, Curved bottom plate, Combustion chamber tube sheet, Combustion chamber back sheet, Seamless tube, Electric resistance welded tube, Stay tube, Tube sheet, Ligament, Longitudinal ligament, Circumferential ligament, Diagonal ligament, Stays and supports, Solid screw staybolt, Welded collar, Hollow screw staybolt, Flexible staybolt, Sling stay, Crowfoot, Crowfoot stay, Diagonal stay, Gusset stay, Dog stay, Girder, Structural stiffeners, Reinforcement, Pressure loaded pilot actuated safety valve, Spring loaded pilot actuated safety valve, Spring loaded pilot valve, Relief valve, Safety relief valve, Conventional safety relief valve, Balanced safety relief valve, Internal spring safety relief valve, Power actuated relief valve, Breaking pin device, Shear pin device, Frangible disk device, Bursting disk device, Feed valve, Salinometer cocks, Expanding, Beading, Bell mouthing, Telltale hole, Openings, Pressure, Absolute pressure, Internal pressure,* and *External pressure.* And, deleting Figure *52.01–3—Acceptable Types of Boiler Stays.* Figure *52.01–3* is not necessary, as the ASME BPVC

adequately defines the requirements for boiler stayed surfaces.

Section 52.01–50 Fusible Plugs (Modifies A–19 Through A–21)

Modifying various paragraphs in this section to delete references and text already addressed by the ASME BPVC or that are otherwise outdated.

Section 52.01–55 Maximum Allowable Working Pressure

Modifying various paragraphs in this section to delete references and text already addressed by the ASME BPVC or that are otherwise outdated.

Section 52.01–90 Materials

Deleting this section. Materials for boiler design are adequately addressed by the ASME BPVC.

Section 52.01–105 Piping, Valves, and Fittings

Modifying various paragraphs in this section to delete references and text already addressed by the ASME BPVC or that are otherwise outdated.

Section 52.01–110 Water-Level Indicators, Water Columns, Gauge-Glass Connections, Gauge Cocks, and Pressure Gauges

Modifying various paragraphs in this section to delete references and text already addressed by the ASME BPVC or that are otherwise outdated.

Section 52.01–130 Installation

Modifying various paragraphs in this section to delete references and text already addressed by the ASME BPVC or that are otherwise outdated.

Section 52.25–3 Feedwater Heaters (Modifies PFH–1)

Modifying various paragraphs in this section to delete references and text already addressed by the ASME BPVC or that are otherwise outdated.

Part 53—Heating Boilers

Replacing the words ''boiler pressure vessel code'' with ''BPVC'' throughout part 53, as BPVC is recognized as the appropriate acronym for the ASME Boiler Pressure Vessel Code.

Section 53.01–10 Service Restrictions and Exceptions (Replaces HG–101)

Modifying paragraph (d) to remove exact temperature requirements and retaining a temperature range that would benefit industry.

Modifying paragraph (e)(1) to provide correct citation for the ASME BPVC stamping and provide cites to the IBR.

Part 54—Pressure Vessels

Replacing the words ''boiler pressure vessel code'' with ''BPVC'' throughout all of part 54, as BPVC is recognized as the appropriate acronym for the ASME Boiler Pressure Vessel Code.

Section 54.01–1 Incorporation by Reference

Modifying paragraphs (b), (d), and (e) to update the addresses for the American Society of Mechanical Engineers (ASME), the Compressed Gas Association (CGA), and the Manufacturers Standardization Society of the Valve and Fittings Industry (MSS), respectively.

Section 54.01–15 Exemptions From Shop Inspection Plan Approval (Modifies U–1(c)(2))

Deleting paragraph (a)(3)(i) because this section deals with internal pressure and the reference cited deals with external pressure.

Section 54.01–18 Plan Approval

Editing paragraph (a) to provide reference to new proposed paragraph (c).

Adding paragraph (c) to identify which plans for Class I, II, and II pressure vessels are not required to be submitted for approval.

Section 54.10–3 Marine Inspectors (Replaces UG–90 and UG–91, and Modifies UG–92 Through UG–103)

Editing the section heading to make it easier to find the regulation requiring stamping of the Coast Guard Symbol. The requirement for use of the Coast Guard Symbol on pressure vessels is often misunderstood.

Modifying paragraph (b) to identify when shop inspection is required. Part 54 refers to shop inspection of pressure vessels under construction in several locations, but the term is not used here.

Adding new paragraph (c), redesignating existing paragraph (c) as new paragraph (d), and removing the requirement for stamping with the Coast Guard Symbol. The requirement for use of the Coast Guard Symbol on pressure vessels is often misunderstood. By applying the symbol, the marine inspector is documenting that the pressure vessel meets Coast Guard requirements for pressure vessels on ships. Adding a paragraph clarifies which pressure vessels do not require stamping.

Section 54.10–20 Marking and Stamping

Modifying paragraph (a)(2) to clarify numbering requirements. The requirement for Coast Guard numbering of pressure vessels is often misunderstood. Numbering is only required when the Coast Guard has inspected the pressure vessel during construction (shop inspection).

Part 56—Piping Systems and Appurtenances

Section 56.07–5 Definitions

Clarifying the definition for ''piping schedule'' and deleting the definition for ''plate flange,'' as it does not require a definition.

Section 56.07–10 Design Conditions and Criteria (Modifies 101–104.7)

Modifying paragraph (b) by deleting the last sentence within the parentheses. It is not necessary to refer to definitions in part 52 for this paragraph.

Modifying paragraph (d) by deleting text that was inadvertently repeated.

Modifying paragraph (e) by removing references to specific paragraphs and instead referring to the entire subpart.

Section 56.15–1 Pipe Joint Fittings

Removing text in paragraph (c)(2) that is already adequately addressed by the incorporated ASME industry standard.

Section 56.15–5 Fluid-Conditioner Fittings

Deleting text in paragraph (c), nonstandard fluid conditioner fittings, that is already adequately addressed by paragraph (b); generally, fluid conditioner fittings must meet the requirements of this section regardless of whether they are 'standard' or 'nonstandard', and must be appropriate for the fluid contained, and the temperature and pressure of the system. In addition, with advancements in manufacturing, there is no need to reference part 54 (pressure vessels), for fluid conditioner fittings in current paragraphs (c) and (d).

Section 56.20–1 General

Removing text that is redundant and that can be adequately replaced by the incorporated ASME standard.

Section 56.20–9 Valve Construction

Modifying paragraphs (a), (b), (c), (e), and (g) to reflect advancements in valve design technology and to remove text adequately addressed already by the incorporated ASME standard.

Section 56.20–15 Valves Employing Resilient Material

Deleting text that is no longer required and simplifying text to reflect current policy employed by the MSC to evaluate these types of valves. Overall, these valves are not required anywhere on ships, and this section only

delineates the requirements for when they are installed.

Section 56.25–10 Flange Facings

Removing paragraph (b) as no longer necessary.

Section 56.25–20 Bolting

Removing unnecessary text in paragraphs (b) and (c).

Section 56.30–5 Welded Joints

Removing text in paragraphs (c)(1), (c)(2) and (c)(3) as adequately addressed already by the incorporated ASME standard.

Section 56.30–10 Flanged Joints

Removing text adequately addressed already by the incorporated standards in part 56.

Section 56.30–20 Treaded Joints

Removing text adequately addressed already by the incorporated standards in part 56.

Section 56.30–30 Brazed Joints

Removing text adequately addressed already by the incorporated standards in part 56.

Section 56.30–40 Flexible Pipe Couplings of the Compression or Slip-On Type

Removing text in paragraphs (b) and (c) that is no longer necessary or is otherwise adequately addressed already by the incorporated standards in part 56.

Section 56.35–10 Nonmetallic Expansion Joints

Removing the reference to part 50, as the appropriate standards are listed already in this part.

Section 56.35–15 Metallic Expansion Joints

Removing the reference to part 50, as the appropriate standards are listed already in this part.

Section 56.50–1 General

Deleting text in paragraphs (a), (b), (d), (g), and (i) that is unclear or outdated and no longer necessary.

Section 56.50–15 Steam and Exhaust Piping

Deleting text in paragraphs (b), (c), (f), (g), (j), and (k) that is unclear or outdated and no longer necessary.

Section 56.50–20 Pressure Relief Piping

Deleting text not necessary to the intent of the regulation.

Section 56.50–25 Safety and Relief Valve Escape Piping

Deleting text in paragraphs (a), (c), and (d) that is outdated or redundant.

Section 56.50–30 Boiler Feed Piping

Deleting text in paragraphs (b), (c), and (d) that is outdated or unclear and no longer necessary.

Section 56.50–35 Condensate Pumps

Deleting text that is outdated and no longer necessary.

Section 56.50–40 Blowoff Piping

Deleting text in paragraphs (b) and (d) that is outdated or redundant and no longer necessary.

Section 56.50–45 Circulating Pumps

Deleting text in paragraph (d) that is outdated or unclear.

Section 56.50–50 Bilge and Ballast Piping

Modifying paragraph (a) to consider ships that meet SOLAS requirements for bilge systems as equivalent to this section.

Deleting text in paragraphs (a), (b), (c), (d), (f), (h), (j), and (k) that is outdated.

Section 56.50–55 Bilge Pumps

Modifying paragraph (c) to add a pump capacity alternative formula.

Section 56.50–57 Bilge Piping and Pumps, Alternative Requirements

Deleting this entire section as outdated, as it contains cross-references to sections already removed from the CFR (§§ 171.075 and 171.082).

Section 56.50–60 Systems Containing Oil

Deleting or modifying text in paragraphs (a), (b), (c), (d), (m), and (n) that is outdated, or unclear.

Section 56.50–65 Burner Fuel-Oil Service Systems

Deleting or modifying text in paragraphs (a) and (b) that is outdated, unclear, or adequately addressed already by standards incorporated in this part.

Section 56.50–70 Gasoline Fuel Systems

Deleting or modifying text in paragraphs (b), (c), (d), (e), and (g) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.50–75 Diesel Fuel Systems

Deleting or modifying text in paragraphs (a) and (b) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.50–80 Lubricating-Oil Systems

Deleting or modifying text in paragraphs (a), (d), and (h) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.50–85 Tank-Vent Piping

Deleting or modifying text in paragraphs (a) and (b) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.50–90 Sounding Devices

Deleting or modifying text in paragraphs (a), (b), (c), (d), and (e) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.50–95 Overboard Discharges and Shell Connections

Deleting text in paragraphs (a), (b), (c), (d), (e), (f), (h), and (i) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.50–105 Low-Temperature Piping

Deleting text in paragraph (a) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.60–1 Acceptable Materials and Specifications

Adding ASTM F1155 as a reference in paragraph (a) for material standards applicable to certain marine engineering piping systems.

Section 56.60–5 Steel

Modifying paragraph (a) to align the CFR with the temperature requirements of the incorporated ASME standard.

Section 56.70–5 Material

Deleting text in paragraph (b) that is outdated, and aligning text with incorporated ASME standard.

Section 56.70–10 Preparation

Deleting text in paragraphs (a) and (b) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.70–15 Procedure

Deleting text in paragraphs (a), (b), (c), (d), and (g) that is outdated, unclear, unenforceable, or adequately addressed already by incorporated standards in this part.

Section 56.80–5 Bending (Modifies 129)

Deleting text that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.85–15 Postheat Treatment

Deleting text in paragraphs (a), (b), and (d) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.90–5 Bolting Procedure

Deleting text in paragraph (a) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Section 56.90–10 Threaded Piping

Deleting paragraph (c) as outdated and unnecessary.

Section 56.95–1 General

Modifying paragraph (b) for clarity.

Section 56.97–1 General

Modifying paragraph (b) for clarity.

Section 56.97–25 Preparation for Testing

Modifying paragraphs (b) and (d) for clarity.

Section 56.97–38 Initial Service Leak Test

Modifying paragraph (a) for clarity.

Section 56.97–40 Installation Tests

Deleting text in paragraph (a) that is outdated, unclear, or adequately addressed already by incorporated standards in this part.

Part 57—Welding and Brazing

Replacing the words ''boiler pressure vessel code'' with ''BPVC'' throughout part 57, as BPVC is recognized as the appropriate acronym for the ASME Boiler Pressure Vessel Code.

Section 57.01–1 Qualifications and Production Tests

Modifying the text in paragraph (a) to reflect updates in section numbering of the BPVC.

Section 57.02–1 Incorporation by Reference

Modifying paragraph (a) to update the address for the American Society of Mechanical Engineers (ASME).

Amending table 57.02–1(a) to reflect updates in the section number of the BPVC.

Section 57.02–2 Adoption of Section IX of the ASME Code

Modifying paragraph (a) to update and clarify the information provided in the section.

Modifying paragraph (a)(1) to delete unnecessary references to parts of the subchapter that have been removed.

Section 57.02–3 Performance Qualifications Issued by Other Agencies

Deleting references to ASME BPVC paragraphs PG–91, N–612, HG–515.2 and UG–91 in paragraph (a) as unnecessary.

Section 57.03–1 Procedure Qualifications—General Requirements

Updating paragraph (a)(1) to reflect changes in the standard.

Section 57.06–1 Production Test Plate Requirements

Updating paragraph (c) to reflect current name of the section of the code.

Part 58—Main and Auxiliary Machinery and Related Systems

Section 58.01–20 Machinery Guards

Updating paragraph for clarity.

Section 58.01–50 Machinery Space, Noise

Updating incorporated reference to reflect updated IMO Resolution (Noise Code).

Section 58.05–1 Material, Design and Construction

Updating the reference from ABS Steel Vessel Rules to ABS Marine Vessel Rules.

Section 58.16–5 Definition

Updating paragraph for clarity and to correct grammar.

Section 58.16–7 Use of Liquefied Petroleum Gas

Updating incorrect CFR reference.

Section 58.16–10 Approvals

Deleting the requirement in paragraph (a) that gas-consuming appliances be ''of a type approved'' by the Commandant. The requirement that the Commandant specifically ''approve'' all types of gas-consuming appliances is not necessary, given that appliances must already be tested and listed by third party laboratories and meet the additional requirements of Subpart 58.16.

Changing the word ''approved'' to ''accepted'' in paragraph (c). Because this paragraph refers to another government agency's requirements for safety-relief devices, and shipboard appliance installations are reviewed case by case, ''acceptance'' allows for more flexibility than ''approval'' when evaluating the overall installation for compliance.

Section 58.16–30 Operating Instructions

Updating paragraph (k) for clarity.

Section 58.16–35 Markings

Deleting text in paragraph (a) that is redundant with paragraphs (b) and (c) of same section.

Section 58.25–5 General

Making an editorial correction to ensure ''control system'' is a separate definition from ''auxiliary steering gear''.

Section 58.25–10 Main and Auxiliary Steering Gear

Adding SOLAS regulations plus class rules as an equivalent standard.

Section 58.25–20 Piping for Steering Gear

Eliminating redundant references to part 56 of this chapter.

Section 58.25–25 Indicating and Alarm Systems

Deleting requirements in current paragraph (e) that are redundant with other paragraphs in same section.

Section 58.25–40 Arrangement of the Steering Gear Compartment

Deleting this section as unnecessary.

Section 58.25–60 Non-Duplicated Hydraulic Rudder Actuators

Amending this section for clarity.

Section 58.25–75 Materials

Deleting paragraph (b) of this section as unnecessary.

Section 58.25–85 Special Requirements for Tank Vessels

Deleting certain text in paragraph (c)(1) and (2) of this section as unenforceable.

Deleting paragraph (g), because this paragraph is applicable only to tank vessels of 40,000 gross tons or more constructed before 1984. Virtually all of those vessels have been phased out of service due to the pollution prevention requirements in 33 CFR 157 for ''double hulls'' on tank vessels.

Section 58.30–1 Scope

Deleting certain text in paragraph (a) as not applicable.

Section 58.30–15 Pipe, Tubing, Valves, Fittings, Pumps, and Motors

Deleting certain text in paragraphs (b) and (d) as redundant, given the incorporation of industry standards.

Section 58.30–25 Accumulators

Deleting certain text in paragraphs (a) and (c) for clarity.

Section 58.50–1 General Requirements

Modifying text to remove allowance for gasoline as a fuel for vessels constructed before 1935.

Part 59—Repairs to Boilers, Pressure Vessels and Appurtenances

Section 59.10–1 Scope

Modifying paragraphs (b) and (c) to eliminate unnecessary requirements and to provide clarity for welding repairs.

Section 59.10–5 Cracks

Modifying paragraphs (d) and (h) to eliminate unnecessary requirements and to provide clarity for repair of cracks in boiler and pressure vessels.

Section 59.10–20 Patches in Shells and Tube Sheets

Removing text in paragraphs (a) and (b) to provide clarity.

Section 59.15–1 Furnace Repairs

Modifying paragraphs (a), (b), (c) and (e) to eliminate unnecessary requirements and to provide clarity for furnace repairs.

Part 61—Periodic Tests and Inspections

Section 61.03–1 Incorporation by Reference

Modifying paragraph (b) to update the name and address of ASTM International.

Section 61.05–10 Boilers in Service

Eliminating unnecessary and outdated text regarding boiler inspections from paragraphs (a) and (f).

Section 61.10–5 Pressure Vessels in Service

Modifying paragraph (g) to provide inspection compliance options, in lieu of the hydrostatic test currently required by this paragraph, for bulk storage tanks containing refrigerated liquefied CO_2 for use aboard a vessel as a fire-extinguishing agent. The inspection options consist of performing a hydrostatic test or having the option of an internal inspection. This is further explained in the regulatory language.

Part 62—Vital System Automation

Section 62.05–1 Incorporation by Reference

Modifying paragraph (b) to update the address for the American Bureau of Shipping (ABS).

Section 62.35–50 Tabulated Monitoring and Safety Control Requirements for Specific Systems

Deleting the requirements for main propulsion boiler supply casing and uptakes, burner flames, control power, and burner valves in Table 62.35–50. These components are required to comply with the same requirements in Section 4–9–6 of the ABS Marine Vessel Rules (2020), which is proposed to be referenced in this table.

Modifying the requirements for ship service generators in Table 62.35–50. Currently, compliance with the ABS Steel Vessel Rules for propulsion boilers and propulsion diesel engines is required. The requirements for auxiliary generators in Section 4–9–6 of the ABS Marine Vessel Rules (2020) are referenced instead because this section of the ABS Rules is more directly applicable to generators.

Deleting the requirements for generators to comply with §§ 111.12–1 (b) and (c), and parenthetical items 6 and 7 in Table 62.35–50.

Section 62.50–30 Additional Requirements for Periodically Unattended Machinery Plants

Revisions are made to paragraphs (c), (d), (h), and (k) to reflect correct verbiage and to provide clarity.

Part 63—Automatic Auxiliary Boilers

Section 63.01–3 Scope and Applicability

Amending paragraph (b) to remove language regarding electric cooking equipment, electric air heaters, and electric oil immersion heaters. The requirements for these electric appliances are covered in 46 CFR Subchapter J Part 111 of the CFR and do not belong in Part 63 for Automatic Auxiliary Boilers.

Section 63.05–1 Incorporation by Reference

Modifying paragraphs (b) and (c) to update the name and address for the ANSI and ASME, respectively.

Section 63.10–1 Test Procedures and Certification Report

Updating address and options for item submittals.

Section 63.25–9 Incinerators

Modifying paragraph (a) to update address and options for application for type approval of shipboard incinerators.

Modifying paragraph (b) to clarify and update requirements for testing prior to granting type approval.

Adding IMO MEPC.244(66) as an accepted design standard for incinerators.

Part 64—Marine Portable Tanks and Cargo Handling Systems

Replacing the words ''ASME Code'' with ''ASME BPVC'' throughout part 64, as BPVC is recognized as the appropriate acronym for the ASME Boiler Pressure Vessel Code.

Section 64.2 Incorporation by Reference

Modifying paragraph (b) to update the address for the ASME.

V. Incorporation by Reference

Material proposed for incorporation by reference appears in 46 CFR parts 50, 52, 53, 54, 56, 57, 58, 59, 61, 62, 63, and 64 and is summarized in section IV.B of this preamble. For information about how to view this material, see the **ADDRESSES** section of this preamble. Copies of the material are also available from the sources listed in 46 CFR parts 50, 52, 53, 54, 56, 57, 58, 59, 61, 62, 63, and 64. Before publishing a binding rule, we will submit this material to the Director of the Federal Register for approval of the incorporation by reference.

VI. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and Executive Orders related to rulemaking. A summary of our analyses based on these statutes or Executive Orders follows.

A. Regulatory Planning and Review

Executive Orders 12866 (Regulatory Planning and Review) and 13563 (Improving Regulation and Regulatory Review) direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distributive impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying costs and benefits, reducing costs, harmonizing rules, and promoting flexibility.

The Office of Management and Budget (OMB) has not designated this proposed rule a significant regulatory action under section 3(f) of Executive Order 12866. Accordingly, OMB has not reviewed it.

The Coast Guard proposes to update subchapter F of Title 46 of the CFR. This proposed rule would align the standards on U.S.-flagged vessels of vessel types of subchapter F with current industry practices to ensure that regulatory standards are current, and the changes would harmonize regulatory requirements with current industry standards. The majority of the updates simply would incorporate by reference the more recent versions of the same standards with little or no substantive

change. In some cases, the more recent editions reflect more modern technologies, terminology, and practices. The updates also would correct regulatory language and remove redundant and outdated references. The Coast Guard believes there are no additional costs associated with this proposed rule. The Coast Guard estimates this rule will save the regulated public and federal government approximately $9.787 million over the 10-year period of analysis at 7% in 2020 dollars.

The following regulatory analysis (RA) provides an evaluation of the economic impacts associated with this proposed rule. Table 2 provides a summary of the proposed rule's costs and benefits.

TABLE 2—SUMMARY OF THE PROPOSED RULE'S IMPACTS

Category	Summary
Affected Population	Vessel owners and operators, shipyards, builders and manufacturers of vessels and vessel components, the Coast Guard (Marine Safety Center (MSC) and United States Coast Guard Commercial Regulations and Standards Directorate (CG–5PS)). Class societies and vessel insurers may have some interest.
Costs	None. The proposed rule would not increase costs of compliance for the regulated public or the Coast Guard because no additional requirements are being proposed.
Cost Savings (7-percent discount rate)	$9.787 million (10-year discounted cost savings), annualized cost savings: $1.385 million in 2020 dollars.
Unquantified Benefits	Clarity of regulatory intent through stylistic changes and corrections, harmonization of regulatory requirements with current industry standards, better utilization of Coast Guard human resources, compliance with Presidential Regulatory Reform Initiative (March 4, 1995).[2]

This proposed rule has two main goals. First, the Coast Guard intends it to update design standards that appear in the CFR by incorporating by reference more recent industry standards. Second, the proposed rule would provide clarity and simplify regulatory compliance for industry by removing obsolete regulations and revising current regulatory text, including the correction of errors.

Affected Population

The Coast Guard analyzed this rulemaking to determine the affected population and how the proposed rule would impact vessel owners and manufacturers.[3] The proposed revisions affect a variety of vessel owners and operators; including those owning cargo vessels, passenger vessels, nautical school vessels, tank vessels, and tank barges. Some potentially impacted vessel owners and operators include nonprofits and Tribal/State/local government entities.[4] Because the proposal impacts only new vessels or those undergoing major conversions, the Coast Guard estimates that fewer than 200 vessels would be impacted annually.[5]

An estimated 16,148 vessels owned by 6,437 owners and operators would be impacted potentially, but the vessel owners and operators would be impacted directly only if they procured a new vessel or engaged in a major conversion of an existing vessel under conditions as specified in the proposal. Large self-propelled vessels, which are covered by more provisions of Subchapter F than smaller vessels and barges, would be more likely to be impacted. The following table details those vessels potentially impacted by the proposed rule.

TABLE 3—U.S.-FLAGGED VESSEL POPULATION SUBJECT TO 46 CFR SUBCHAPTER F

Subchapter F vessel category	Subchapter	Population
Freight Ship	I	1,563
Industrial Vessel	I	3,748
In-service—Inspected	I	2
Mobile Offshore Drilling Unit (MODU)	I–A	110
Offshore Supply Vessel (OSV)	L	1,354
Oil Recovery	I	556
Passenger (Inspected) (≥ 100 gross tons)	H	132
Passenger Barge (Inspected)	I	217
School Ships and Research Ships	R and U	141
Tank Barge	O–I	7,945
Tank Ship	D	380
Total		16,148
U.S.-flagged vessels (subchapter F only) (as of April 24, 2020).		

Note: These data are based on Coast Guard data found in the Marine Information for Safety and Law Enforcement (MISLE) database.

[2] The proposed rule would continue the Coast Guard's response to the Presidential Regulatory Reform Imitative of March 4, 1995, and directives including Executive Orders 12866 and 13563 that are intended to improve regulation and the regulatory process. The provisions of this proposed rule would remove outdated regulations, revise current regulatory text, and incorporate by reference more recent national and international industry standards into the CFR. The Coast Guard recognizes the significant technological advances technology and equipment which is used or carried on vessels. As a result, this proposed rule would encourage the use of newer equipment and promote adherence to modern standards in the industry.

[3] Class societies and vessel insurers may have interest in the rule. However, no actions are required by them directly or indirectly as a result of the rule.

[4] Public vessels are excluded.

[5] Based on input from Coast Guard subject matter experts in the Directorate of Commercial Regulations and Standards who are tasked with relevant duties.

The proposed rule also would impact businesses involved in vessel manufacturing. There are approximately 1,022 shipyards and manufacturers of vessels or vessel components in the affected population; however, vessel manufacturers are believed to already be in voluntary compliance with the proposed changes. In addition, the proposal would impact the Coast Guard and its staff in the MSC and CG–5PS. An estimated six civilian engineers and six uniformed personnel potentially would be impacted.

Summary of Changes

Generally, the Coast Guard proposes to update codified references to standards incorporated by reference in subchapter F with their more recent editions. These more recent standards would provide more clarity and specificity than the outdated standards they would be replacing. More specifically, the Coast Guard segments the effect of the proposed changes into three categories: (1) Editorial changes to the CFR; (2) technical updates to standards incorporated by reference; and (3) compliance alternatives to standards incorporated by reference. Based on data from industry, the Coast Guard assumes industry already uses the more recent standards referenced in the proposal. Table 4 summarizes the regulatory changes.

First, for the proposed changes to update standards incorporated by reference, this proposed rule would make editorial changes to subchapter F that include such items as the removal of outdated terminology and the consolidation of text. These proposed changes would include 46 CFR parts 50, 52, 53, 54, 56, 57, 58, 59, 61, 62, 63 and 64. The Coast Guard expects these changes would have no costs, cost savings, or benefits.

Second, this proposed rule updates standards incorporated by reference throughout subchapter F. Because no resources are required, and because they have been adopted voluntarily already by manufacturers, the Coast Guard expects these changes would have no cost.

Third, this proposed rule would amend the regulatory text in 46 CFR 58.10–5(d)(1) and 61.10–5(g) that impacts compliance alternatives for vessel owners and operators. The changes reflect the proposed addition of a compliance alternative and the proposed removal of a compliance alternative. This proposed change results from the discontinuation of a standard incorporated by reference that is the basis of the compliance alternative. (Please see the preamble in the proposed changes to ''Part 61—Periodic Tests and Inspections,'' and further detailed in the Cost Savings portion of this RA.) These proposed changes provide regulatory flexibility for the regulated public. No additional cost would be incurred, and the addition of a compliance alternative may save money. The proposed rule's replacement of a compliance alternative would offer an option which has lower costs associated with it. This would be a cost savings for vessel owners if they choose to use this compliance alternative.

The proposed rule would create consistency between Coast Guard regulations and national and international standards through incorporation by reference, provide options with alternative standards, eliminate obsolete standards, and clarify the existing requirements through the changes proposed in 46 CFR subchapter F. Table 4 lists these proposed changes by type of change. Readers may consult the preamble of this NPRM for a general summary of the proposed changes.

TABLE 4—REGULATORY CHANGES OF THE PROPOSED RULE BY TYPE OF CHANGE

Category	Description	Affected sections in 46 CFR[6]	Cost impact (cost, cost savings, and benefits)
Editorial Changes ...	General editorial changes.	§§ 50.05–5(b), 50.05–20, 50.05–20(a), 50.10–23, 50.20–5(b), 50.20–5(c), 50.20–10(a), 50.20–15(a), 58.16–30(k)[7].	No cost or cost savings. These include removal of outdated or redundant terminology, correction of missing words, and consolidation and clarification of text.
	Editorial changes for regulatory clarification.	§§ 54.01–18(a), 54.10–3,54.10–3(b), 54.10–3(c), 54.10–20(a)(2).	No cost or cost savings. No change in technical content. This is a clarification of the regulations.
	Editorial changes with deletions.	§§ 50.05–5(b), 62.35–50, 62.35–50, 63.01–3 (b), 58.10–5(d)(1).	No cost or cost savings. These provisions would remove obsolete standards and outdated terminology.
	Updated standards to newer editions.	§§ 52.01–1(b); 53.01–1(b)(1); 53.01–1(b)(2); 53.01–1(c)(1); 54.01–1(b)(1); 54.01–1(c)(1), 54.01–1(c)(2); 54.01–1(c)(3), 54.01–1(c)(2), 1(c)(3), 1(c)(4), 1(c)(5), –1(d)(1), –1(e)(1)[8].	No cost or cost savings. Incorporating the current edition simplifies regulatory compliance and ensures that the latest industry practices based on changes in technology are addressed and the highest possible level of safety is required.
Technical Changes	Standards with technological changes.	§§ 53.01–1(c)(1), –1(c)(2), –20, –1(b)(1), –1(c)(1), –1(d)(1), –1(d)(2), –1(e)(2).	No cost or cost savings. The proposed change would simplify regulatory compliance.
Regulatory Flexibility (Compliance Alternatives).	Newly proposed compliance alternatives.	§§ 56.50, 61.10–5(g),[9] 63.25	No cost, but potential cost savings. The change would offer flexibility for regulatory compliance which ultimately could save money for the vessel owner.
	Removal of compliance alternatives.	§§ 56.50, 58.10–5(d)(1)[10]	No cost or cost savings. The proposed change simplifies regulatory text to remove reference to a no longer existing IBR document and, by default, its availability as a compliance alternative.

Note: The Coast Guard may list the same citation of the CFR multiple times because it is proposing numerous changes to the same paragraph. These changes may include clarifications, deletions, or insertions of text.

Data Input for Calculations

This RA uses multiple data sources. To estimate the duration of tasks, the Coast Guard used previous OMB-approved collections of information. These collections of information were previously vetted publicly and provide guidance on estimates of tasks such as communicating information and education. The RA also uses estimates from Coast Guard subject matter experts.

[6] Please refer to the preamble and Table 1 for a complete accounting of affected paragraphs, including redesignations.

[7] This list is not exhaustive. Please see Table 1 for the full list.

[8] Please see Table 1 for complete list.

[9] The proposed change would give operators the option of undergoing an internal inspection every 10 years as opposed to requiring a hydrostatic test every 10 years.

[10] UL 1111 has been withdrawn and no longer exists; therefore, it can no longer be included as an option for regulation compliance.

To calculate wage rates, the Coast Guard used two publicly available sources for wage data: the U.S. Department of Labor Bureau of Labor Statistics (BLS) Occupational Employment Statistics and the Commandant Instruction entitled ''Reimbursable Standard Rates'' (commonly called Commandant Instruction U).[11] For positions outside the Coast Guard, the Coast Guard used publicly available data of the BLS Occupational Compensation Survey to estimate wage rates for positions that would be impacted by the proposed rule. For Coast Guard positions, the Coast Guard used publicly available and publicly vetted information found in Commandant Instruction U and the U.S. Office of Personnel Management pay chart for the Washington, DC locality pay area for 2020 [12] to estimate the wage data.

From the wage data obtained in the previous step, the Coast Guard used a loaded labor rate [13] to estimate the actual cost of labor to employers. The load factor (or benefits multipliers) for the regulated public and Coast Guard civilian workers was obtained using BLS data. To account for an employee's non-wage benefits, the Coast Guard applied a load factor to the unloaded mean hourly wage rate; data of the BLS's ''Employer Cost for Employee Compensation'' database were used for the regulated public's wages.[14] The Coast Guard determined the load factor to be about 1.49, rounded. For Coast Guard civilian positions, the load factor was determined to be approximately 1.75, rounded.[15] For Coast Guard uniformed positions, the Coast Guard used data that already had applied the load factor, so such an adjustment was not necessary.[16] These figures were used to estimate the reasonable and customary average labor cost to employers. Table 5 displays the labor categories, the source of the wage rates, the total compensation, the wage rates, and the calculated load factor. We estimated the load factor for the applicable occupation category by dividing the total compensation by the hourly wage rate.

TABLE 5—LOADED WAGE FACTOR CALCULATION

Occupation category	Data source(s)	Total compensation	Wage and salaries	Loaded wage factor
All Workers, Transportation and Moving Materials.	BLS Employer Costs for Employee Compensation, All workers in Transportation and Materials Moving Occupations.	$31.76	$21.35	[17] 1.49
Federal workers, Professional Degree or Doctorate.	Congressional Budget Office Report ''Comparing the Compensation of Federal and Private Sector Employees, 2011 to 2015'' dated April 2017 [18].	51.90	29.70	1.75

The Coast Guard assumed a constant wage rate and a constant duration for tasks for the period of annualization.[19] Likewise, the estimates are based on 2020 dollars. Table 6 presents the estimated hourly loaded wage rates for the proposed rule.

Using the BLS ''Occupational and Employment Statistics'' database and May 2019 wage estimates, the unloaded mean hourly wage rate for marine engineers and naval architects (occupational code 17–2121) is $47.88.[20] The Coast Guard multiplied $47.88 by the load factor of 1.49 to obtain a loaded mean hourly wage rate of about $71.23 for this occupation. The hourly rate for a manager (occupational code 11–3051) [21] of $56.82 was estimated to be $84.52 after the load factor application.

For all provisions related to the Government, the Coast Guard used

[11] The Instruction is dated February 27, 2020, is numbered COMDTINST 7310.1U and commonly is called Commandant Instruction U. Enclosure 2 lists the relevant data; please see in-government wage data. The file is available at *https://media.defense.gov/2020/Mar/04/2002258826/-1/-1/0/CI_7310_1U.PDF*. This page was accessed on March 11, 2020. This page was last viewed on March 11, 2020. Commandant Instruction U provides fully loaded wage rates.

[12] *https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2020/DCB.pdf*.

[13] A loaded hourly wage rate is what a company pays per hour to employ a person, not the hourly wage an employee receives. The loaded hourly wage rate includes the cost of non-wage benefits (health insurance, vacation, etc.).

[14] To estimate the load factor, the Coast Guard used publicly available BLS data (*https://www.bls.gov/data/*). To recreate these calculations, go to the ''Databases, Tables & Calculators'' page, select the multi-screen data search feature for ''Employer Costs for Employee Compensation'' under ''Pay & Benefits.'' (Alternatively, a direct link can also be found at *https://data.bls.gov/cgi-bin/dsrv?cm*.) For total compensation, in the search field select ''Private industry workers,'' then ''Total compensation,'' ''Transportation and material moving occupations,'' ''All workers,'' ''All workers,'' ''United States (National),'' ''Cost of compensation (Cost per hour worked),'' and ''Not Seasonally Adjusted.'' For wages and salaries, perform the same steps except select ''Wages and salaries'' on the second screen. The series IDs for total compensation and wages and salaries are CMU2010000520000D and CMU2020000520000D, respectively. Using fourth quarter data for 2020, the Coast Guard divided the value for total compensation, $31.76, by wages and salaries, $21.35, to estimate a load factor of approximately 1.49 (rounded to the nearest tenth). Unrounded figures were used in calculations.

[15] Based on data from the Congressional Budget Office (*https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/52637-federalprivatepay.pdf*). The report provided estimates for total compensation for Federal workers at this educational level to be $51.90 per hour with wages of $29.70 per hour, in 2015 dollars. The estimated load factor comports with later data as reported by BLS (see further for details). Unrounded figures were used in calculations.

[16] See Commandant Instruction U (COMDTINST 7310.1U, February 27, 2020). Enclosure 2 lists the relevant data; please see in-government wage data. The file is available at *https://media.defense.gov/2020/Mar/04/2002258826/-1/-1/0/CI_7310_1U.PDF*. This page was accessed on March 11, 2020. This page was last viewed on March 11, 2020. Commandant Instruction U provides fully loaded wage rates.

[17] Rounded from 1.4875878.

[18] *https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/52637-federalprivatepay.pdf*. This page was last viewed on November 17, 2020. The load factor is found by taking the quotient of compensation to benefits as found on Table 2 and 3 of the report. Coast Guard used the figures for Federal workers with professional degree or doctorate. To verify the accuracy of this load factor estimate, the Coast Guard compared it with findings from an analysis of BLS total compensation and wage data. The load factor comports with the data analysis of BLS Employer Costs for Employee Compensation, All workers in Public Administration. The load factor was obtained from *https://www.bls.gov/web/ecec/ececqrtn.pdf* using Table 8 for public administration workers (4th Quarter 2020 data). The Coast Guard divided the value for total compensation, $51.54 by wages and salaries, or $29.54, to obtain a load factor of approximately 1.74 (rounded to the nearest tenth). Unrounded figures were used in calculations.

[19] Some tasks may take less time in the future due to technological advances. However, the Coast Guard has assumed no change in duration of tasks over the period of annualization.

[20] See *https://www.bls.gov/oes/2020/may/oes172121.htm*.

[21] See *https://www.bls.gov/oes/2020/may/oes113051.htm*.

publicly available data as found in Commandant Instruction U [22] to estimate wage rates for Coast Guard employees. Labor costs attributed to the Government are estimated for Coast Guard civilian and uniformed engineers and supervisors of CG–5PS and the MSC. Hourly loaded labor costs for civilians are estimated [23] for a GS–14 engineer at $115.51 and for a GS–15 engineering supervisor at $135.87. For uniformed engineers, the Coast Guard used an average of $91 [24] for engineers at the O–3 (Lieutenant) and O–4 level (Lieutenant Commander) because both would work on the task. The wage rate for a uniformed supervisory engineer is estimated to be $111 for an O–5 (Commander). These figures represent a wage rate with a fully-loaded labor factor of 1.85 for uniformed Coast Guard positions.[25] Table 6 presents a summary of the data used.

TABLE 6—LOADED HOURLY WAGE CALCULATION

[$2020] *

Category	Mean hourly wage data source(s) [26]	Mean hourly wage (a)	Load factor (b)	Loaded hourly wage (a × b = c)
Engineer	Marine Engineer and Naval Architect (17–2121) [27]	$47.88	1.49	$71.23
Supervisory Engineer	Engineering Managers (11–3051) [28]	56.82	1.49	84.52
Coast Guard Civilian Engineer (GS–14).	U.S. Office of Personnel Management (OPM) 2020 General Service (GS) Pay Tables [29].	66.10	1.75	115.51
Coast Guard Civilian Supervisor (GS–15).	OPM 2020 GS Pay Tables	77.75	1.75	135.87
Coast Guard uniformed engineer (O–3).	Commandant Instruction U [30] and 2020 Military Active & Reserve Component Pay Tables [31].			84
Coast Guard uniformed engineer (O–4).	Commandant Instruction U and 2020 Military Active & Reserve Component Pay Tables.			98
Average Uniformed Engineer in MSC.	As calculated by the average of the hourly wage rates of O–3 and O–4 uniformed engineers.			91
Coast Guard Officer (O–5)	Commandant Instruction U and 2020 Military Active & Reserve Component Pay Tables.			111

* Figures have been rounded to the nearest hundredth. Unrounded figures were used in calculations.

Costs

The Coast Guard estimates there are no costs associated with this proposed rule. The proposed rule does not require actions of manufacturers or vessel owners and operators. The proposal is not retroactive, and existing vessels are not required to be retrofitted.

This proposed rule would not require owners and operators to acquire any standards incorporated by reference; they would not need the standard in hand to be in compliance. Owners and operators only would need to look for evidence from manufacturers that vessels meet or exceed the standard before purchase; such evidence could be found in a contract for purchase or repair of a vessel or in product documentation such as a user guide or warranty information. For these reasons, the Coast Guard has not included a cost for the procurement of the newer standards for vessel owners.

The Coast Guard estimates that the regulated public (manufacturers) are currently in voluntary compliance with the requirements proposed by the rule based on manufacturer participation in the development of industry standards. When industry standards are promulgated, they undergo a process of review and comment by the industry. Input from manufacturers is key to developing new standards that consider the engineering capabilities of manufacturers. After the review and comment process, the newer standard is voted upon at the various governing bodies' committee meetings, and manufacturers are among those voting. For this reason, the Coast Guard

[22] Commandant Instruction U. Enclosure 2 (*https://media.defense.gov/2020/Mar/04/2002258826/-1/-1/0/CI_7310_1U.PDF*). This page was accessed on March 11, 2020. This page was last viewed on March 11, 2020. Commandant Instruction U provides fully loaded wage rates.

[23] The U.S. Office of Personnel Management (OPM) Office of Policy, Data and Oversight, 2020 GS Pay Tables (midpoint for each pay grade and the Washington-Baltimore-Arlington locality pay area). Please see *https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2020/DCB.pdf*. The data were viewed last on November 18, 2020.

[24] As found in Commandant Instruction U, the Coast Guard used data for the O–3 officer and O–4 officer, taking the average to estimate the wage rate for a uniformed engineer to work on the task. Both grade levels would work on the task so the Coast Guard used an average for this position.

[25] The loaded wage and derived load factor for uniformed positions was based on the Coast Guard's analysis of compensation and benefits of Coast Guard enlisted and commissioned personnel based on data found in *https://www.dfas.mil/militarymembers/payentitlements/Pay-Tables.html* and Commandant Instruction U. Data were posted on Dec. 30, 2019 and last updated January 27, 2020. This page was viewed last on February 20, 2020.

[26] To calculate the loaded wages, the Coast Guard used the Occupational Code 17–2121 (Marine Engineer and Naval Architect) for engineers, Occupational Code 11–3051 for supervisory engineers.

[27] *http://www.bls.gov/oes/2020/may/oes172121.htm*. The data were last accessed on May 25, 2021.

[28] *http://www.bls.gov/oes/2020/may/oes113051.htm*. The data were last viewed on May 25, 2021.

[29] The U.S. Office of Personnel Management (OPM) Office of Policy, Data and Oversight provides pay data for Federal employees. These data were obtained from the 2020 GS Pay Tables using midpoint for each pay grade and the Washington-Baltimore-Arlington locality pay area. Please see *https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/salary-tables/pdf/2020/DCB.pdf*. The data were viewed last on November 18, 2020.

[30] See Commandant Instruction U Enclosure 2. This estimate previously was used in past Coast Guard rulemakings including the proposed and final rules for Tankers—Automatic Pilot Systems in Waters Subject to 33 CFR parts 166 and 167 (USCG–2015–0926, RIN 1625–AC27). It also was used in the proposed rule for Revision of Crane Regulation Standards for Mobile Offshore Drilling Units, Offshore Supply Vessels, and Floating Outer Continental Shelf Facilities (RIN 1625–AB78, USCG–2011–0992) as found on *https://www.federalregister.gov/documents/2013/05/13/2013-11132/revision-of-crane-regulation-standards-for-mobile-offshore-drilling-units-modus-offshore-supply*. See **Federal Register**, May 13, 2013 (78 FR 27913). No public comments were received on this estimate.

[31] Data of Commandant Instruction U comports with data on pay tables after application of load factor. Based on Coast Guard research the load factor for military positions is approximately 1.85. This estimate was vetted in previous Coast Guard rulemakings as noted. Please see *https://www.dfas.mil/militarymembers/payentitlements/Pay-Tables.html*. See the hyperlink at the top of the page. The table provides monthly income which may be converted to hourly rates by dividing by 176 (22 days per month times 8 hours daily) then multiply by the military load factor.

believes manufacturers are aware and knowledgeable about the newer standards. Given this, we further assume they already would own copies of the standards. For this reason, the Coast Guard has not computed a cost for them to procure the standards incorporated by reference. The Coast Guard requests public comment on our assumption of voluntary compliance with the proposed rule.

Manufacturers already have been producing equipment to meet the standard and typically will begin to make manufacturing modifications even before such changes are adopted formally. Therefore, the Coast Guard does not anticipate that there would be costs to retrofit manufacturing equipment to be in compliance with the proposed rule. For previous similar rulemakings, no manufacturer commented that it would experience incremental costs of production to comply with newer editions of standards incorporated by reference.[32] For these reasons, the Coast Guard has not included a cost for these provisions. However, the Coast Guard acknowledges that there is a non-zero probability that some manufacturer may need to purchase a newer standard. The estimated incremental cost to do so varies according to which standard is needed.[33]

Cost Savings to the Regulated Public

The proposal would result in cost savings to the regulated public and the Coast Guard from a reduction in labor for processing equivalency tests and no longer requiring labor to have education on the older standards incorporated by reference. The Coast Guard expects this proposed rule would generate cost savings for owners and operators who no longer would need to request a waiver of subchapter F regulatory requirements, known as an equivalency test request, from the MSC.

Generally, the reason an owner or operator makes an equivalency request is to seek a determination from the Coast Guard on whether an edition of an industry standard not codified in the CFR is sufficient for use. To draft an equivalency request, an owner or operator would have material prepared by its engineering staff or by a contracted engineering firm.[34]

Based on MSC and CG–5PS data, the Coast Guard receives approximately 200 equivalency requests annually. The Coast Guard estimates it takes a marine engineer or naval architect employed by a vessel owner approximately 40 hours of time to develop an equivalency request and submit it to the Coast Guard for review. An estimated 0.5 hour would be used by a supervisor engineer to approve the work. The request for an equivalency test is sent via email to the MSC. Given that the submittal is via email, the Coast Guard has not estimated postage costs.

In addition, the regulated public would realize cost savings from the avoided cost of education for maintaining situational awareness on the existing standards incorporated by reference which the proposal would eliminate. The Coast Guard estimates that 0.5 hour is spent annually by engineers on education necessary to familiarize or re-familiarize themselves with these standards. The Coast Guard believes that, as industry standards evolve and advance, older editions may not be readily accessible, even if they are incorporated by reference into the CFR. As such, we expect that engineers will find the older standards and read them on occasion to maintain an awareness of how these standards are different from current industry standards.

In 2020, the Small Business Administration (SBA) published a rule where it determined that roughly 2,500 small disadvantaged businesses would save 0.5 hours each by no longer having to read 16 outdated regulations that SBA was removing through the rulemaking project.[35] Given that this proposed rule relates to a similar subject matter—time saved from the removal of outdated or redundant regulations—the Coast Guard assumes a similar duration would be saved by industry employees. This 0.5 hour is a savings to vessel owners and operators and to manufacturers.

Cost Savings to the Coast Guard

The Coast Guard also would experience cost savings as a result of the proposed rule. When the Coast Guard receives an equivalency request from a vessel owner or operator, a Coast Guard engineering staff member at the MSC must review the request to provide a determination on whether the proposed standard(s) is equivalent to the existing standard(s) found in subchapter F. The Coast Guard MSC engineer needs approximately 32 hours to review an equivalency request, followed by 0.5 hours of supervisor review. In a small percentage of more complex cases, the MSC works with CG–5PS engineering staff to complete the equivalency review. Following review, MSC emails a decision back to the owner or operator. The Coast Guard estimates it reviews 200 equivalency requests annually. To calculate the costs avoided by Coast Guard no longer processing equivalency requests, we multiplied the number of annual equivalency requests by the sum of the duration of initial review, review, and supervisor review multiplied by the loaded wage rates of the respective Coast Guard personnel performing the review (200 equivalency requests × (1 hour × average wage rate for uniformed engineer + 32 hours × wage rate for civilian engineer + 0.5 hours × wage rate for civilian engineering supervisor)).

In addition, the Coast Guard would save labor costs annually, since staff would no longer need to maintain an awareness of the older versions of standards that are incorporated by reference. The proposal eliminates and replaces them with newer standards. The Coast Guard estimates that 0.5 hour annually is spent on education on the older standards by an employee tasked with working on equivalency requests. In the aforementioned SBA proposed rule, the agency claimed that about 760 Federal contracting officers per year would save 0.5 hours from no longer reading outdated standards that were being removed by the rule. We therefore estimate 0.5 hours of education is similarly needed for Coast Guard personnel to maintain awareness and knowledge of older standards. This applies to six civilian engineers and six uniformed engineers who work on equivalency requests. To calculate the costs avoided by Coast Guard personnel no longer requiring education on outdated standards, we multiply 0.5 hours by the hourly wage rates of the

[32] A similar rulemaking is the proposed rule Revision of Crane Regulation Standards for Mobile Offshore Drilling Units, Offshore Supply Vessels, and Floating Outer Continental Shelf Facilities (Docket Number: USCG–2011–0992). Please see *https://www.federalregister.gov/documents/2013/05/13/2013-11132/revision-of-crane-regulation-standards-for-mobile-offshore-drilling-units-modus-offshore-supply* (78 FR 27913).

[33] The cost to acquire an IBR standard would be estimated by the equation (0.25 hour × supv wage rate + 0.5 hour × admin assistant wage rate + cost of IBR + shipping cost). This is based on the publicly vetted cost estimation found in the regulatory analysis for the proposed rule Revision of Crane Regulation Standards for Mobile Offshore Drilling Units, Offshore Supply Vessels, and Floating Outer Continental Shelf Facilities (Docket Number: USCG–2011–0992).

[34] If the owner or operator does not have staff sufficiently skilled to prepare the material, he or she may contract the services of an engineering design firm for the labor of a marine engineer or naval architect. The Coast Guard did not attempt to estimate the additional labor needed to engage contracted labor since it is unknown how many or even if an owner or operator would need outside labor to perform this task. Public comment is solicited on this.

[35] The SBA rule is entitled Regulatory Reform Initiative: Small Disadvantaged Businesses, (Document Number: SBA 2020–08619) which was published on May 8, 2020. See *https://www.federalregister.gov/documents/2020/05/08/2020-08619/regulatory-reform-initiative-small-disadvantaged-businesses* (85 FR 27290).

Coast Guard personnel (0.5 hours (6 uniformed engineers × average wage rate for uniformed engineer + 6 civilian engineers × wage rate for civilian engineer)).

Table 7 presents the estimated cost savings of the proposed rule to the regulated public and to the Coast Guard.

TABLE 7—ESTIMATED COST SAVINGS OF PROPOSAL

CFR citation	Task	Calculation	Cost savings
Cost Savings to Regulated Public (Vessel Owners and Operators)			
§§ 50.20–5(b), 10(a); 58.05–1(b); 63.10–1.	Fewer copies required for submittal	Too small and unseverable to be calculated separately.	Nonzero
54.01–18(a), 54.10–3, 54.10–3(c),[36] 54.10–20(a)(2),[37] 54.10–3,[38] 54.10–3(c)[39].	Avoided questions or performance of unrequired tasks due to misunderstanding of rules.	Untracked by the Coast Guard and unreported by regulated public.	Nonzero
61.10–5(g)	Owner/Operator may select method (internal inspection vs hydrostatic test) to comply[40].	Saves cost of lagging and its installation and the cost difference between internal inspections versus hydrostatic tests. Untracked by the Coast Guard and unreported by regulated public.	Nonzero
Multiple	Avoided preparation and submittal of equivalency request.	200 requests × (40 hours × $71.23/hour engineer + 0.5 hour $84.52/hour engineering supervisor).	$578,258
Multiple	Avoided cost of education	200 engineers × 0.5 hour × $71.23/hour engineer.	7,123
Subtotal Cost Savings for Regulated Public (Vessel Owner/Operators).	.....	.....	585,381
Cost Savings to Regulated Public (Manufacturers)			
Multiple	Avoided cost of education	1,022 manufacturers × 0.5 hour × $71.23/hour engineer.	36,396
Subtotal Cost Savings for Regulated Public (Manufacturers).	.....	.....	36,396
Annual Cost Savings for Regulated Public.	.....	.....	621,777
Cost Savings for the Federal Government (Coast Guard)			
Multiple	Avoided processing of equivalency request.	200 requests × (1 hour × $91/hour uniformed engineer + 32 hours × $115.51/hour civilian engineer + 0.5 hour × $135.87/hour civilian engineering supervisor).	771,055
Multiple	Avoided cost of education	0.5 hour × ($115.51/hour civilian engineer × 6 count civilian engineers + $91/hour × 6 uniformed engineers).	620
Subtotal for Government	.....	.....	771,675
Annual Total for Regulated Public and Government.	.....	.....	1,393,452

Note: Totals may not sum due to independent rounding. Undiscounted costs appear in the table. Figures have been rounded to the nearest hundredth. Unrounded figures were used in calculations.

Table 8 summarizes the cost savings per year of the proposed rule for the regulated public and the Federal Government

[36] Existing regulations have been misunderstood as to whether a pressure vessel (PV) requires or does not require plan review by the Coast Guard. This proposed change clarifies regulatory intent and would preclude inquiries to the Coast Guard.

[37] The requirement for Coast Guard numbering of PVs is misunderstood often. The proposed change clarifies that Coast Guard numbering is required only when the Coast Guard has inspected the PV during construction (shop inspection).

[38] The requirement for use of the Coast Guard Symbol on PVs (§ 54.10–3) often is misunderstood. This section has been edited to assist readers in finding rules requiring stamping of the Coast guard Symbol.

[39] This section has been clarified by adding a section clearly identifying which PVs do not require stamping.

[40] The proposed change would give operators the option of undergoing an internal inspection every 10 years as opposed to requiring a hydrostatic test every 10 years.

TABLE 8—TOTAL ESTIMATED COST SAVINGS OF THE PROPOSED RULE
[10-Year period of analysis, 7- and 3-percent discount rates (2020)]

Year	Regulated public			Federal government			Total		
	7%	3%	Undisc.	7%	3%	Undisc.	7%	3%	Undisc.
1	$581,100	$603,667	$621,777	$721,191	$749,199	$771,675	$1,302,291	$1,352,866	$1,393,452
2	543,084	586,084	621,777	674,011	727,378	771,675	1,217,095	1,313,462	1,393,452
3	507,555	569,014	621,777	629,917	706,192	771,675	1,137,472	1,275,206	1,393,452
4	474,351	552,441	621,777	588,707	685,623	771,675	1,063,058	1,238,064	1,393,452
5	443,318	536,350	621,777	550,193	665,653	771,675	993,512	1,202,004	1,393,452
6	414,316	520,728	621,777	514,200	646,266	771,675	928,516	1,166,994	1,393,452
7	387,211	505,562	621,777	480,560	627,442	771,675	867,772	1,133,004	1,393,452
8	361,880	490,837	621,777	449,122	609,167	771,675	811,002	1,100,004	1,393,452
9	338,206	476,540	621,777	419,740	591,425	771,675	757,945	1,067,965	1,393,452
10	316,080	462,660	621,777	392,280	574,199	771,675	708,360	1,036,859	1,393,452
10-Year	4,367,102	5,303,884	6,217,770	5,419,921	6,582,543	7,716,748	9,787,023	11,886,427	13,934,519
Ann	621,777	621,777	N/A	771,675	771,675	N/A	1,393,452	1,393,452	N/A

Note: Totals may not sum due to independent rounding.

The Coast Guard estimates an annualized cost savings to industry of $0.622 million (with a 7-percent discount rate) and an annualized cost savings to Government of $0.772 million (with a 7-percent discount rate) for a total annualized cost savings of $1.393 million in 2020 dollars.

Cost Savings

The proposed rule amends existing regulations in 46 CFR subchapter F. The proposed amendments would eliminate confusion caused by outdated and conflicting rules on marine engineering safety of various vessel components and systems and give the maritime industry clear instructions on how to comply with regulations. Moreover, this proposed rule would amend existing regulations to reflect current national and international standards. The proposed rule also would result in cost savings to the regulated public and the Federal Government, as noted further.

Several of the proposed rule's changes have no cost effects (please see Table 4). These editorial changes, such as the removal of outdated terminology and the consolidation of text, would not result in cost savings but would clarify regulations, as noted earlier. Also, by incorporating the newer standards, the proposed changes would provide clarity and specificity. For these changes, the Coast Guard expects them to have no direct cost savings because they are unseverable from the cost savings noted previously.

The compliance alternatives would remove overly prescriptive requirements, simplify regulatory compliance, and provide regulatory flexibility for industry. The proposal would add a compliance alternative to hydrostatic tests, thereby allowing the regulated public to perform an internal inspection in lieu of the hydrostatic test. The proposed inclusion of this compliance alternative would save a given vessel owner labor and material. In order to comply with the existing requirement for hydrostatic tests, the vessel owner must remove existing lagging around the unit, then replace it once the test is completed. The proposed compliance alternative would involve less labor and would not necessitate the removal and replacement of lagging as the existing requirements do. The Coast Guard has not estimated a cost for this alternative, because it is unknown how many vessel owners would choose to pursue the alternative. Because equipment sizes vary, the amount of labor and material needed to comply now and under the alternative is also unknown.[41] The Coast Guard invites public comment on this issue.

Alternatives Considered

Within the Coast Guard's development of this proposed rule, significant alternatives to the regulatory component(s) were considered to determine if any alternative could accomplish the stated objectives of applicable statutes and could minimize any significant economic impact of the rule on small entities beyond the proposed rule. Among these alternatives were the following:

Alternative 1: Take No Action

The Coast Guard could have chosen not to pursue the rulemaking. Taking no action would cause no incremental costs to regulated entities nor to the Coast Guard. However, in doing nothing, the Coast Guard would have no mechanism to update regulations to reflect current practices and improve their relevance to the public. There would be neither an increase nor decrease in benefits to regulated entities due to the alternative. The proposed rule has been estimated to produce quantifiable cost savings to the Coast Guard and the regulated public, which would not be possible under the alternative of no action.

The standards currently incorporated by reference are outdated. To keep them codified would, in theory, maintain existing safety levels. However, because they are so outdated, they are sparsely available. Compliance with them may become problematic in the future due to lack of availability. The older editions of the standards do not contain guidance for several current industry practices. Maintaining the regulations with the existing standards incorporated by reference would not allow for cost savings as the proposal would do.

The goal of this proposed rule is to streamline requirements, to clarify existing rules and to increase enforcement effectiveness. The no-action alternative would result in no additional costs and maintain current levels of public safety. Similarly, the proposed rule is anticipated to have cost savings opportunities;[42] and these savings would not accrue to the public if current regulations were not amended. The proposed rule also is being promulgated to provide clarity on regulatory intentions; a no-action choice would not permit this clarification to be given to the public. This alternative would result in no benefits as there would be no changes to current practice; therefore, the Coast Guard rejected this alternative.

[41] This information would be needed to ascertain the existing cost of compliance; the Coast Guard could then estimate the cost savings of the proposed new compliance alternative.

[42] The proposed adoption of the newer editions would mean that some outdated requirements of the earlier editions are no longer required or are converted to recommendations rather than requirements. The newer editions also include some flexibility in requirements and recommendations based on the given circumstances. The reader may consult the appendix for a detailed analysis of the changes between the editions.

Alternative 2: Delay the Effective Date

The Coast Guard could have delayed the effective date. Delayed effective dates are used to aid in compliance implementation, particularly when the labor costs or capital costs are considerable. The compliance costs for the proposal are zero as noted earlier, and a delayed effective date would delay the cost savings opportunities to all parties. For these reasons, the Coast Guard rejected this alternative.

Alternative 3. Exempt Small Entities

The Coast Guard could have exempted small entities from some or all of the proposed rule's provisions. In principle, an exemption would save small entities time and money to comply with regulations. Exemptions for small entities often are used when costs of compliance, such as capital costs, are high. However, there are no costs of compliance for this proposed rule. For this alternative, an exemption may cause the cost savings opportunities of the rulemaking to be precluded for small entities and, thereby, the total value of the rule's cost savings would decline accordingly.

The proposal would implement requirements for business practices in which the majority (if not all) of small businesses now engage. An exemption for small business entities from the rulemaking would have little effective and practical impact on small business entities. There is a high level of voluntary compliance and limited applicability for the affected population. The costs of compliance are zero and the rule is applicable only if an actionable event occurs (for example, if a new vessel is procured or an existing vessel undergoes a major conversion). For these reasons, the Coast Guard did not pursue an exemption for small entities.

B. Small Entities

The Regulatory Flexibility Act of 1980 (RFA), 5 U.S.C. 601–612, and Executive Order 13272 (Consideration of Small Entities in Agency Rulemaking) requires a review of proposed and final rules to assess their impacts on small entities. An agency must prepare an initial regulatory flexibility analysis unless it determines and certifies that a rule, if promulgated, would not have a significant impact on a substantial number of small entities.

Under the RFA, we have considered whether this proposed rule would have a significant economic impact on a substantial number of small entities. The term ''small entities'' [43] comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000.

Based on our analysis, this proposed rule would affect vessel owners and operators, manufacturers and class societies. While the proposed rule excludes public vessels,[44] there exists considerable diversity in the types of vessel owners that may be impacted by the proposal. Some vessel owners potentially impacted by this proposed rule include Tribal, State, and local governments as well as nonprofits including colleges and universities, museums, and science foundations.

The MISLE database maintained by the Coast Guard contains detailed information on the U.S. maritime industry, including vessel and major equipment specific information, and MISLE data suggest that the potentially affected population contains thousands of vessels for thousands of vessel owners and operators. While there exists no exact figure of the population of U.S.-flagged vessels and their owners and operators, and the Coast Guard does not maintain a registry of all vessels, many vessels are documented and therefore there is a record of the owner. For these reasons, the Coast Guard was able to estimate the number of vessel owners and operators impacted by the proposed rulemaking based on the MISLE dataset of U.S.-flagged vessels. The Coast Guard used this dataset of vessels, refined to eliminate duplicate managing owner names, to create a dataset of unique owner names to serve as a proxy for the number of vessel owners in the affected population.

The SBA uses either revenue level or employment size to establish small entity size categories.[45] For that reason, the Coast Guard reviewed publicly available information to determine revenue and employment estimates. These sources included but were not limited to *www.manta.com, www.dnb.com,* and the corporate websites of several businesses. The reader should note that the Coast Guard used data for the governing body of a corporate entity. In other words, for affected business entities that were subsidiaries of another company; the employment size and revenue level of the parent company was compared to the small business size standard for the North American Industry Classification System (NAICS) code of the parent company.[46]

The Coast Guard used a random sample to estimate the number of small entities that are manufacturers and managing owners.[47] The Coast Guard was able to find data on approximately 92 percent of the sampled managing owner businesses and 88.6 percent of manufacturers impacted by the rule. [48] [49] Publicly available data were used to obtain company-specific information such as annual revenues and number of employees.[50] Any company for which the Coast Guard did not find data was considered small.[51] Using the SBA's ''Table of Size Standards'' and the NAICS codes listed in the table, the Coast Guard found that 21.35 percent of governmental entities that were managing owners of vessels are small entities.[52] For nonprofits, 84.48 percent were small entities.[53] For the remaining companies owning vessels in the affected population, the Coast Guard found that 85.85 percent were small entities. For manufacturers, the Coast Guard estimates that 62.03 percent of companies were small entities.

Cost savings are incurred only under conditions as specified in the proposal. The cost saving for each vessel owner or operator would be approximately $2,923 per entity, which is less than 1 percent

[43] The Regulatory Flexibility Act considers the term ''small entity'' as having the same meaning as the terms ''small business,'' ''small organization'' and ''small governmental jurisdiction.''

[44] 42 U.S. Code 6939d(c)(1) provides, ''The term 'public vessel' means a vessel owned or bareboat chartered and operated by the United States or by a foreign nation, except when the vessel is engaged in commerce.''

[45] The SBA threshold for a small entity is either the maximum number of employees or the maximum revenue level (or population size for a State/local government). Size standards may be found in 13 CFR 121.201.

[46] The NAICS codes for the parent company may differ for its subsidiaries.

[47] Separate samples were performed for managing owners that are governmental entities or nonprofits.

[48] The Coast Guard used a sample size of 190 (alpha = 0.10, confidence interval of 90%).

[49] We found data on 81 percent of nonprofits that were managing owners and data for all governmental entities that were managing owners.

[50] *www.dnb.com* and *www.charitynavigator.org* (for nonprofits).

[51] *https://www.sba.gov/document/support--table-size-standards.*

[52] The following NAICS codes were found for most sampled owners (excluding governmental entities and nonprofits): 441222 Boat Dealers; 237990 Other Heavy and Civil Engineering Construction; 325110 Petrochemical Manufacturing; 336611 Ship Building and Repairing; 483111 Deep Sea Freight Transportation, 454310 Fuel Dealers, 237310 Hwy, Street, and Bridge Construction; 483211 Inland Water Freight Transportation; and 488330 Navigational Services to Shipping. This list is not exclusive.

[53] The most commonly found NAICS codes for nonprofits in the sample were 813410 Civic and Social Organizations; 611710 Educational Support Services; 813312 Environment, Conservation and Wildlife Organizations; and 712110 Museums. This list is not exclusive.

of revenue for 72.48 percent of small entity managing owners. These cost savings are incurred only if the regulated entity experienced tasks as noted in the proposed rule. For most vessel owners and operators, there would be no cost nor cost savings from the proposed rule.

Therefore, the Coast Guard certifies under 5 U.S.C. 605(b) that this proposed rule would not have a significant economic impact on a substantial number of small entities.

If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that this rule would have a significant economic impact on it, please submit a comment to docket at the address in the **ADDRESSES** section. In your comment, explain why you think it qualifies and how and to what degree this rule would affect it economically.

C. Assistance for Small Entities

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996, Public Law 104–121, we want to assist small entities in understanding this proposed rule so that they can better evaluate its effects on them and participate in the rulemaking. If the proposed rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please call or email the person in the **FOR FURTHER INFORMATION CONTACT** section of this proposed rule. The Coast Guard will not retaliate against small entities that question or complain about this proposed rule or any policy or action of the Coast Guard.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247).

D. Collection of Information

This proposed rule would not require a modification of an existing collection of information (Plan Approval and Records for Marine Engineering Systems—Title 46 CFR Subchapter F *OMB Control Number:* 1625–0097) and would not call for new collection of information under the Paperwork Reduction Act of 1995 (PRA), 44 U.S.C. 3501–3520. As defined in 5 CFR 1320.3(c), ''collection of information'' comprises reporting, recordkeeping, monitoring, posting, labeling, and other similar actions.

E. Federalism

A rule has implications for federalism under Executive Order 13132 (Federalism) if it has a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. We have analyzed this proposed rule under Executive Order 13132 and determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132. Our analysis follows.

It is well settled that States may not regulate in categories reserved by Congress for regulation by the Coast Guard. It is also well settled that all of the categories regulated under 46 U.S.C. 3306 and 3703, as well as any other category in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, are within the field foreclosed from regulation by the States. *See* the Supreme Court's decision in *United States* v. *Locke* and *Intertanko* v. *Locke,* 529 U.S. 89, 120 S.Ct. 1135 (2000). This proposed rulemaking updates the references to incorporated standards in 46 CFR Subchapter F, which is authorized under 43 U.S.C. 1333, 46 U.S.C. 3306, and 46 U.S.C. 3703. Therefore, because the States may not regulate within these categories, this rule is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

While it is well settled that States may not regulate in categories in which Congress intended the Coast Guard to be the sole source of a vessel's obligations, the Coast Guard recognizes the key role that State and local governments may have in making regulatory determinations. Additionally, for rules with federalism implications and preemptive effect, Executive Order 13132 specifically directs agencies to consult with State and local governments during the rulemaking process. If you believe this proposed rule has implications for federalism under Executive Order 13132, please contact the person listed in the **FOR FURTHER INFORMATION** section of this preamble.

F. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995, 2 U.S.C. 1531–1538, requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Although this proposed rule would not result in such an expenditure, we do discuss the effects of this proposed rule elsewhere in this preamble.

G. Taking of Private Property

This proposed rule would not cause a taking of private property or otherwise have taking implications under Executive Order 12630 (Governmental Actions and Interference with Constitutionally Protected Property Rights).

H. Civil Justice Reform

This proposed rule meets applicable standards in sections 3(a) and 3(b) (2) of Executive Order 12988, (Civil Justice Reform), to minimize litigation, eliminate ambiguity, and reduce burden.

I. Protection of Children

We have analyzed this proposed rule under Executive Order 13045 (Protection of Children from Environmental Health Risks and Safety Risks). This proposed rule is not an economically significant rule and would not create an environmental risk to health or risk to safety that might disproportionately affect children.

J. Indian Tribal Governments

This proposed rule does not have Tribal implications under Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), because it would not have a substantial direct effect on one or more Tribal governments, on the relationship between the Federal Government and Tribal governments, or on the distribution of power and responsibilities between the Federal Government and Tribal governments.

K. Energy Effects

We have analyzed this proposed rule under Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use). We have determined that it is not a ''significant energy action'' under that order because it is not a ''significant regulatory action'' under Executive Order 12866 and is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

L. Technical Standards

The National Technology Transfer and Advancement Act, codified as a note to 15 U.S.C. 272, directs agencies to use voluntary consensus standards in their regulatory activities unless the agency provides Congress, through OMB, with an explanation of why using these standards would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (such as for specifications of materials, performance, design, or operation; test methods; sampling procedures; and related management systems practices) that are developed or adopted by voluntary consensus standards bodies.

This proposed rule uses the following voluntary standards:

- ABS Rules for Building and Classing Marine Vessels, 2020, Part 4, Vessel Systems and Machinery.
- ABYC P–1–14, Installation of Exhaust Systems for Propulsion and Auxiliary Engines (2009 standard reaffirmed 2014).
- ANSI Z21.22–2015, Relief valves for hot water supply systems.
- API Recommended Practice 14C, Analysis, Design, Installation, and Testing of Safety Systems for Offshore Production Facilities, Eighth Edition, February 2017.
- API STD 53 Well Control Equipment Systems for Drilling Wells, 5th Edition (''API STD 53'').
- API STD 607, Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats, seventh edition (2016).
- ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers (2019) (''Section I of the ASME BPVC'').
- ASME Boiler and Pressure Vessel Code, Section IV, Rules for Construction of Power Boilers (2019) (''Section IV of the ASME BPVC'').
- ASME Boiler and Pressure Vessel Code, Section VII, Recommended Guidelines for the Care of Power Boilers (2019 edition).
- ASME Boiler and Pressure Vessel Code, Section VIII, Rules for Construction of Power Boilers (2019) (''Section VIII of the ASME BPVC'').
- ASME Boiler and Pressure Vessel Code, Section IX, Rules for Construction of Power Boilers (2019) (''Section IX of the ASME BPVC'').
- ASME B1.1–2003 (reaffirmed 2008), Unified Inch Screw Threads (UN and UNR Thread Form).
- ASME B1.20.1–2013, Pipe Threads, General Purpose (Inch).
- ASME B1.20.3–1976 (Reaffirmed 2013), Dryseal Pipe Threads (Inch).
- ASME B16.1–2015, Gray Iron Pipe Flanges and Flanged Fittings, Classes 25, 125, and 250.
- ASME B16.3–2016, Malleable Iron Threaded Fittings, Classes 150 and 300.
- ASME B16.4–2016, Gray Iron Threaded Fittings Classes 125 and 250.
- ASME B16.5–2017, Pipe Flanges and Flanged Fittings NPS ½ through NPS 24 Metric/Inch Standard.
- ASME B16.11–2016, Forged Fittings, Socket-Welding and Threaded.
- ASME B16.14–2013, Ferrous Pipe Plugs, Bushings, and Locknuts with Pipe Threads.
- ASME B16.15–2013, Cast Copper Alloy Threaded Fittings, Classes 125 and 250.
- ASME B16.20–2012, Metallic Gaskets for Pipe Flanges, Ring-Joint, Spiral-Wound, and Jacketed.
- ASME B16.21–2016, Nonmetallic Flat Gaskets for Pipe Flanges.
- ASME B16.23–2016, Cast Copper Alloy Solder Joint Drainage Fittings: DWV.
- ASME B16.25–2012, Buttwelding Ends.
- ASME B16.29–2012, Wrought Copper Alloy Solder-Joint Drainage Fittings-DWV.
- ASME B16.34–2017, Valves—Flanged, Threaded, and Welding End.
- ASME B18.2.1–2012, Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series).
- ASME B18.2.2–2015, Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Couplings Nuts (Inch Series).
- ASME B31.1–2016, Power Piping, ASME Code for Pressure Piping, B31.
- ASME B31.3–2018, Process Piping, ASME Code for Pressure Piping, B31.
- ASME B31.5–2016, Refrigeration Piping and Heat Transfer Components, ASME Code for Pressure Piping, B31.
- ASME B36.10M–2015, Welded and Seamless Wrought Steel Pipe.
- ASME CSD–1–2018, Controls and Safety Devices for Automatically Fired Boilers.
- ASME SA–675–2021, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties.
- ASTM A20/A20M–19, Standard Specification for General Requirements for Steel Plates for Pressure Vessels (''ASTM A20/A20M'').
- ASTM A36/A36M–14, Standard Specification for Carbon Structural Steel.
- ASTM A47A47M–99 (Reapproved 2014), Standard Specification for Ferritic Malleable Iron Castings.
- ASTM A53/A53M–12, Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc-Coated, Welded and Seamless.
- ASTM A126–04 (Reapproved 2014), Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings.
- ASTM A135/A135M–19, Standard Specification for Electric-Resistance-Welded Steel Pipe.
- ASTM A193/A193M–19, Standard Specification for Alloy-Steel and Stainless Steel Bolting for High-Temperature Service or High Pressure Service and Other Special Purpose Applications.
- ASTM A197–00 (Reapproved 2015), Standard Specification for Cupola Malleable Iron.
- ASTM A203/A203M–17, Standard Specification for Pressure Vessel Plates, Alloy Steel, Nickel (''ASTM A203/A203M'').
- ASTM A210/A210M–19, Standard Specification for Seamless Medium-Carbon Steel Boiler and Superheater Tubes.
- ASTM A268/A268M–10 (Reapproved 2016), Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service.
- ASTM A276/A276M–17, Standard Specification for Stainless Steel Bars and Shapes.
- ASTM A312/A312M–17, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes.
- ASTM A333/A333M–16, Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness.
- ASTM A334/A334M–04a, Standard Specification for Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service.
- ASTM A350/A350M–17, Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components.
- ASTM A352/A352M–17, Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service.
- ASTM A358/A358M–15, Standard Specification for Electric-Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications.
- ASTM A370–19, Standard Test Methods and Definitions for Mechanical Testing of Steel Products (''ASTM A370'').
- ASTM A376/A376M–17, Standard Specification for Seamless Austenitic

Steel Pipe for High-Temperature Service.
- ASTM A403/A403M–16, Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings.
- ASTM A420/A420M–16, Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service.
- ASTM A522/A522M–14, Standard Specification for Forged or Rolled 8 and 9% Nickel Alloy Steel Flanges, Fittings, Valves, and Parts for Low-Temperature Service.
- ASTM A575–96 (Reapproved 2013), Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades.
- ASTM A576–17, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality.
- ASTM B16/B16M–10 (Reapproved 2015), Standard Specification for Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines.
- ASTM B21/B21M–20, Standard Specification for Naval Brass Rod, Bar, and Shapes.
- ASTM B26/B26M–18, Standard Specification for Aluminum-Alloy Sand Castings.
- ASTM B42–20, Standard Specification for Seamless Copper Pipe, Standard Sizes.
- ASTM B43–15, Standard Specification for Seamless Red Brass Pipe, Standard Sizes.
- ASTM B68/B68M–19, Standard Specification for Seamless Copper Tube, Bright Annealed.
- ASTM B75/B75M–19, Standard Specification for Seamless Copper Tube.
- ASTM B85/B85M–18, Standard Specification for Aluminum-Alloy Die Castings.
- ASTM B96/B96M–16, Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels.
- ASTM B111/B111M–18a, Standard Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock.
- ASTM B122/B122M–16, Standard Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar.
- ASTM B124/B124M–18, Standard Specification for Copper and Copper Alloy Forging Rod, Bar, and Shapes.
- ASTM B127–19, Standard Specification for Nickel-Copper Alloy Plate, Sheet, and Strip.
- ASTM B152/B152M–19, Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar.
- ASTM B161–05 (Reapproved 2019), Standard Specification for Nickel Seamless Pipe and Tube.
- ASTM B165–19, Standard Specification for Nickel-Copper Alloy Seamless Pipe and Tube.
- ASTM B167–18, Standard Specification for Nickel-Chromium-Aluminum Alloys (UNS N06699), Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674), and Nickel-Chromium-Molybdenum-Copper Alloy (UNS N06235) Seamless Pipe and Tube.
- ASTM B171/B171M–18, Standard Specification for Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers, and Heat Exchangers.
- ASTM B209–14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
- ASTM B210/B210M–19a, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes.
- ASTM B234–17, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes for Surface Condensers, Evaporators, and Heat Exchangers.
- ASTM B241/B241M–16, Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube.
- ASTM B280–18, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.
- ASTM B283/B283M–18, Standard Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed).
- ASTM B315–19, Standard Specification for Seamless Copper Alloy Pipe and Tube.
- ASTM B361–16, Standard Specification for Factory-Made Wrought Aluminum and Aluminum-Alloy Welding Fittings.
- ASTM B858–06 (Reapproved 2018), Standard Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys.
- ASTM D92–18, Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester.
- ASTM D93–19, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester.
- ASTM D323–15a, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method).
- ASTM D665–19, Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water.
- ASTM E23–18, Standard Test Methods for Notched Bar Impact Testing of Metallic Materials.
- ASTM E208–19, Standard Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steels (''ASTM E208'').
- ASTM F1006–86 (reapproved 2018), Standard Specification for Entrainment Separators for Use in Marine Piping Applications.
- ASTM F1007–18, Standard Specification for Pipeline Expansion Joints of the Packed Slip Type for Marine Application.
- ASTM F1020–86 (Reapproved 2018), Standard Specification for Line-Blind Valves for Marine Applications.
- ASTM F1120–87 (Reapproved 2015), Standard Specification for Circular Metallic Bellows Type Expansion Joints for Piping Applications.
- ASTM F1123–87 (Reapproved 2015), Standard Specification for Non-Metallic Expansion Joints.
- ASTM F1139–88 (Reapproved 2015), Standard Specification for Steam Traps and Drains.
- ASTM F1155–10 (Reapproved 2015), Standard Practice for Selection and Application of Piping System Materials.
- ASTM F1172–88 (Reapproved 2015), Standard Specification for Fuel Oil Meters of the Volumetric Positive Displacement Type.
- ASTM F1173–01 (Reapproved 2018), Standard Specification for Thermosetting Resin Fiberglass Pipe Systems to be Used for Marine Applications.
- ASTM F1199–88 (Reapproved 2015), Standard Specification for Cast (All Temperatures and Pressures) and Welded Pipe Line Strainers (150 psig and 150 °F Maximum).
- ASTM F1200–88 (Reapproved 2016), Standard Specification for Fabricated (Welded) Pipe Line Strainers (Above 150 psig and 150 °F).
- ASTM F1201–88 (Reapproved 2016), Standard Specification for Fluid Conditioner Fittings in Piping Applications above 0 °F.
- ASTM F1323–14, Standard Specification for Shipboard Incinerators (''ASTM F 1323'').
- ASTM F1387–19, Standard Specification for Performance of Piping and Tubing Mechanically Attached Fittings.
- ASTM F1476–07 (Reapproved 2013), Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications.
- ASTM F1548–01 (Reapproved 2018), Standard Specification for the Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications.

- CGA S–1.2–2009, Pressure Relief Device Standards—Part 2—Portable Containers for Compressed Gases.
- Standards of the Expansion Joint Manufacturers Association, Tenth Edition (2015).
- FCI 69–1, Pressure Rating Standard for Steam Traps, 2017.
- International Convention for Safety of Life at Sea, 1974 as amended (SOLAS).
- IMO Resolution MEPC.244(66), Standard Specification for Shipboard Incinerators, 2014.
- IMO Resolution MSC.337(91), Code on Noise Levels on Board Ships.
- ISO 9096:2017(E), Stationary source emissions—Manual determination of mass concentration of particulate matter.
- ISO 13617:2019(E), Ships and marine technology-Shipboard incinerators—Requirements (''ISO 13617'').
- ISO 15540:2016(E), Ships and marine technology—Fire resistance of non-metallic hose assemblies and non-metallic compensators—Test methods.
- MSS SP–6–2017, Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings.
- MSS SP–9–2013, Spot Facing for Bronze, Iron, and Steel Flanges.
- MSS SP–25 (ANSI/MSS SP–25–2018), Standard Marking System for Valves, Fittings, Flanges and Unions.
- MSS SP–51–2012, Class 150LW Corrosion Resistant Flanges and Cast Flanged Fittings.
- MSS SP–53–2012, Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components-Magnetic Particle Examination Method.
- MSS SP–55 (ANSI/MSS SP–55–2011), Quality Standard for Steel Castings for Valves, Flanges, Fittings and Other Piping Components-Visual Method for Evaluation of Surface Irregularities.
- MSS SP–58 (ANSI/MSS SP–58–2009), Pipe Hangers and Supports-Materials, Design, Manufacture, Selection, Application, and Installation.
- MSS SP–61–2019, Pressure Testing of Valves.
- NFPA 302, Fire Protection Standard for Pleasure and Commercial Motor Craft, 2020 Edition.
- SAE J429 MAY2014, Mechanical and Material Requirements for Externally Threaded Fasteners.
- SAE J1475 JUN2014, Hydraulic Hose Fittings for Marine Applications.
- SAE J1928 JUN2018, Devices Providing Backfire Flame Control for Gasoline Engines in Marine Applications.
- SAE J1942 MAR2019, Hose and Hose Assemblies for Marine Applications.
- UL 174, Standard for Safety, Household Electric Storage Tank Water Heaters, Eleventh Edition, April 29, 2004 (reapproved in 2016) (''UL 174'').
- UL 296, Standard for Safety, Oil Burners, Eleventh Edition, February 24, 2017 (''UL 296'').
- UL 343, Standard for Safety, Pumps for Oil-Burning Appliances, Ninth Edition, December 17, 2008 (''UL 343'').
- UL 1453, Standard for Safety, Electric Booster and Commercial Storage Tank Water Heaters, Sixth Edition, March 29, 2016 (''UL 1453'').

The proposed sections that reference these standards and the locations where these standards are available are listed in §§ 52.01–1, 53.01–1, 54.01–1, 56.01–2, 57.02–1, 58.03–1, 59.01–2, 61.03–1, 62.05–1, and 63.05–1.

If you disagree with our analysis of these voluntary consensus standards or are aware of voluntary consensus standards that might apply but are not listed, please send a comment explaining your disagreement or identifying additional standards to the docket using one of the methods listed in the **ADDRESSES** section of this preamble.

M. Environment

We have analyzed this proposed rule under Department of Homeland Security Management Directive 023–01, Rev. 1, associated implementing instructions, and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4370f), and have made a preliminary determination that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. A preliminary Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble. This proposed rule would be categorically excluded under paragraphs L54, L57 and L58 of Appendix A, Table 1 of DHS Instruction Manual 023–01, Rev. 1.[54] Paragraph L54 pertains to regulations which are editorial and procedural; paragraph L57 pertains to regulations concerning manning, documentation, admeasurement, inspection, and equipping of vessels; and paragraph L58 pertains to regulations concerning equipment approval and carriage requirements.

This proposed action involves amending rules relating to standards for marine engineering details for various types of vessels, including incorporation of national and international safety standards by reference. This proposed rule is part of the Coast Guard's ongoing regulatory reform efforts to increase compliance options for the regulated public while providing cost savings to the public and U.S. Government, and also would promote the Coast Guard's marine safety mission. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

List of Subjects

46 CFR Part 50

Reporting and recordkeeping requirements, Vessels.

46 CFR Parts 52, 53, 54, 56, 57, 58, 59, 61, 62, 64

Incorporation by reference, Reporting and recordkeeping requirements, Vessels.

46 CFR Part 63

Incorporation by reference, Vessels.

Title 46—Shipping

PART 50—GENERAL PROVISIONS

■ 1. The authority citation for part 50 continues to read as follows:

Authority: 43 U.S.C. 1333; 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1; Section 50.01–20 also issued under the authority of 44 U.S.C. 3507.

§ 50.01–10 [Amended]

■ 2. In § 50.01–10(b), remove the word ''shall'' and add, in its place, the word ''must''.

§ 50.05–1 [Amended]

■ 3. Amend § 50.05–1 as follows:
■ a. In paragraph (a), remove the word ''shall''; and
■ b. In paragraph (c), remove the words ''shall be'' and add, in their place, the word ''are''.
■ 4. Amend § 50.05–5 as follows:
■ a. Revise paragraph (b); and
■ b. In paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 50.05–5 Existing boilers, pressure vessels or piping systems.

* * * * *

[54] *https://www.dhs.gov/sites/default/files/publications/DHS_Instruction%20Manual%20023-01-001-01%20Rev%2001_508%20Admin%20Rev.pdf.*

(b) For the purpose of recalculating the maximum allowable working pressure of boilers, pressure vessels, or piping which have deteriorated in service, the applicable design formulas in effect at the time it was contracted for or built must be used.

* * * * *

§ 50.05–10 [Amended]

■ 5. In § 50.05–10(a), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 50.05–15 [Amended]

■ 6. Amend § 50.05–15 as follows:
■ a. In paragraph (a), remove the word ''shall'';
■ b. In paragraph (b), remove the words ''shall be'' and add, in its place, the word ''are''.
■ 7. Amend § 50.05–20 as follows:
■ a. Revise the section heading and paragraph (a); and
■ b. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 50.05–20 Steam-propelled vessels.

(a) The requirements covering design of the propelling engine, boiler, and the auxiliary machinery, and the inspection thereof on all vessels which are more than 40 feet in length and which are propelled by machinery driven by steam must be in accordance with the applicable provisions of this subchapter.

* * * * *

§ 50.10–20 [Amended]

■ 8. In § 50.10–20, remove the text ''SE.'' and add, in its place, the text ''SE''.
■ 9. Revise § 50.10–23 to read as follows:

§ 50.10–23 Marine Safety Center.

The term *Marine Safety Center* refers to the Commanding Officer, Marine Safety Center, U.S. Coast Guard Stop 7430, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7430 for mail. Send mail in a printed or electronic format. Information for submitting the documents electronically can be found at *http://www.uscg.mil/HQ/MSC.*

§ 50.10–25 [Amended]

■ 10. Amend § 50.10–25 as follows:
■ a. In paragraph (b), remove the text ''Figure 50.10–25(b)'' and add, in its place, the text ''figure § 50.10–25(b)''; and
■ b. Redesignate figure 50.10–25(b) as figure § 50.10–25(b).

§ 50.10–30 [Amended]

■ 11. Amend § 50.10–30 as follows:
■ a. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must'';
■ b. In paragraph (c)(1), remove the text ''table 50.10–30'' and add, in its place, the text ''table § 50.10–30''; and
■ c. Redesignate table 50.10–30 as table § 50.10–30.

§ 50.20–1 [Amended]

■ 12. In § 50.20–1(b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 50.20–5 [Amended]

■ 13. Amend § 50.20–5 as follows:
■ a. In paragraph (b), remove the words ''in triplicate''; and
■ b. In paragraph (c), remove the last sentence.

§ 50.20–10 [Removed and Reserved]

■ 14. Remove and reserve § 50.20–10.

§ 50.20–15 [Amended]

■ 15. Amend § 50–20–15 as follows:
■ a. In paragraph (a), remove the text ''(including work accomplished under a different contract) shall not be'' and add, in its place, the words ''is not''; and
■ b. Reserve paragraph (b).

§ 50.20–25 [Amended]

■ 16. In § 50.20–25, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.
■ 17. Revise § 50.20–30 to read as follows:

§ 50.20–30 Alternative materials or methods of construction.

When new materials, alternative procedures, designs, or methods of construction are submitted for approval and for which no regulations have been provided, the Commandant will act regarding the approval or disapproval thereof.

§ 50.20–35 [Amended]

■ 18. In § 50.20–35, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 50.25–1 [Amended]

■ 19. Amend § 50.25–1 as follows:
■ a. Remove paragraph (e) and redesignate paragraph (f) as paragraph (e); and
■ b. In redesignated paragraph (e), remove the word ''shall'' and add, in its place, the word ''must''.

§ 50.25–3 [Amended]

■ 20. In § 50.25–3, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 50.25–5 [Amended]

■ 21. In § 50.25–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 22. Amend § 50.25–7 as follows:
■ a. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ b. Revise paragraph (c); and
■ c. Remove paragraph (d).

The revision reads as follows:

§ 50.25–7 Testing of products required to be certified in presence of marine inspector.

* * * * *

(c) Unless otherwise authorized, required tests and inspections described in applicable specifications must be made at the place of manufacture prior to shipment.

§ 50.30–1 [Amended]

■ 23. Amend § 50.30–1 as follows:
■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and
■ b. In paragraph (c), remove the text ''tables 54.01–5(a) and 54.01–5(b)'' and add, in its place, the text ''tables 1 and 2 to § 54.01–5''.

§ 50.30–10 [Amended]

■ 24. In § 50.30–10, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 50.30–15 [Amended]

■ 25. In § 50.30–15, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 50.30–20 [Amended]

■ 26. In § 50.30–20, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

PART 52—POWER BOILERS

■ 27. The authority citation for part 52 continues to read as follows:

Authority: 46 U.S.C. 3306, 3307, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

■ 28. Revise § 52.01–1 to read as follows:

§ 52.01–1 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington,

DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(b) *American Society of Mechanical Engineers (ASME),* Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers (2019) (''Section I of the ASME BPVC''); IBR approved for §§ 52.01–2, 52.01–3, 52.01–5, 52.01–50, 52.01–95, 52.01–100, 52.01–105, 52.01–110, 52.01–115, 52.01–120, 52.01–135, 52.01–140, 52.01–145, 52.05–1, 52.05–15, 52.05–20, 52.05–30, 52.05–45, 52.15–1, 52.15–5, 52.20–1, 52.20–25, 52.25–3, 52.25–5, 52.25–7, 52.25–10.

(2) [Reserved]

* * * * *

■ 29. Amend § 52.01–2 as follows:

■ a. Revise the section heading and paragraphs (a) and (b); and

■ b. In paragraph (c), remove the text ''material in section I of the ASME Code'' and add, in its place, the text ''Section I of the ASME BPVC''.

The revisions read as follows:

§ 52.01–2 Adoption of Section I of the ASME BPVC.

(a) Main power boilers and auxiliary boilers must be designed, constructed, inspected, tested, and stamped in accordance with Section I of the ASME BPVC (incorporated by reference; see § 52.01–1), as limited, modified, or replaced by specific requirements in this part. The appendices to Section I of the ASME BPVC are adopted and must be followed when the requirements in Section I make them mandatory. For general information, table § 52.01–1(a) lists the various paragraphs in Section I of the ASME BPVC that are limited, modified, or replaced by regulations in this part.

TABLE § 52.01–1(a)—LIMITATIONS AND MODIFICATIONS IN THE ADOPTION OF SECTION I OF THE ASME BPVC

Paragraphs in section I, ASME BPVC and disposition	Unit of this part
PG–1 replaced by	54.01–5(a)
PG–16 through PG–31 modified by	52.01–95
PG–32 through PG–39 modified by	52.01–100
PG–42 through PG–55 modified by	52.01–100
PG–58 and PG–59 modified by	52.01–105
PG–60 modified by	52.01–110
PG–61 modified by	52.01–115 (56.50–30)
PG–67 through PG–73 modified by	52.01–120
PG–90 through PG–100 modified by	52.01–135 (52.01–95)
PG–91 modified by	52.01–135(b)
PG–99 modified by	52.01–135(c)
PG–100 modified by	52.01–95(e)
PG–104 through PG–113 modified by	52.01–140(a)
PG–112 and PG–113 modified by	52.01–145
PW–1 through PW–54 modified by	52.05–1
PW–10 modified by	52.05–15
PW–11.1 modified by	52.05–20
PW–16 modified by	52.05–30
PW–41 modified by	52.05–20, 52.05–45
PWT–1 through PWT–15 modified by	52.15–1
PWT–9 modified by	52.15–5
PWT–9.2 replaced by	52.15–5(b)
PWT–11 modified by	52.15–5
PWT–11.3 replaced by	52.15–5(b)
PFT–1 through PFT–49 modified by	52.20–1
PFT–44 modified by	52.20–17
PFT–46. modified by	52.20–25
PFH–1 modified by	52.25–3
PMB–1 through PMB–21 modified by	52.25–5
PEB–1 through PEB–19 modified by	52.25–7
PVG–1 through PVG–12 modified by	52.25–10
A–19 through A–21 modified by	52.01–50

Note 1 to table 52.01–1(a): The references to specific provisions in the ASME BPVC are coded. The first letter ''P'' refers to section I, while the letter ''A'' refers to the appendix to section I. The letter or letters following ''P'' refer to a specific subsection of section I. The number following the letter or letters refers to the paragraph so numbered in the text.

(b) References to the ASME BPVC, such as paragraph PG–1, indicate:

P=Section I, Power Boilers.

G=Subsection—General Requirements.

1=Paragraph 1.

* * * * *

■ 30. Revise § 52.01–3 to read as follows:

§ 52.01–3. Definition of terms used in this part.

For primary definitions associated with power boiler design, see Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

(a) *Types of boilers*—(1) *Main power boiler.* A main power boiler is a steam boiler used for generating steam for main propulsion.

(2) *Auxiliary or donkey boiler.* An auxiliary or donkey boiler is a steam boiler used for general purposes other than main propulsion.

(3) *Watertube boiler.* A watertube boiler is a steam boiler in which the boiler tubes contain water and steam. The heat is applied to the outside surface of the tubes.

(4) *Internally fired firetube boiler (scotch boiler).* An internally fired firetube boiler is a steam boiler containing furnaces, one or more combustion chambers and tubes or flues, which are surrounded by water and through which the products of combustion pass from the furnace to the uptake.

(5) *Externally fired firetube or flue boiler (horizontal return tubular).* An externally fired firetube or flue boiler is a steam boiler, part of the outer shell of which is exposed to fire or to the products of combustion, and containing flues through which such products pass from the furnace to the uptake.

(6) *Unfired steam boiler.* A pressure vessel in which steam is generated by means other than fuel combustion is classed as an unfired steam boiler. (See § 54.01–10 of this subchapter.)

(b) *Parts of boilers*— (1) *Superheater.* A superheater is an appliance, normally consisting of tube rows, for the purpose of increasing the temperature of steam above the saturation temperature.

(2) *Economizer.* An economizer is a feed-water heater usually located in the uptake or casing of a boiler to absorb heat from the waste gases.

(3) *Furnace.* A furnace is a firebox or a large flue in which the fuel is burned.

(4) *Flues.* Flues are cylindrical shells made of seamless or welded tubing, or with a riveted longitudinal joint, the ends being attached by riveting or welding. Their purpose is to provide additional heating surface and to form a path for the products of combustion.

(5) *Tubes.* Tubes are cylindrical shells of comparatively small diameter constituting the main part of the heating surface of a boiler or superheater.

(c) *Pressure relief devices.* For boilers, pressure vessels, and pressure piping, a pressure relief device is designed to open to prevent a rise of internal pressure in excess of a specified value due to emergency or abnormal conditions. It may be a pressure relief valve or a nonreclosing pressure relief device.

(1) *Pressure relief valve.* A pressure relief valve is a pressure relief device which is designed to reclose and prevent the further flow of fluid after normal conditions have been restored.

(i) *Safety valve.* A safety valve is a pressure relief valve actuated by inlet static pressure and characterized by rapid opening or pop action. Examples of types used on boilers include:

(A) *Spring-loaded safety valve.* A spring-loaded safety valve is a safety valve fitted with a spring which normally holds the valve disk in a closed position against the seat and allows it to open or close at predetermined pressures. Spring-loaded safety valves are characterized by pop action.

(ii) *Pilot operated pressure relief valve.* A pilot operated pressure relief valve is a pressure relief valve in which the major relieving device is combined with and is controlled by a self-actuated auxiliary pressure relief pilot valve.

(iii) *Temperature actuated pressure relief valve.* A temperature actuated pressure relief valve is a dual-function relief device designed to protect against both excessive pressure and temperature.

(2) *Nonreclosing pressure relief device.* A nonreclosing pressure relief device is a pressure relief device not designed to reclose after operation.

(i) *Rupture disk device.* A rupture disk device is a device actuated by inlet static pressure and designed to function by the bursting of a pressure retaining disk.

(ii) *Explosion rupture disk device.* An explosion rupture disk device is a rupture disk device designed for use at high rates of pressure rise.

(iii) *Fusible plug device.* A fusible plug device is a device designed to function by the yielding or melting of a plug of suitable melting temperature.

(3) *Vacuum relief valve.* A vacuum relief valve is a valve designed to admit fluid or gas to prevent an excessive internal vacuum.

(d) *Other boiler attachments*—(1) *Mountings.* Mountings are nozzle connections, distance pieces, valves, or fittings attached directly to the boiler.

(2) *Main steam stop valve.* A main steam stop valve is a valve usually connected directly to the boiler for the purpose of shutting off the steam to/from the main steam line.

(3) *Auxiliary steam stop valve.* An auxiliary steam stop valve is a valve usually connected directly to the boiler for the purpose of shutting off the steam to/from the auxiliary lines.

(4) *Manifold.* A manifold is a fitting with two or more branches having valves either attached by bolting or integral with the fitting.

(5) *Blowoff valve.* A blowoff valve is a valve connected directly to the boiler for the purpose of blowing out water, scum or sediment.

(6) *Dry pipe.* A dry pipe is a perforated or slotted pipe placed in the highest part of the steam space of a boiler to prevent priming (water carryover).

(7) *Water column.* A water column is a fitting or tube equipped with a water glass attached to a boiler for the purpose of indicating the water level.

(8) *Test cocks.* Test cocks are small valves on a boiler for indicating the water level or water sampling.

(9) *Fusible plugs.* Fusible plugs are plugs made with a bronze casing and a tin filling which melts at a temperature of 445° to 450 °F. They are intended to melt in the event of low water level.

(e) *Boiler fabrication*—(1) *Repair.* Repair is the restoration of any damaged or impaired part to an effective and safe condition.

(2) *Alteration.* Alteration is a structural modification to or departure from an approved design or existing construction.

(3) *Access or inspection openings.* Access or inspection openings are holes cut in the shells or heads of boilers or boiler pressure parts for the purpose of inspection and cleaning.

(f) *Gage (or gauge) pressure.* Gage pressure is the difference between the pressure at the point being measured and the ambient pressure for the gage. It is measured in units such as pounds per square inch gage (p.s.i.g.).

(g) *Maximum allowable working pressure.* For a definition of maximum allowable working pressure, see PG–21 of Section I of the ASME BPVC.

■ 31. Amend § 52.01–5 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (b)(3), remove the text ''section I of the ASME Code'' and add, in its place, the text ''Section I of the ASME BPVC''.

The revision reads as follows:

§ 52.01–5 Plans

(a) Manufacturers intending to fabricate boilers to be installed on vessels must submit detailed plans as required by subpart 50.20 of this subchapter. The plans, including design calculations, must be certified by a registered professional engineer as meeting the design requirements in this part and in Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

* * * * *

§ 52.01–35 [Amended]

■ 32. Amend § 52.01–35 as follows:

■ a. In paragraph (a), remove the text ''table 54.01–5(a)'' and add, in its place the text ''table 1 to § 54.01–5''; and

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

§ 52.01–40 [Amended]

■ 33. In § 52.01–40, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 34. Revise § 52.01–50 to read as follows:

§ 52.01–50 Fusible plugs (modifies A–19 through A–21).

(a) Fusible plugs must comply with the requirements of A19 and A20 of section I of the ASME BPVC (incorporated by reference; see § 52.01–1) and be stamped on the casing with the name of the manufacturer, and on the water end of the fusible metal ''ASME Std.'' Fusible plugs are not permitted where the maximum steam temperature to which they are exposed exceeds 218 °C (425 °F).

(b)(1) Fusible plugs must be cleaned and will be examined by the marine inspector at each inspection for certification, periodic inspection, or if the boiler is opened for repair or inspection. If in the marine inspector's opinion the condition of any plug is satisfactory, it may be continued in use.

(2) When fusible plugs are renewed at other than the inspection for certification and no marine inspector is in attendance, the Chief Engineer must report the renewal to the Officer in Charge, Marine Inspection. This report must contain the following information:

(i) Name and official number of vessel.

(ii) Date of renewal of fusible plugs.

(iii) Number and location of fusible plugs renewed in each boiler.

(iv) Manufacturer and rating of each plug.

(v) Reason for renewal.

■ 35. Amend § 52.01–55 as follows:

■ a. Revise the section heading and paragraph (a); and

■ b. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 52.01–55 Maximum allowable working pressure.

(a) The piping system, machinery, and appurtenances must meet the requirements of this subchapter for the boiler maximum allowable working pressure. Only the Commandant may grant an increase in pressure.

* * * * *

§ 52.01–90 [Removed and Reserved]

■ 36. Remove and reserve § 52.01–90.

■ 37. Amend § 52.01–95 as follows:

■ a. Revise paragraph (a);

■ b. In paragraph (b)(1), remove the word ''shall'' and add, in its place, the word ''must'';

■ c. Revise paragraph (b)(2);

■ d. In paragraphs (b)(3) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ e. In paragraph (d), remove the word ''temperature'' and add, in its place, the word ''temperatures''; and

■ f. Revise paragraphs (e) and (f).

The revisions read as follows:

§ 52.01–95 Design (modifies PG–16 through PG–31 and PG–100).

(a) *Requirements.* Boilers required to be designed to this part must meet the requirements of PG–16 through PG–31 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

(b) * * *

(2) Controls must be provided to ensure that the maximum temperature at the superheater outlets does not exceed the allowable temperature limit of the material used in the superheater outlet, in the steam piping, and in the associated machinery under all operating conditions. Visible and audible alarms indicating excessive superheat must be provided in any installation in which the superheater outlet temperature exceeds 454 °C (850 °F). The setting of the excessive superheat alarms must not exceed the maximum allowable temperature of the superheater outlet, which may be limited by the boiler design, the main steam piping design, or the temperature limits of other equipment subjected to the temperature of the steam.

* * * * *

(e) *Stresses.* (*Modifies PG–22.*) The stresses due to hydrostatic head must be taken into account in determining the minimum thickness of the shell or head of any boiler pressure part unless noted otherwise. Additional stresses, imposed by effects other than internal pressure or static head, which increase the average stress over substantial sections of the shell or head by more than 10 percent of the allowable stress, must be taken into account. These effects include the weight of the vessel and its contents, method of support, impact loads, superimposed loads, localized stresses due to the reactions of supports, stresses due to temperature gradients and dynamic effects.

(f) *Cylindrical components under internal pressure.* (*Modifies PG–27.*) The minimum required thickness and maximum allowable working pressure of boiler piping, tubes, drums and headers must be as required by the formula in PG–27 of Section I of the ASME BPVC except that threaded boiler tubes are not permitted.

■ 38. Amend § 52.01–100 by revising paragraphs (a) and (b) to read as follows:

§ 52.01–100 Openings and compensation (modifies PG–32 through PG–39, PG–42 through PG–55).

(a) The rules for openings and compensation must be as indicated in PG–32 through PG–55 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

(b) (*Modifies PG–39.*) Pipe and nozzle necks must be attached to vessel walls as indicated in PG–39 of Section I of the ASME BPVC except that threaded connections must not be used under any of the following conditions:

* * * * *

■ 39. Amend § 52.01–105 as follows:

■ a. Revise paragraph (a);

■ b. In paragraph (b), remove the text ''section I of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section I of the ASME BPVC'';

■ c. In paragraph (d), remove the subject heading;

■ d. In paragraphs (d)(1) and (2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ e. In paragraph (e), remove the subject heading; and

■ f. Revise paragraphs (e)(1) and (f).

The revisions read as follows:

§ 52.01–105 Piping, valves and fittings (modifies PG–58 and PG–159).

(a) Boiler external piping within the jurisdiction of the ASME BPVC must be as indicated in PG–58 and PG–59 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section. Piping outside the jurisdiction of the ASME BPVC must meet the appropriate requirements of part 56 of this subchapter.

* * * * *

(e) * * * (1) Firetube and drum type boilers must be fitted with a surface and a bottom blowoff valve or cock attached directly to the boiler or to a short distance piece. The bottom blowoff valve must be attached to the lowest part of the boiler or fitted with an internal pipe leading to the lowest point inside the boiler. Boilers equipped with a continuous blowdown valve on the steam drum are not required to be fitted with an additional surface blowoff connection.

* * * * *

(f) Where dry pipes are used, they must be provided with drains at each end to prevent an accumulation of water.

■ 40. Amend § 52.01–110 as follows:

■ a. Revise paragraphs (a) and (b)(1);

■ b. In paragraphs (b)(2)through (4), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ c. Revise paragraphs (c) and (d);

■ d. Remove and reserve paragraph (e)(2) and remove paragraph (f);

■ e. Redesignate paragraphs (g) and (h) as paragraphs (f) and (g), respectively; and
■ f. Revise newly redesignated paragraph (f).

The revisions read as follows:

§ 52.01–110 Water-level indicators, water columns, gauge-glass connections, gauge cocks, and pressure gauges (modifies PG–60).

(a) *Boiler water level devices.* Boiler water level devices must be as indicated in PG–60 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

* * * * *

(b) * * * (1) Each boiler, except those of the forced circulation type with no fixed water line and steam line, must have two independent means of indicating the water level in the boiler connected directly to the head or shell. One must be a gage lighted by the emergency electrical system (See subpart 112.15 of subchapter J (Electrical Engineering) of this chapter). The secondary indicator may consist of a gage glass, or other acceptable device. Where the allowance pressure exceeds 1724 kPa (250 psi), gage glasses must be of the flat type instead of the common tubular type.

* * * * *

(c) *Water columns.* (*Modifies PG–60.2.*) The use of water columns is generally limited to firetube boilers. Water column installations must minimize the effect of ship motion on water level indication. Water columns must be fitted directly to the heads or shells of boilers or drums, or if necessary, connected thereto by a distance piece both at the top and bottom of the water columns. Shutoff valves used in the pipe connections between the boiler and water column must be locked or sealed open. Water column piping must not be fitted inside the uptake, the smoke box, or the casing. Water columns must be fitted with suitable drains. Cast iron fittings are not permitted.

(d) *Gage glass connections.* (*Modifies PG–60.3.*) Gage glasses and gage cocks must be connected directly to the head or shell of a boiler as indicated in paragraph (b)(1) of this section.

* * * * *

(f) *Salinometer cocks.* In vessels operating in salt water, each boiler shall be equipped with a salinometer cock or valve. They must not be attached to the water gage or water column.

* * * * *

§ 52.01–115 [Amended]

■ 41. Amend § 52.01–115 as follows:
■ a. Remove the text ''section I of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section I of the ASME BPVC''; and
■ b. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.
■ 42. Amend § 52.01–120 as follows:
■ a. In paragraph (a)(1):
■ i. Remove the text ''section I of the ASME Boiler and Pressure Vessel Code'' wherever it appears and add, in its place, the text ''Section I of the ASME BPVC''; and
■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';
■ b. In paragraph (a)(2)(i), remove the text ''section I of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section I of the ASME BPVC'';
■ c. In paragraph (a)(3), remove the word ''shall'' and add, in its place, the word ''must'';
■ d. Revise paragraphs (a)(4) though (6) and (a)(8);
■ e. In paragraph (a)(9), remove the word ''shall'' and add, in its place, the word ''must''; and
■ f. Revise paragraphs (b)(1) and (2), (c), and (d).

The revisions read as follows:

§ 52.01–120 Safety valve and safety relief valves (modifies PG–67 through PG–73).

(a) * * *

(4) (*Modifies PG–70.*) The total rated relieving capacity of drum and superheater safety valves as certified by the valve manufacturer must not be less than the maximum generating capacity of the boiler which must be determined and certified by the boiler manufacturer. This capacity shall be in compliance with PG–70 of Section I of the ASME BPVC.

(5) In the event the maximum steam generating capacity of the boiler is increased by any means, the relieving capacity of the safety valves must be checked by an inspector, and, if necessary, valves of increased relieving capacity must be installed.

(6) (*Modifies PG–67.*) Drum safety valves must be set to relieve at a pressure not in excess of that allowed by the Certificate of Inspection. Where for any reason this is lower than the pressure for which the boiler was originally designed and the revised safety valve capacity cannot be recomputed and certified by the valve manufacturer, one of the tests described in PG–69 of section I of the ASME BPVC must be conducted in the presence of the Inspector to insure that the relieving capacity is sufficient at the lower pressure.

* * * * *

(8) Lever or weighted safety valves now installed may be continued in use and may be repaired, but when repairs are not possible, lever or weighted safety valves must be replaced by valves conforming to the requirements of this section.

* * * * *

(b)(1) (*Modifies PG–68.*) Superheater safety valves must be as indicated in PG–68 of Section I of the ASME BPVC except as noted otherwise in this paragraph.

(2) The setting of the superheater safety valve must not exceed the design pressure of the superheater outlet flange or the main steam piping beyond the superheater. To prevent damage to the superheater, the drum safety valve must be set at a pressure not less than that of the superheater safety valve setting plus 5 pounds, plus the pressure drop through the superheater and associated piping, including the desuperheater if fitted. See also § 52.01–95(b)(1).

* * * * *

(c)(1) (*Modifies PG–71.*) Safety valves must be installed as indicated in PG–71 of Section I of the ASME BPVC except as noted otherwise in this paragraph (c).

(2) The final setting of boiler safety valves must be checked and adjusted under steam pressure and, if possible, while the boiler is on line and at operating temperatures, to the satisfaction of a marine inspector who, upon acceptance, must seal the valves. This regulation applies to both drum and superheater safety valves of all boilers.

(3) The safety valve body drains required by PG–71 of Section I of the ASME BPVC must be run as directly as possible from the body of each safety valve, or the drain from each safety valve may be led to an independent header common only to boiler safety valve drains. No valves of any type may be installed in the leakoff from drains or drain headers and they must be led to suitable locations to avoid hazard to personnel.

(d)(1) (*Modifies PG–72.*) The operation of safety valves must be as indicated in PG–72 of Section I of the ASME BPVC except as noted in paragraph (d)(2) of this section.

(2) (*Modifies PG–73.*) The lifting device required by PG–73.1.3 of Section I of the ASME BPVC must be fitted with suitable relieving gear so arranged that the controls may be operated from the fireroom or engineroom floor.

■ 43. Amend § 52.01–130 as follows:
■ a. In paragraphs (a), (b)(1) and (2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ b. Remove paragraph (b)(3);

■ c. Redesignate paragraphs (b)(4) through (6) as paragraphs (b)(3) through (5), respectively;
■ d. In newly redesignated paragraph (b)(3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ e. Revise newly redesignated paragraphs (b)(4) and (5); and
■ f. In paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 52.01–130 Installation.

* * * * *

(b) * * *

(4) The distance between a boiler and a compartment containing fuel oil must not be less than 24 inches.

(5) All oil-burning boilers must be provided with oiltight drip pans under the burners to prevent oil draining into the bilges.

* * * * *

■ 44. Revise § 52.01–135 to read as follows:

§ 52.01–135 Inspection and tests (modifies PG–90 through PG–100).

(a) *Requirements.* Inspection and test of boilers and boiler pressure parts must be as indicated in PG–90 through PG–100 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

(b) *Inspection personnel.* The inspections required by PG–90 through PG–100 of Section I of the ASME BPVC must be performed by the ''Authorized Inspector'' as defined in PG–91 of Section I of the ASME BPVC. The Authorized Inspector must hold a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors. After installation, boilers will be inspected for compliance with this part by the ''Marine Inspector'' as defined in § 50.10–15 of this subchapter.

(c) *Hydrostatic test* (*Modifies PG–99*). Each new boiler must be hydrostatically tested after installation to 11–2 times the maximum allowable working pressure as indicated in PG–99 of Section I of the ASME BPVC. Before the boilers are insulated, accessible parts of the boiler must be emptied, opened, and all interior surfaces must be examined by the marine inspector to ascertain that no defects have occurred due to the hydrostatic test.

(d) *Operating tests.* In addition to hydrostatic tests prescribed in paragraph (c) of this section, automatically controlled propulsion and auxiliary boilers must be subjected to operating tests as specified in §§ 61.30–20, 61.35–1, 61.35–3, 62.30–10, 63.15–9, 63.25–3, and 63.25–5 of this chapter, as appropriate, or as directed by the Officer in Charge, Marine Inspection, for propulsion boilers. These tests are to be performed after final installation.

■ 45. Amend § 52.01–140 as follows:
■ a. Revise paragraph (a);
■ b. In paragraph (b)(1)(ii), remove the words ''Code Symbol'' and add, in its place, the word ''symbol''; and
■ c. Revise paragraphs (b)(3), (c), and (d).

The revisions read as follows:

§ 52.01–140 Certification by stamping (modifies PG–104 through PG–113).

(a) All boilers built in accordance with this part must be stamped with the appropriate ASME symbol as required by PG–104 through PG–113 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

(b) * * *

(3) Heating boilers built to Section I of the ASME BPVC, as permitted by § 53.01–10(e) of this subchapter, do not require Coast Guard stamping but must receive full ASME stamping including the appropriate code symbol.

(c) The data must be legibly stamped and must not be obliterated during the life of the boiler. In the event that the portion of the boiler upon which the data is stamped is to be insulated or otherwise covered, a metal nameplate as described in PG–106.6 of Section I of the ASME BPVC must be furnished and mounted. The nameplate is to be maintained in a legible condition so that the data may be easily read.

(d) Safety valves must be stamped as indicated in PG–110 of the ASME BPVC.

■ 46. Revise § 52.01–145 to read as follows:

§ 52.01–145 Manufacturer's data report forms (modifies PG–112 and PG–113).

The manufacturer's data report forms required by PG–112 and PG–113 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) must be made available to the marine inspector for review. The Authorized Inspector's National Board commission number must be included on the manufacturers' data report forms.

■ 47. Revise § 52.05–1 to read as follows:

§ 52.05–1 General (modifies PW–1 through PW–54).

Boilers and component parts, including piping, that are fabricated by welding must be as indicated in PW–1 through PW–54 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this subpart.

■ 48. Revise § 52.05–15 to read as follows:

§ 52.05–15 Heat treatment (modifies PW–10).

Vessels and vessel parts must be preheated and postweld heat treated in accordance with PW–38 and PW–39 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) (reproduces PW–10). This includes boiler parts made of pipe material, even though they may be nondestructively examined under § 52.05–20.

■ 49. Revise § 52.05–20 to read as follows:

§ 52.05–20 Radiographic and ultrasonic examination (modifies PW–11 and PW–41.1).

Radiographic and ultrasonic examination of welded joints must be as described in PW–11 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1). Parts of boilers, fabricated of pipe material such as drums, shells, downcomers, risers, cross pipes, headers, and tubes containing only circumferentially welded butt joints, must be nondestructively examined as required by § 56.95–10 of this subchapter.

■ 50. Revise § 52.05–30 to read as follows:

§ 52.05–30 Minimum requirements for attachment welds (modifies PW–16).

(a) The location and minimum size of attachment welds for nozzles and other connections must be as required by PW–16 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

(b) When nozzles or couplings are attached to boilers, as shown in Figure PW–16 (a) and (c) of Section I of the ASME BPVC, and are welded from one side only, backing strips must be used unless it can be determined visually or by nondestructive test methods that complete penetration has been obtained.

(c) When attachments as shown in Figure PW–16 (y) and (z) of Section I of the ASME BPVC are employed they must be limited to 2-inch pipe size for pressure exceeding 150 pounds per square inch.

■ 51. Amend § 52.05–45 as follows:
■ a. Revise paragraph (a);
■ b. In paragraph (b), remove the text, ''section I of the ASME Boiler and Pressure Vessel Code'', and add, in its place, the text, ''Section I of the ASME BPVC''; and
■ c. Revise paragraph (c).

The revisions read as follows:

§ 52.05–45 Circumferential joints in pipes, tubes and headers (modifies PW–41).

(a) Circumferential welded joints of pipes, tubes and headers must be as required by PW–41 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

* * * * *

(c) (*Modifies PW–41.5*) Butt welded connections must be provided whenever radiography is required by § 56.95–10 of this subchapter for the piping system in which the connection is to be made. When radiography is not required, welded socket or sleeve type joints meeting the requirements of PW–41.5 of Section I of the ASME BPVC may be provided.

■ 52. Revise § 52.15–1 to read as follows:

§ 52.15–1 General (modifies PWT–1 through PWT–15).

Watertube boilers and parts thereof must be as indicated in PWT–1 through PWT–15 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this subpart.

■ 53. Revise § 52.15–5 to read as follows:

§ 52.15–5 Tube connections (modifies PWT–9 and PWT–11).

(a) Tubes, pipe and nipples must be attached to sheets, heads, headers, and fittings as indicated in PWT–11 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

(b) (*Replaces PWT–9.2 and PWT–11.3.*) Threaded boiler tubes are not permitted as described by PWT–9.2 and PWT–11.3 of Section I of the ASME BPVC.

(c) In welded wall construction employing stub and welded wall panels that are field welded, 10 percent of the field welds must be checked using any acceptable nondestructive test method.

(d) Nondestructive testing of the butt welded joints must meet the requirements of § 56.95–10 of this subchapter.

■ 54. Revise § 52.20–1 to read as follows:

§ 52.20–1 General (modifies PFT–1 through PFT–49).

Firetube boilers and parts thereof must be as indicated in PFT–1 through PFT–49 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this subpart.

■ 55. Revise § 52.20–17 to read as follows:

§ 52.20–17 Opening between boiler and safety valve (modifies PFT–44).

Discharge pipes must be installed in accordance with the requirements of § 52.01–105.

■ 56. Revise § 52.20–25 to read as follows:

§ 52.20–25 Setting (modifies PFT–46).

(a) The method of supporting firetube boilers must be as indicated in PFT–46 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1) except as noted otherwise in this section.

(b) The foundations must meet the requirements of § 52.01–130.

§ 52.25–1 [Amended]

■ 57. In § 52.25–1, remove the text ''table 54.01–5(a)'' and add, in its place, the text ''table 1 to § 54.01–5''.

■ 58. Revise § 52.25–3 to read as follows:

§ 52.25–3 Feedwater heaters (modifies PFH–1).

Feedwater heaters must meet the requirements in PFH–1 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

■ 59. Revise § 52.25–5 to read as follows:

§ 52.25–5 Miniature boilers (modifies PMB–1 through PMB–21).

Miniature boilers must meet the requirements in PMB–1 through PMB–21 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

■ 60. Revise § 52.25–7 to read as follows:

§ 52.25–7 Electric boilers (modifies PEB–1 through PEB–19).

Electric boilers required to comply with this part must meet the requirements in PEB–1 through PEB–19 except PEB–3 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

■ 61. Revise § 52.25–10 to read as follows:

§ 52.25–10 Organic fluid vaporizer generators (modifies PVG–1 through PVG–12).

(a) Organic fluid vaporizers must meet the requirements of PVG–1 through PVG–12 of Section I of the ASME BPVC (incorporated by reference; see § 52.01–1).

(b) The Commandant must approve the application and end use of organic fluid vaporizer generators.

§ 52.25–15 [Amended]

■ 62. In § 52.25–15(a), remove the word ''shall'' and add, in its place, the word ''must''.

PART 53—HEATING BOILERS

■ 63. The authority citation for part 53 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

■ 64. Revise § 53.01–1 to read as follows:

§ 53.01–1 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(a) *American Society of Mechanical Engineers (ASME),* Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers (2019) (''Section I of the ASME BPVC''); IBR approved for § 53.01–10.

(2) ASME Boiler and Pressure Vessel Code, Section IV, Rules for Construction of Heating Boilers (2019) (''Section IV of the ASME BPVC''); IBR approved for §§ 53.01–3, 53.01–5, 53.01–10, 53.05–1, 53.05–2, 53.05–3, 53.05–5, 53.10–1, 53.10–3, 53.10–10, 53.10–15, 53.12–1.

(b) *Underwriters Laboratories Inc.,* 333 Pfingston Road, Northbrook, IL 60062–2096; *www.ul.com.*

(1) UL 174, Standard for Safety, Household Electric Storage Tank Water Heaters, Eleventh Edition, April 29, 2004 (reapproved in 2016) (''UL 174''); IBR approved for § 53.01–10.

(2) UL 1453, Standard for Safety, Electric Booster and Commercial Storage Tank Water Heaters, Sixth Edition, March 29, 2016 (''UL 1453''); IBR approved for § 53.01–10.

■ 65. Amend § 53.01–3 as follows:

■ a. Revise the section heading and paragraph (a);
■ b. In paragraph (b), remove the words ''Boiler and Pressure Code'' wherever they appear and add, in their place, the text ''BPVC''; and
■ c. In paragraph (c), remove the text ''section IV of the ASME Boiler and Pressure Code'' and add, in its place, the text ''Section IV of the ASME BPVC''.

The revisions read as follows:

§ 53.01–3 Adoption of Section IV of the ASME BPVC.

(a) Heating boilers must be designed, constructed, inspected, tested, and stamped in accordance with Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1) as limited, modified, or replaced by specific requirements in this part. The provisions in the appendices to Section IV of the ASME BPVC are adopted and must be followed when the requirements in Section IV make them mandatory. For general information, table § 53.01–3(a) lists the various paragraphs in Section IV of the ASME BPVC that are limited, modified, or replaced by regulations in this part.

TABLE § 53.01–3(a)—LIMITATIONS AND MODIFICATIONS IN THE ADOPTION OF SECTION IV OF THE ASME BPVC

Paragraphs in Section IV of the ASME BPVC and disposition	Unit of this part
HG–100 modified by	53.01–5(b)
HG–101 replaced by	53.01–10
HG–400 modified by	53.05–1
HG–400.2 modified by	53.05–2
HG–401 modified by	53.05–1
HG–401.2 modified by	53.05–3
HG–500 through HG–540 modified by	53.10–3
HG–600 through HG–640 modified by	53.12–1

Note 1 to table § 53.01–3(a): The references to specific provisions in Section IV of the ASME BPVC are coded. The first letter, such as ''H,'' refers to Section IV. The second letter, such as ''G,'' refers to a part or subpart in Section IV. The number following the letters refers to the paragraph so numbered in the text of the part or subpart in Section IV.

* * * * *

■ 66. Revise § 53.01–5 to read as follows:

§ 53.01–5 Scope (modifies HG–100).

(a) The regulations in this part apply to steam heating boilers, hot water boilers (which include hot water heating boilers and hot water supply boilers), and to appurtenances thereto. The requirements in this part must be used in conjunction with section IV of the ASME BPVC (incorporated by reference; see § 53.01–1). Table 1 to § 54.01–5 of this subchapter gives a breakdown by parts in this subchapter of the regulations governing various types of pressure vessels and boilers.

(b) (*Modifies HG–100.*) The requirements of part HG of section IV of the ASME BPVC must be used except as noted otherwise in this part.

■ 67. Amend § 53.01–10 as follows:
■ a. Revise paragraph (a);
■ b. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ c. In paragraph (c)(1), remove the words ''46 CFR'' and add, in their place, the symbol ''§ '';
■ d. In paragraph (c)(2), remove the words ''shall not be'' and add, in their place, the words ''are not''; and
■ e. Revise paragraph (d), the introductory text to paragraph (e), and paragraph (e)(1).

The revisions read as follows:

§ 53.01–10 Service restrictions and exceptions (replaces HG–101).

(a) *General.* The service restrictions and exceptions must be as indicated in this section in lieu of the requirements of HG–101 of Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1).

* * * * *

(d) *Exhaust gas boilers.* Exhaust gas type boilers must be restricted to a working pressure equal to or less than 103 kPa gage (15 psig) and an operating temperature equal to or less than 454 °C (850 °F). The design temperature of parts exposed to the exhaust gas must be the maximum temperature that could normally be produced by the source of exhaust gas. This temperature must be verified by testing or by the manufacturer of the engine or other equipment producing the exhaust.

(e) *ASME BPVC Section I.* Heating boilers whose operating conditions are within the service restrictions of paragraph (b)(1) of this section may be constructed in accordance with Section I of the ASME BPVC (incorporated by reference; see § 53.01–1). In addition, these heating boilers must:

(1) Be stamped with the appropriate ASME symbol in accordance with Section I of the ASME BPVC;

* * * * *

§ 53.05–1 [Amended]

■ 68. Amend § 53.05–1(a) as follows:
■ a. Remove the text ''section IV of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section IV of the ASME BPVC''; and
■ b. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

§ 53.05–2 [Amended]

■ 69. Amend § 53.05–2(a) as follows:
■ a. Remove the text ''section IV of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section IV of the ASME BPVC''; and
■ b. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

§ 53.05–3 [Amended]

■ 70. Amend § 53.05–3 as follows:
■ a. Remove the text ''section IV of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section IV of the ASME BPVC''; and
■ b. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

§ 53.05–5 [Amended]

■ 71. Amend § 53.05–5 as follows:
■ a. Remove the text ''section IV of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section IV of the ASME BPVC''; and
■ b. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

■ 72. Revise § 53.10–1 to read as follows:

§ 53.10–1 General

The tests, inspection, stamping, and reporting of heating boilers must be as indicated in article 5, part HG of Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1) except as noted otherwise in this subpart.

■ 73. Amend § 53.10–3 by revising paragraph (a) to read as follows:

§ 53.10–3 Inspection and tests (modifies HG–500 through HG–540).

(a) The inspections required by HG–500 through HG–540 must be performed by the ''Authorized Inspector'' as defined in HG–515 of Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1). The Authorized Inspector must hold a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors. After installation, heating boilers must be inspected for compliance with this part by a marine inspector.

* * * * *

■ 74. Revise § 53.10–10 to read as follows:

§ 53.10–10 Certification by stamping.

Stamping of heating boilers must be as indicated in HG–530 of Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1).

■ 75. Revise § 53.10–15 to read as follows:

§ 53.10–15 Manufacturer's data report forms.

The manufacturer's data report forms required by HG–520 of Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1) must be made available to the marine inspector for review. The Authorized Inspector's National Board commission number must be included on the manufacturer's data report forms.

■ 76. Amend § 53.12–1 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 53.12–1 General (modifies HG–600 through HG–640).

(a) The instruments, fittings and controls for heating boilers must be as indicated in HG–600 through HG–640 of Section IV of the ASME BPVC (incorporated by reference; see § 53.01–1) except as noted otherwise in this section.

* * * * *

PART 54—PRESSURE VESSELS

■ 77. The authority citation for part 54 continues to read as follows:

Authority: 33 U.S.C. 1509; 43 U.S.C. 1333; 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

■ 78. Revise § 54.01–1 to read as follows:

§ 54.01–1 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(a) *American Society of Mechanical Engineers* (*ASME*), Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Rules for Construction of Pressure Vessels (2019) (''Section VIII of the ASME BPVC''); IBR approved for §§ 54.01–2, 54.01–5, 54.01–18, 54.01–25, 54.01–30, 54.01–35, 54.03–1, 54.05–1, 54.10–1, 54.10–3, 54.10–5, 54.10–10, 54.10–15, 54.15–1, 54.15–5, 54.15–10, 54.15–13, 54.20–1, 54.20–3, 54.25–1, 54.25–3, 54.25–8, 54.25–10, 54.25–15, 54.25–20, 54.30–3, 54.30–5, 54.30–10.

(2) [Reserved]

(b) *ASTM International,* 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959, 877–909–2786, *www.astm.org.*

(1) ASTM A20/A20M–19, Standard Specification for General Requirements for Steel Plates for Pressure Vessels, December 4, 2019 (''ASTM A20/A20M''); IBR approved for §§ 54.05–10, 54.25–10.

(2) ASTM A203/A203M–17, Standard Specification for Pressure Vessel Plates, Alloy Steel, Nickel, November 1, 2017 (''ASTM A203/A203M''); IBR approved for § 54.05–20.

(3) ASTM A370–19, Standard Test Methods and Definitions for Mechanical Testing of Steel Products, July 1, 2019 (''ASTM A370''); IBR approved for § 54.25–20.

(4) ASTM E23–18, Standard Test Methods for Notched Bar Impact Testing of Metallic Materials, June 1, 2018 (''ASTM E23''); IBR approved for § 54.05–5, and

(5) ASTM E208–19, Standard Test Method for Conducting Drop-Weight Test to Determine Nil-Ductility Transition Temperature of Ferritic Steel, October 1, 2019 (''ASTM E208''); IBR approved for § 54.05–5.

(c) *Compressed Gas Association (CGA),* 14501 George Carter Way, Chantilly, VA 20151, *www.cganet.com.*

(1) CGA S–1.2–2009, Pressure Relief Device Standards—Part 2—Portable Containers for Compressed Gases, Ninth Edition, January 1, 2009 (''CGA S–1.2''); IBR approved for § 54.15–10.

(2) [Reserved]

(d) Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS), 127 Park Street NE, Vienna, VA 22180–4602; 703–281–6613; *www.msshq.org.*

(1) ANSI/MSS SP–25–2018, Standard Marking System for Valves, Fittings, Flanges and Unions, March, 2018 (''MSS SP–25''); IBR approved for § 54.01–25.

(2) [Reserved]

■ 79. Amend § 54.01–2 as follows:

■ a. Revise the section heading and paragraphs (a) and (b); and

■ b. In paragraph (c), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''.

The revisions read as follows:

§ 54.01–2 Adoption of Division 1 of Section VIII of the ASME BPVC.

(a) Pressure vessels must be designed, constructed, and inspected in accordance with Section VIII of the ASME BPVC (incorporated by reference, see § 54.01–1), as limited, modified, or replaced by specific requirements in this part. The provisions in the appendices to Section VIII of the ASME BPVC are adopted and must be followed when the requirements in Section VIII make them mandatory. For general information, table § 54.01–2(a) lists the various paragraphs in Section VIII of the ASME BPVC that are limited, modified, or replaced by regulations in this part.

TABLE § 54.01–2(a)—LIMITATIONS AND MODIFICATIONS IN THE ADOPTION OF SECTION VIII OF THE ASME BPVC

Paragraphs in Section VIII of the ASME BPVC and disposition	Unit of this part
U–1 and U–2 modified by	54.01–5 through 54.01–15.
U–1(c) replaced by	54.01–5.
U–1(d) replaced by	54.01–5(a) and 54.01–15.
U–1(g) modified by	54.01–10.
U–1(c)(2) modified by	54.01–15.
UG–11 modified by	54.01–25.
UG–22 modified by	54.01–30.
UG–25 modified by	54.01–35.
UG–28 modified by	54.01–40.
UG–84 replaced by	54.05–1.

TABLE § 54.01–2(a)—LIMITATIONS AND MODIFICATIONS IN THE ADOPTION OF SECTION VIII OF THE ASME BPVC—Continued

Paragraphs in Section VIII of the ASME BPVC and disposition	Unit of this part
UG–90 and UG–91 replaced by	54.10–3.
UG–92 through UG–103 modified by	54.10–1 through 54.10–15.
UG–98 reproduced by	54.10–5.
UG–115 through UG–120 modified by	54.10–1.
UG–116, except (j), replaced by	54.10–20(a).
UG–116(j) replaced by	54.10–20(b).
UG–117 replaced by	54.10–20(c).
UG–118 replaced by	54.10–20(a).
UG–119 modified by	54.10–20(d).
UG–120 modified by	54.10–25.
UG–125 through UG–137 modified by	54.15–1 through 54.15–15.
UW–1 through UW–65 modified by	54.20–1.
UW–2(a) replaced by	54.01–5(b) and 54.20–2.
UW–2(b) replaced by	54.01–5(b) and 54.20–2.
UW–9, UW–11(a), UW–13, and UW–16 modified by	54.20–3.
UW–11(a) modified by	54.25–8.
UW–26, UW–27, UW–28, UW–29, UW–47, and UW–48 modified by	54.20–5.
UB–1 modified by	54.23–1
UB–2 modified by	52.01–95(d) and 56.30–30(b)(1).
UCS–6 modified by	54.25–3.
UCS–56 modified by	54.25–7.
UCS–57, UNF–57, UHA–33, and UHT–57 modified by	54.25–8.
UCS–65 through UCS–67 replaced by	54.25–10.
UHA–23(b) and UHA–51 modified by	54.25–15.
UHT–5(c), UHT–6, and UHT–23 modified by	54.25–20.
UHT–82 modified by	54.25–20 and 54.25–25.
Appendix 3 modified by	54.15–3.

Note 1 to table § 54.01–2(a): The references to specific provisions in Section VIII of the ASME BPVC are coded. The first letter, such as ''U,'' refers to Division 1 of Section VIII. The second letter, such as ''G,'' refers to a subsection within Section VIII. The number refers to the paragraph within the subsection.

(b) References to the ASME BPVC, such as paragraph UG–125, indicate:

U = Division 1 of Section VIII of the ASME BPVC.

G = Part containing general requirements.

125 = Paragraph within part.

* * * * *

§ 54.01–5 [Amended]

■ 80. Amend § 54.01–5 as follows:

■ a. In paragraph (a), remove the text ''table 54.01–5(a)'' and add, in its place, the text ''table 1 to § 54.01–5'';

■ b. In paragraph (b), remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5'';

■ c. In paragraph (c)(3):

■ i. Remove the text ''division 1, of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Division 1, of the ASME BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ d. In paragraph (d)(5), remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5'';

■ e. In paragraph (e), remove the text ''section VIII, division 1, of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII, Division 1, of the ASME BPVC'';

■ f. Redesignate table 54.01–5(a) as table 1 to § 54.01–5 and table 54.01–5(b) as table 2 to § 54.01–5; and

■ g. In newly redesignated table 2 to § 54.01–5:

■ i. Remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5'';

■ ii. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' wherever it appears and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ iii. Remove the text ''46 CFR'' wherever it appears and add, in its place, the symbol ''§ ''.

§ 54.01–10 [Amended]

■ 81. In § 54.01–10, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 82. Amend § 54.01–15 by revising the section heading and paragraphs (a)(2) and (3)(i) to read as follows:

§ 54.01–15 Exemptions from shop inspection and plan approval (modifies U–1(c)(2)).

(a) * * *

(2) (i) Hot water supply storage tanks heated by steam or any other indirect means when none of the following limitations is exceeded:

(A) A heat input of 58 kW (200,000 B.t.u. per hour);

(B) A water temperature of 93 °C (200 °F);

(C) A nominal water-containing capacity of 454 liters (120 gallons); or

(D) A pressure of 689 kPa (100 psig).

(ii) The exemption of any tank under paragraph (a)(2) of this section requires that it must be fitted with a safety relief valve of at least 1-inch diameter, set to relieve below the maximum allowable working pressure of the tank.

(3)(i) Vessels having an internal operating pressure not exceeding 103 kPa (15 psig) with no limitation on size.

* * * * *

■ 83. Amend § 54.01–18 as follows:

■ a. Revise paragraph (a);

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must'';

■ c. In paragraph (b)(5):

■ i. Remove the text ''section VIII of section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ d. Add paragraph (c).

The revision and addition read as follows:

§ 54.01–18 Plan approval.

(a) Manufacturers intending to fabricate pressure vessels, heat exchangers, evaporators, and similar appurtenances, covered by the regulations in this part must submit detailed plans in accordance with subpart 50.20 of this subchapter except as provided in paragraph (c) below.

* * * * *

(c) Plans for Class I, II, and III pressure vessels with the ASME ''U'' stamp that do not contain hazardous materials are not required to be submitted for approval (see § 54.01–5(e)).

■ 84. Amend § 54.01–25 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (b):

■ i. Remove the word ''shall'' and add, in its place, the word ''must''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

The revision reads as follows:

§ 54.01–25 Miscellaneous pressure components (modifies UG–11).

(a) Pressure components for pressure vessels must be as required by UG–11 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) except as noted otherwise in this section.

* * * * *

■ 85. Amend § 54.01–30 as follows:

■ a. Revise paragraph (a); and

■ b. In the introductory text to paragraph (b), remove the words ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in their place, the text ''Section VIII of the ASME BPVC''.

The revision reads as follows:

§ 54.01–30 Loadings (modifies UG–22).

(a) The loadings for pressure vessels must be as required by UG–22 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) except as noted otherwise in this section.

* * * * *

■ 86. Amend § 54.01–35 as follows:

■ a. Revise paragraph (a);

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must'';

■ c. In paragraph (b)(4), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC'';

■ d. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''; and

■ e. Designate the note following paragraph (d) as paragraph (e) and revise newly designated paragraph (e).

The revisions read as follows:

§ 54.01–35 Corrosion (modifies UG–25).

(a) Vessels or portions of vessels subject to corrosion must be as required by UG–25 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) except as noted otherwise in this section.

* * * * *

(e) No applied linings except as provided in part UCL of Section VIII of the ASME BPVC are acceptable.

§ 54.01–40 [Amended]

■ 87. In § 54.01–40(b), remove the word ''shall'' and add, in its place, the word ''must''.

■ 88. Revise § 54.03–1 to read as follows:

§ 54.03–1 Scope.

The pressure vessels for low temperature operation must be as required by Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) as modified by this subpart.

■ 89. Revise § 54.05–1 to read as follows:

§ 54.05–1 Scope (replaces UG–84).

The toughness tests of materials used in pressure vessels must be as required by this subpart in lieu of requirements in UG–84 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1).

§ 54.05–3 [Amended]

■ 90. Amend § 54.05–3 as follows:

■ a. In the introductory text to paragraph (a), remove the word ''shall''; and

■ b. In paragraph (a)(2), remove the word ''shall'' and add, in its place, the word ''must''.

■ 91. Amend § 54.05–5 as follows:

■ a. Revise paragraphs (a) and (b);

■ b. In paragraph (c)(1), remove the word ''shall'' and add, in its place, the word ''must'';

■ c. In paragraph (c)(2), remove the words ''shall be'' and add, in their place, the word ''are''; and

■ d. In paragraph (d), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 54.05–5 Toughness test specimens.

(a) *Charpy V-notch impact tests.* Where required, Charpy V-notch tests must be conducted in accordance with ASTM E23 (incorporated by reference, see § 54.01–1), using the Type A specimen shown in ASTM E23—Figure 4. Special attention is drawn to the fact that the Charpy Keyhole and U-notch specimens are not acceptable substitutes for the Charpy V-notch specimen and must not be used to qualify materials within the scope of this subpart. Each set of Charpy impact tests must consist of three specimens. For materials ½-inch thick or less, the largest possible Charpy specimens for that thickness must be cut centered at the material's mid-thickness. For materials thicker than ½-inch, full size Charpy specimens must be cut centered at a location as near as practicable to a point midway between the material's surface and half-thickness. Except where otherwise specified, transversely oriented specimens must be used. When longitudinal specimens are used, the required energy values may not be less than 1.5 times the values required for transversely oriented specimens. In all cases the notch must be cut normal to the material's surface. Test specimens must be taken at least one ''t'' from any heat treated edge (where ''t'' is the material's nominal thickness).

(b) *Drop weight tests.* Where required, drop weight tests must be conducted for no-break performance in accordance with ASTM E208 (incorporated by reference, see § 54.01–1). For material thicknesses between ½-inch and ⅝-inch, the ASTM E208 specimen P–3, machined to ½-inch thickness, must be used with a stop distance of 0.090-inch. In preparing weld specimens for dropweight testing, weld reinforcement must be ground flush, the hard facing bead centered on and transverse to the weld, and the notch centered on and parallel to the weld axis.

* * * * *

■ 92. Amend § 54.05–10 as follows:

■ a. Revise the second sentence of paragraph (a);

■ b. In paragraphs (b)(1), (3), (4), and (c)(2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ c. Revise, paragraph (c)(3);

■ d. In paragraphs (c)(4) and (d)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ e. Reserve paragraph (d)(2);

■ f. In paragraphs (e)(1) and (3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ g. Revise the last sentence of paragraph (f).

The revisions read as follows:

§ 54.05–10 Certification of material toughness tests.

(a) * * * Impact specimens must be taken as outlined in section 12 of ASTM A20/A20M (incorporated by reference, see § 54.01–1). * * *

* * * * *

(c) * * *

(3) One set of Charpy impact specimens or two drop-weight specimens, as applicable, must be cut from each such test block and these specimens will represent all forgings (up to 5 short tons) that are from the same heat of material and given the same heat-treatment as the test block, and the thickness of which does not differ from that of the test block by more than plus or minus 50 percent of 1½ inches, whichever is less, except that forged flanges and tube sheets thicker than 5½ inches may be qualified from a 4-inch test block.

* * * * *

(f) * * * For such parts too small to impact test, the Commandant will determine toughness qualifications based on material, chemical, and mechanical properties.

§ 54.05–15 [Amended]

■ 93. Amend § 54.05–15 as follows:

■ a. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. In paragraph (a), remove the text ''figure 54.05–15(a)'' and add, in its place, the text ''figure § 54.05–15(a)'';

■ c. Redesignate figure 54.05–15(a) as figure § 54.05–15(a); and

■ d. Reserve paragraph (b).

■ 94. Amend § 54.05–16 as follows:

■ a. In paragraphs (a) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraph (d); and

■ c. In paragraph (e), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 54.05–16 Production toughness testing.

* * * * *

(d) The test plates and any other test material from which toughness test specimens are cut must be given the same heat-treatment as the production material they represent. Test specimens representing other material than the weld toughness test plates should preferably be cut from a part of the vessel material but may be cut from like material that has been heat-treated within the temperature range specified by the producer in treating the actual vessel material.

* * * * *

§ 54.05–17 [Amended]

■ 95. In § 54.05–17, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 54.05–20 [Amended]

■ 96. Amend § 54.05–20 as follows:

■ a. In paragraph (a):

■ i. Remove the text ''table 54.05–20(a)'' and add, in its place, the text ''table § 54.05–20(a)''; and

■ ii. Redesignate table 54.05–20(a) as § 54.05–20(a); and

■ b. In paragraph (b), remove the text ''ASTM A 203'' and add, in its place, the text ''ASTM A203/A203M''.

■ 97. Amend § 54.05–30 by revising paragraph (b) to read as follows:

§ 54.05–30 Allowable stress values at low temperatures.

* * * * *

(b) The use of such allowable stress values must be specially approved by the Coast Guard for each application. Further information may be obtained by writing to the Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593.

* * * * *

■ 98. Revise § 54.10–1 to read as follows:

§ 54.10–1 Scope (modifies UG–90 through UG–103 and UG–115 through UG–120).

The inspection, tests, stamping, and reports for pressure vessels must be as required by paragraphs UG–90 through UG–103 and UG–115 through UG–120 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) except as noted otherwise in this subpart.

■ 99. Amend § 54.10–3 as follows:

■ a. Revise the section heading;

■ b. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''will'';

■ c. Revise paragraph (b);

■ d. Redesignate paragraph (c) as paragraph (d); and

■ e. Add paragraph (c).

The revisions and addition read as follows:

§ 54.10–3 Marine inspectors and Coast Guard Symbol stamping (replaces UG–90 and UG–91, and modifies UG–92 through UG–103).

* * * * *

(b) All pressure vessels not exempted under provisions of § 54.01–15 must be subject to shop inspection by a marine inspector referring to procedures outlined in UG–92 through UG–103 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) and §§ 50.30–10, 50.30–15, and 50.30–20 of this subchapter. The marine inspector will then stamp the vessel with the Coast Guard Symbol.

(c) Pressure vessels exempted under provisions of § 54.01–15, except as provided in paragraph (d) of this section, are not required to be stamped with the Coast Guard Symbol.

* * * * *

§ 54.10–5 [Amended]

■ 100. Amend § 54.10–5 as follows:

■ a. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' wherever it appears and add, in its place, the text ''Section VIII of the ASME BPVC'';

■ b. Remove the text ''46 CFR'' wherever it appears and add, in its place, the symbol ''§ '';

■ c. Designate the note following paragraph (c) as note 1 to § 54.10–5;

■ d. In newly designated note 1 to § 54.10–5, remove the text ''Table 54.10–5'' and add, in its place, the text ''Table to § 54.10–5'';

■ e. Designate the table following note 1 to § 54.10–5 as table § 54.10–5; and

■ f. Caption newly designated table § 54.10–5 as ''Pressure Vessel Design, Testing and Relief Valve Characteristics''.

■ 101. Amend § 54.10–10 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';

■ b. Revise paragraph (b);

■ c. In paragraphs (c) and (d), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ d. Revise paragraph (e); and

■ e. In paragraph (f), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 54.10–10 Standard hydrostatic test (modifies UG–99).

* * * * *

(b) The hydrostatic-test pressure must be at least one and three-tenths (1.30) times the maximum allowable working pressure stamped on the pressure vessel, multiplied by the ratio of the stress value ''S'' at the test temperature to the stress value ''S'' at the design temperature for the materials of which the pressure vessel is constructed. The values for ''S'' must be taken from tables UCS 23, UNF 23, UHA 23, or UHT 23 of Section VIII of the ASME BPVC (incorporated by reference, see § 54.01–1). The value of ''S'' at test temperature must be that taken for the material of the tabulated value of temperature closest to the test temperature. The value of ''S'' at design temperature must be as interpolated from the appropriate table. No ratio less than one must be used. The stress resulting from the hydrostatic test must not exceed 90 percent of the yield stress of the material at the test temperature. External loadings which will exist in supporting structure during the hydrostatic test should be

considered. The design must consider the combined stress during hydrostatic testing due to pressure and the support reactions. This stress must not exceed 90 percent of the yield stress of the material at the test temperature. In addition the adequacy of the supporting structure during hydrostatic testing should be considered in the design.

* * * * *

(e) Vessels requiring stress relieving must be stress relieved after any welding repairs have been made. (See UW–40 of Section VIII of the ASME BPVC.)

* * * * *

■ 102. Amend § 54.10–15 as follows:

■ a. In paragraph (a), remove the words ''shall be'' and add, in their place, the word ''is'';

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must'';

■ c. Revise paragraph (c); and

■ d. In paragraphs (d) through (g), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 54.10–15 Pneumatic test (modifies UG–100).

* * * * *

(c) Except for enameled vessels, for which the pneumatic test pressure must be at least equal to, but need not exceed, the maximum allowable working pressure to be marked on the vessel, the pneumatic test pressure must be at least equal to one and one-tenth (1.10) times the maximum allowable working pressure to be stamped on the vessel multiplied by the lowest ratio (for the materials of which the vessel is constructed) of the stress value ''S'' for the test temperature of the vessel to the stress value ''S'' for the design temperature (see UG–21 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1)). In no case must the pneumatic test pressure exceed one and one-tenth (1.10) times the basis for calculated test pressure as defined in UA–60(e) of Section VIII of the ASME BPVC.

* * * * *

§ 54.10–20 [Amended]

■ 103. Amend § 54.10–20 as follows:

■ a. In paragraph (a)(2), add the text ''(only applicable to pressure vessels inspected as required by § 54.10–3(b))'' after the word ''subchapter'';

■ b. In paragraphs (b) and (c) remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ c. Reserve paragraph (c)(2); and

■ d. In paragraph (d), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 54.10–25 [Amended]

■ 104. In § 54.10–25, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 54.15–1 [Amended]

■ 105. Amend § 54.15–1 as follows:

■ a. In paragraph (a), remove the text ''section VIII of the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1)''; and

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

§ 54.15–5 [Amended]

■ 106. Amend § 54.15–5 as follows:

■ a. In paragraph (a):

■ i. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ b. In paragraphs (b) through (f) and (h) through (l), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 107. Amend § 54.15–10 as follows:

■ a. In paragraphs (a), (b), and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraph (e);

■ c. In paragraph (g) and the introductory text to (h), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ d. In paragraph (h)(1), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ e. In paragraph (h)(2), remove the text ''section VIII of section VIII of the ASME Boiler and Pressure Vessel Code'' wherever it appears and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ f. In paragraph (h)(3), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' wherever it appears and add, in its place, the text ''Section VIII of the ASME BPVC''.

The revision reads as follows:

§ 54.15–10 Safety and relief valves (modifies UG–126).

* * * * *

(e) If the design of a safety or relief valve is such that liquid can collect on the discharge side of the disk, the valve must be equipped with a drain at the lowest point where liquid can collect (for installation, see UG–134 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1).

* * * * *

§ 54.15–13 [Amended]

■ 108. Amend § 54.15–13 as follows:

■ a. In paragraph (a):

■ i. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ b. In paragraphs (b) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 54.15–15 [Amended]

■ 109. In § 54.15–15, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 54.15–25 [Amended]

■ 110. Amend § 54.15–25 as follows:

■ a. In paragraphs (a) and (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. In paragraph (c), remove the text ''Figure 54.15–25(c)'' and add, in its place, the text ''figure § 54.15–25(c)'';

■ c. Designate the figure immediately following paragraph (c) as figure § 54.15–25(c);

■ d. Caption newly designated figure § 54.15–25(c) as ''Surface Area of Grouped Vertical Tanks'';

■ e. Redesignate table 54.15–25(c) as table § 54.15–25(c).

■ f. Redesignate paragraph (c–1) as paragraph (c)(1);

■ g. In newly redesignated paragraph (c)(1), remove the text ''(CG–ENG)..'' and add, in its place, the text ''(CG–ENG).'';

■ h. Reserve paragraph (c)(2); and

■ i. In paragraphs (d) and (e), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 111. Amend § 54.20–1 by revising paragraph (a) to read as follows:

§ 54.20–1 Scope (modifies UW–1 through UW–65).

(a) Pressure vessels and vessel parts that are fabricated by welding must be as required by paragraphs UW–1 through UW–65 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) except as noted otherwise in this subchapter.

* * * * *

■ 112. Amend § 54.20–3 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';

■ b. Revise paragraph (b);

■ c. In paragraph (c), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its

place, the text ''Section VIII of the ASME BPVC'';
■ d. Revise paragraph (d); and
■ e. In paragraph (e):
■ i. Remove the word ''shall'' and add, in its place, the word ''must''; and
■ ii. Remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5''.

The revisions read as follows:

§ 54.20–3 Design (modifies UW–9, UW–11(a), UW–13, and UW–16).

* * * * *

(b) Welding subject to UW–11(a) of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) must be modified as described in § 54.25–8 for radiographic examination.

* * * * *

(d) Attachment welds for nozzles and other connections must be in accordance with UW–16 of Section VIII of the ASME BPVC. When nozzles or connections are made to pressure vessels, as shown in Figure UW–16.1 (a) and (c) of the ASME BPVC, and are welded from one side only, backing strips must be used unless it can be determined visually that a full penetration weld has been achieved.

* * * * *

§ 54.20–5 [Amended]

■ 113. In § 54.20–5(a), remove the word ''shall'' and add, in its place, the word ''must''.

§ 54.23–1 [Amended]

■ 114. Amend § 54.23–1 as follows:
■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and
■ b. Reserve paragraph (b).
■ 115. Revise § 54.25–1 to read as follows:

§ 54.25–1 Scope.

The pressure vessels for low temperature operation must be as required by Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) as modified by this subpart.
■ 116. Revise § 54.25–3 to read as follows:

§ 54.25–3 Steel plates (modifies UCS–6).

The steels listed in UCS–6(b) of Section VIII of the ASME BPVC (incorporated by reference; see *§ 54.01–1*) will be allowed only in Class III pressure vessels (see table 2 to § 54.01–5(b)).

§ 54.25–7 [Amended]

■ 117. Amend § 54.25–7 as follows:
■ a. In paragraph (a), remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5''; and
■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.
■ 118. Amend § 54.25–8 as follows:
■ a. In paragraph (a), remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5''; and
■ b. Revise paragraph (b).

The revision reads as follows:

§ 54.25–8 Radiography (modifies UW–11(a), UCS–57, UNF–57, UHA–33, and UHT–57).

* * * * *

(b) Class II–L vessels must be spot radiographed. The exemption provided in UW–11(c) of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) does not apply. (Refer to table 2 to 54.01–5 for applicable requirements.)

* * * * *

■ 119. Amend § 54.25–10 as follows:
■ a. Revise the section heading;
■ b. In paragraph (a)(2), remove the word ''shall'' and add, in its place, the word ''must'';
■ c. Revise the introductory text to paragraph (b), and paragraph (b)(1);
■ d. Redesignate table 54.25–10(b)(1) as table 1 to § 54.25–10(b)(1) and designate the table immediately before paragraph (b)(2) as table 2 to § 54.25–10(b)(1);
■ e. In paragraphs (b)(2):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ ii. Remove the text ''table 54.25–10(b)(2)'' wherever it appears and add, in its place, the text ''table 3 to § 54.25–10(b)(2)'';
■ f. Redesignate table 54.25–10(b)(2) as table 3 to § 54.25–10(b)(2);
■ g. In paragraphs (b)(3) through (5), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ h. In paragraph (c), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' wherever it appears and add, in its place, the text ''Section VIII of the ASME BPVC''.

The revision reads as follows:

§ 54.25–10 Low temperature operation—ferritic steels (replaces UCS–65 through UCS–67).

* * * * *

(b) *Specifications.* Materials used in the construction of vessels to operate below 0 °F. (but not below the designated minimum service temperature) must conform to a specification given in table UCS–23 in Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) and the following additional requirements:

Note 1 to paragraph (b) introductory text: For high alloy steels refer to § 54.25–15. For heat treated steels refer to § 54.25–20.

(1)(i) For minimum service temperatures not lower than −67 °F., ferritic steels must be made with fine grain practice and must have an austenitic grain size of 5 or finer, and must be normalized. Consideration will be given to other heat treatments; refer to § 57.03–1(d) of this subchapter. Plate for pressure vessel applications must conform to the requirements of ASTM A20/A20M (incorporated by reference, see § 54.01–1). It may be produced by the open hearth, basic oxygen or electric furnace process and must conform to the requirements of table 1 to § 54.25–10(b)(1). (Other alloying elements may only be present in trace amounts.)

(ii) Mechanical properties must be within the following limits:
(A) Ultimate strength:
—58,000 [1]–85,000 [1] p.s.i.
(B) Yield strength:
—Minimum 35,000 p.s.i.
—Maximum 80 percent of ultimate.
(C) Elongation minimum:
—20 percent in 8 inches, or
—24 percent in 2 inches, or
—22 percent in 5.65 $\sqrt{A}$, where ''A'' is the test specimen cross sectional area.

* * * * *

■ 120. Revise § 54.25–15 to read as follows:

§ 54.25–15 Low temperature operation—high alloy steels (modifies UHA–23(b) and UHA–51).

(a) Toughness tests for the materials listed in UHA–51(a) in Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) for service temperatures below −425 °F., UHA–51(b)(1) through (5) for service temperatures below 0 °F., and UHA–51(c) for all service temperatures, must be performed in accordance with the requirements of subpart 54.05. These requirements are also applicable to nonpressure vessel type, low temperature tanks and associated secondary barriers, as defined in § 38.05–4 in subchapter D (Tank Vessels) of this chapter. Such tests are required regardless of the vessel's design stress. Service temperature is defined in § 54.25–10(a)(2).

(b) Materials for pressure vessels with service temperatures below −320 °F. must be of the stabilized or low carbon (less than 0.10 percent) austenitic stainless steel type, produced according to the applicable specifications of table UHA–23 of Section VIII of the ASME BPVC. These materials and their weldments must be tested for toughness according to the requirements of subpart 54.05 except that the Charpy V-notch

testing acceptance criteria will be in accordance with UHT–6(a)(4) and (5) of Section VIII of the ASME BPVC.

(c) Except as permitted by § 54.05–30, the allowable stress values used in the design of low temperature pressure vessels may not exceed those given in table UHA–23 of Section VIII of the ASME BPVC for temperatures of −20 °F. to 100 °F.

■ 121. Amend § 54.25–20 as follows:

■ a. Revise the section heading;

■ b. In paragraph (a):

■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ ii. Remove the text ''table 54.25–20(a)'' and add, in its place, the text ''table § 54.25–20(a)'';

■ c. Redesignate table 54.25–20(a) as § 54.25–20(a)

■ d. Revise paragraph (b);

■ e. Designate the figure following paragraph (b) as Figure § 54.25–20(b);

■ f. In paragraph (c):

■ i. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ ii. Remove the text ''table 54.25–20(a)'' and add, in its place, the text ''table § 54.25–20(a)''; and

■ g. In paragraph (d), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 54.25–20 Low temperature operation—ferritic steels with properties enhanced by heat treatment (modifies UHT–5(c), UHT–6, UHT–23, and UHT–82).

* * * * *

(b) The materials permitted under paragraph (a) of this section must be tested for toughness in accordance with the requirements of UHT–6 of Section VIII of the ASME BPVC (incorporated by reference; see § 54.01–1) except that tests must be conducted at the temperature specified in § 54.05–6 in lieu of that in UHT–5(c) of Section VIII of the ASME BPVC. Lateral expansion in a broken Charpy V-notch specimen is illustrated in Figure 54.25–20(b) and must be measured in accordance with the procedure outlined in ASTM A370 (incorporated by reference, see § 54.01–1).

* * * * *

■ 122. Amend § 54.30–3 by revising paragraph (c) to read as follows:

§ 54.30–3 Introduction.

* * * * *

(c) The weld joint efficiencies as listed in table UW–12 of Section VIII of the BPVC (incorporated by reference; see § 54.01–1) apply except that a minimum of spot radiography will be required. UW–12(c) of Section VIII of the ASME BPVC that permits omitting all radiography does not apply. Spot examination must follow UW–52 of Section VIII of the ASME BPVC and, in addition, these vessels will be required to have radiographic examination of intersecting circumferential and longitudinal joints for a distance of at least 20 times the plate thickness from the junction. See § 54.25–8 on spot radiography.

* * * * *

■ 123. Amend § 54.30–5 as follows:

■ a. In the introductory text to paragraph (a), remove the text ''table 54.01–5(b)'' and add, in its place, the text ''table 2 to § 54.01–5'';

■ b. In paragraph (a)(1):

■ i. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§'';

■ c. In paragraph (a)(4), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC'';

■ d. Revise paragraph (a)(6); and

■ e. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 54.30–5 Limitations and requirements.

(a) * * *

(6) The categories A and B joints are type one as described in table UW–12 of Section VIII of the ASME BPVC and all categories C and D joints are full penetration welds. See UW–3 of the ASME BPVC for definition of categories.

* * * * *

§ 54.30–10 [Amended]

■ 124. Amend § 54.30–10 as follows:

■ a. In the introductory text to paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';

■ b. In paragraph (a)(1):

■ i. Remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ c. In paragraphs (a)(2) and (3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 54.30–15 [Amended]

■ 125. In § 54.30–15, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

PART 56—PIPING SYSTEMS AND APPURTENANCES

■ 126. The authority citation for part 56 continues to read as follows:

Authority: 33 U.S.C. 1321(j), 1509; 43 U.S.C. 1333; 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; E.O. 12777, 56 FR 54757, 3 CFR, 1991 Comp., p. 351; Department of Homeland Security Delegation No. 0170.1.

§ 56.01–1 [Amended]

■ 127. In § 56.01–1(b), remove the word ''shall'' and add, in its place, the word ''must''.

■ 128. Revise § 56.01–2 to read as follows:

§ 56.01–2 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. The material is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(a) *American Petroleum Institute (API),* 1220 L Street NW, Washington, DC 20005–4070, *www.api.org.*

(1) API Standard 607, Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats, Seventh Edition, June 2016 (''API 607''); IBR approved for § 56.20–15.

(2) [Reserved]

(b) *American Society of Mechanical Engineers* (*ASME*), Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers (2019) (''Section I of the ASME BPVC''); IBR approved for §§ 56.15–1, 56.60–1, 56.70–15, 56.95–10.

(2) ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Rules for Construction of Pressure Vessels (2019) (''Section VIII of the ASME BPVC''); IBR

approved for §§ 56.15–156.25–5, 56.30–10, 56.60–1, 56.60–2, 56.60–15, 56.95–10.

(3) ASME Boiler and Pressure Vessel Code, Section IX, Welding and Brazing Qualifications (2019) (''Section IX of the ASME BPVC''); IBR approved for §§ 56.70–5, 56.70–20, 56.75–20, 56.85–10.

(4) ASME B1.1–2003, Unified Inch Screw Threads (UN and UNR Thread Form), September 30, 2004, reaffirmed 2008 (''ASME B1.1''); IBR approved for §§ 56.25–20, 56.60–1.

(5) ASME B1.20.1–2013, Pipe Threads, General Purpose (Inch), November 15, 2013 (''ASME B1.20.1''); IBR approved for § 56.60–1.

(6) ASME B1.20.3–1976, Dryseal Pipe Threads (Inch), January 1, 1976, reaffirmed 2013, (''ASME B1.20.3''); IBR approved for § 56.60–1.

(7) ASME B16.1–2015, Gray Iron Pipe Flanges and Flanged Fittings, Classes 25, 125, and 250, December 28, 2015 (''ASME B16.1''); IBR approved for §§ 56.60–1, 56.60–10.

(8) ASME B16.3–2016, Malleable Iron Threaded Fittings, Classes 150 and 300, November 30, 2016 (''ASME B16.3''); IBR approved for § 56.60–1.

(9) ASME B16.4–2016, Gray Iron Threaded Fittings, Classes 125 and 250, November 11, 2016 (''ASME B16.4''); IBR approved for § 56.60–1.

(10) ASME B16.5–2017, Pipe Flanges and Flanged Fittings, NPS ½ Through NPS 24 Metric/Inch Standard, November 20, 2017, (''ASME B16.5''); IBR approved for §§ 56.25–20, 56.30–10, 56.60–1.

(11) ASME B16.11–2016, Forged Fittings, Socket-Welding and Threaded, January 1, 2016 (''ASME B16.11''); IBR approved for §§ 56.30–5, 56.60–1.

(12) ASME B16.14–2013, Ferrous Pipe Plugs, Bushings, and Locknuts with Pipe Threads, November 15, 2013 (''ASME B16.14''); IBR approved for § 56.60–1.

(13) ASME B16.15–2013, Cast Copper Alloy Threaded Fittings, Classes 125 and 250, December 6, 2013 (''ASME B16.15''); IBR approved for § 56.60–1.

(14) ASME B16.20–2012, Metallic Gaskets for Pipe Flanges, Ring-Joint, Spiral-Wound, and Jacketed, January 1, 2012 (''ASME B16.20''); IBR approved for § 56.60–1.

(15) ASME B16.21–2016, Nonmetallic Flat Gaskets for Pipe Flanges, December 9, 2016 (''ASME B16.21''); IBR approved for § 56.60–1.

(16) ASME B16.23–2016, Cast Copper Alloy Solder Joint Drainage Fittings: DWV, January 1, 2016 (''ASME B16.23''); IBR approved for § 56.60–1.

(17) ASME B16.25–2012, Buttwelding Ends, January 1, 2012 (''ASME B16.25''); IBR approved for §§ 56.30–5, 56.60–1, 56.70–10.

(18) ASME B16.29–2012, Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings—DWV, September 26, 2012 (''ASME B16.29''); IBR approved for § 56.60–1.

(19) ASME B16.34–2017, Valves—Flanged, Threaded, and Welding End, August 23, 2017 (''ASME B16.34''); IBR approved for § 56.60–1.

(20) ASME B18.2.1–2012, Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series), 2012 (''ASME B18.2.1''); IBR approved for §§ 56.25–20, 56.60–1.

(21) ASME B18.2.2–2015, Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Coupling Nuts (Inch Series), November 30, 2015 (''ASME B18.2.2''); IBR approved for §§ 56.25–20, 56.60–1.

(22) ASME B31.1–2016, Power Piping, ASME Code for Pressure Piping, June 30, 2016 (''ASME B31.1''); IBR approved for §§ 56.01–3, 56.01–5, 56.07–5, 56.07–10, 56.10–1, 56.10–5, 56.15–1, 56.25–7, 56.30–1, 56.30–5, 56.30–20, 56.35–1, 56.50–1, 56.50–40, 56.50–70, 56.50–97, 56.60–1, 56.65–1, 56.70–5, 56.70–10, 56.70–15, 56.80–5, 56.80–15, 56.85–10, 56.95–1, 56.95–10, 56.97–1.

(23) ASME B31.3–2018, Process Piping, ASME Code for Pressure Piping, August 30, 2019 (''ASME B31.3''); IBR approved for § 56.60–1.

(24) ASME B36.10M–2015 Welded and Seamless Wrought Steel Pipe, August 31, 2015 (''ASME B36.10M''); IBR approved for §§ 56.07–5, 56.30–20, 56.60–1.

(25) ASME B36.19M–2004 Stainless Steel Pipe, October 25, 2004 (''ASME B36.19M''); IBR approved for §§ 56.07–5, 56.60–1.

(26) ASME SA–675, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, Mechanical Properties, May 1, 2014 (''ASTM SA–675''); IBR approved for § 56.60–2.

(c) *ASTM International,* 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959, 877–909–2786, *www.astm.org.*

(1) ASTM A36/A36M–14, Standard Specification for Carbon Structural Steel, December 1, 2014 (''ASTM A36/A36M''); IBR approved for § 56.30–10.

(2) ASTM A47/A47M–99 (Reapproved 2014), Standard Specification for Ferritic Malleable Iron Castings, April 1, 2014, (''ASTM A47/A47M''); IBR approved for § 56.30–10, 56.60–1.

(3) ASTM A53/A53M–12, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless, March 1, 2012 (''ASTM A53/A53M''); IBR approved for §§ 56.10–5, 56.60–1.

(4) ASTM A126–04 (Reapproved 2014), Standard Specification for Gray Iron Castings for Valves, Flanges, and Pipe Fittings, April 1, 2014 (''ASTM A126''); IBR approved for § 56.60–1.

(5) ASTM A135/A135M–19, Standard Specification for Electric-Resistance-Welded Steel Pipe, May 1, 2019 (''ASTM A135/A135M''); IBR approved for § 56.60–1.

(6) ASTM A197/A197M–00 (Reapproved 2015), Standard Specification for Cupola Malleable Iron, November 1, 2015 (''ASTM A197/A197M''); IBR approved for § 56.60–1.

(7) ASTM A210/A210M–19, Standard Specification for Seamless Medium-Carbon Steel Boiler and Superheater Tubes, May 1, 2019 (''ASTM A210/A210M''); IBR approved for § 56.60–1.

(8) ASTM A268/A268M–10 (Reapproved 2016), Standard Specification for Seamless and Welded Ferritic and Martensitic Stainless Steel Tubing for General Service, September 1, 2016 (''ASTM A268/A268M''); IBR approved for § 56.60–1.

(9) ASTM A276/A276M–17, Standard Specification for Stainless Steel Bars and Shapes, March 15, 2017 (''ASTM A276/A276M''); IBR approved for § 56.60–2.

(10) ASTM A312/A312M–17, Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes, March 15, 2017 (''ASTM A312/A312M''); IBR approved for §§ 56.50–105, 56.60–1.

(11) ASTM A333/A333M–16, Standard Specification for Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness, March 1, 2016 (''ASTM A333/A333M''); IBR approved for §§ 56.50–105, 56.60–1.

(12) ASTM A334/A334M–04a, Standard Specification for Seamless and Welded Carbon and Alloy-Steel Tubes for Low-Temperature Service, May 1, 2004 (''ASTM A334/A334M''); IBR approved for §§ 56.50–105, 56.60–1.

(13) ASTM A350/A350M–17, Standard Specification for Carbon and Low-Alloy Steel Forgings, Requiring Notch Toughness Testing for Piping Components, September 1, 2017 (''ASTM A350/A350M''); IBR approved for § 56.50–105.

(14) ASTM A352/A352M–17, Standard Specification for Steel Castings, Ferritic and Martensitic, for Pressure-Containing Parts, Suitable for Low-Temperature Service, November 1, 2017 (''ASTM A352/A352M''); IBR approved for § 56.50–105.

(15) ASTM A358/A358M–15, Standard Specification for Electric-

Fusion-Welded Austenitic Chromium-Nickel Stainless Steel Pipe for High-Temperature Service and General Applications, September 1, 2015 (''ASTM A358/A358M''); IBR approved for § 56.60–1.

(16) ASTM A376/A376M–17, Standard Specification for Seamless Austenitic Steel Pipe for High-Temperature Service, September 1, 2017 (''ASTM A376/A376M''); IBR approved for §§ 56.60–1, 56.60–2.

(17) ASTM A403/A403M–16, Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings, May 1, 2016 (''ASTM A403/A403M''); IBR approved for § 56.60–1.

(18) ASTM A420/A420M–16, Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Low-Temperature Service, May 1, 2016 (''ASTM A420/A420M''); IBR approved for §§ 56.50–105, 56.60–1.

(19) ASTM A522/A522M–14, Standard Specification for Forged or Rolled 8 and 9% Nickel Alloy Steel Flanges, Fittings, Valves, and Parts for Low-Temperature Service, October 1, 2014 (''ASTM A522/A522M'') IBR approved for § 56.50–105.

(20) ASTM A575–96 (Reapproved 2013),[e1] Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades, July 2013 (''ASTM A575''); IBR approved for § 56.60–2.

(21) ASTM A576–17, Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality, November 1, 2017 (''ASTM A576''); IBR approved for § 56.60–2.

(22) ASTM B16/B16M–10 (Reapproved 2015), Standard Specification for Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines May 1, 2015 (''ASTM B16/B16M''); IBR approved for § 56.60–2.

(23) ASTM B21/B21M–20, Standard Specification for Naval Brass Rod, Bar, and Shapes, April 1, 2020 (''ASTM B21/B21M''); IBR approved for § 56.60–2.

(24) ASTM B26/B26M–18, Standard Specification for Aluminum-Alloy Sand Castings, May 15, 2018 (''ASTM B26/B26M''); IBR approved for § 56.60–2.

(25) ASTM B42–20, Standard Specification for Seamless Copper Pipe, Standard Sizes, April 1, 2020 (''ASTM B42''); IBR approved for § 56.60–1.

(26) ASTM B43–15, Standard Specification for Seamless Red Brass Pipe, Standard Sizes, October 1, 2015 (''ASTM B43''); IBR approved for § 56.60–1.

(27) ASTM B68/B68M–19, Standard Specification for Seamless Copper Tube, Bright Annealed, April 1, 2019 (''ASTM B68/B68M''); IBR approved for § 56.60–1.

(28) ASTM B75/B75M–19, Standard Specification for Seamless Copper Tube, April 1, 2019 (''ASTM B75/B75M''); IBR approved for § 56.60–1.

(29) ASTM B85/B85M–18, Standard Specification for Aluminum-Alloy Die Castings, May 1, 2018 (''ASTM B85/B85M''); IBR approved for § 56.60–2.

(30) ASTM B96/B96M–16, Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels, April 1, 2016 (''ASTM B96/B96M''); IBR approved for § 56.60–2.

(31) ASTM B111/B111M–18a, Standard Specification for Copper and Copper-Alloy Seamless Condenser Tubes and Ferrule Stock, October 1, 2018 (''ASTM B111/B111M''); IBR approved for § 56.60–1.

(32) ASTM B124/B124M–18, Standard Specification for Copper and Copper Alloy Forging Rod, Bar, and Shapes, March 15, 2018 (''ASTM B124/B124M''); IBR approved for § 56.60–2.

(33) ASTM B161–05 (Reapproved 2019), Standard Specification for Nickel Seamless Pipe and Tube, April 1, 2019) (''ASTM B161''); IBR approved for § 56.60–1.

(34) ASTM B165–19, Standard Specification of Nickel-Copper Alloy Seamless Pipe and Tube, November 1, 2019 (''ASTM B165''); IBR approved for § 56.60–1.

(35) ASTM B167–18, Standard Specification for Nickel-Chromium-Aluminum Alloys (UNS N06699), Nickel-Chromium-Iron Alloys (UNS N06600, N06601, N06603, N06690, N06693, N06025, N06045, and N06696), Nickel-Chromium-Cobalt-Molybdenum Alloy (UNS N06617), Nickel-Iron-Chromium-Tungsten Alloy (UNS N06674), and Nickel-Chromium-Molybdenum-Copper Alloy (UNS N06235) Seamless Pipe and Tube, December 1, 2018 (''ASTM B167''); IBR approved for § 56.60–1.

(36) ASTM B171/B171M–18, Standard Specification for Copper-Alloy Plate and Sheet for Pressure Vessels, Condensers, and Heat Exchangers, October 1, 2018 (''ASTM B171/B171M''); IBR approved for § 56.60–2.

(37) ASTM B210–19a, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes, November 1, 2019 (''ASTM B210''); IBR approved for § 56.60–1.

(38) ASTM B234–17, Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes for Surface Condensers, Evaporators, and Heat Exchangers, October 1, 2017 (''ASTM B234''); IBR approved for § 56.60–1.

(39) ASTM B241/B241M–16, Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube, February 1, 2016 (''ASTM B241/B241M''); IBR approved for § 56.60–1.

(40) ASTM B280–18, Standard Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service, March 1, 2018 (''ASTM B280''); IBR approved for § 56.60–1.

(41) ASTM B283/B283M–18, Standard Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed), March 1, 2018 (''ASTM B283/B283M''); IBR approved for § 56.60–2.

(42) ASTM B315–19, Standard Specification for Seamless Copper Alloy Pipe and Tube, April 1, 2019 (''ASTM B315''); IBR approved for § 56.60–1.

(43) ASTM B361–16, Standard Specification for Factory-Made Wrought Aluminum and Aluminum-Alloy Welding Fittings, May 1, 2016 (''ASTM B361''); IBR approved for § 56.60–1.

(44) ASTM B858–06 (Reapproved 2018), Standard Test Method for Ammonia Vapor Test for Determining Susceptibility to Stress Corrosion Cracking in Copper Alloys, March 1, 2018 (''ASTM B858''); IBR approved for § 56.60–2.

(45) ASTM E23–18, Standard Test Methods for Notched Bar Impact Testing of Metallic Materials, June 1, 2018 (''ASTM E23''); IBR approved for § 56.50–105.

(46) ASTM F1006–86 (Reapproved 2018), Standard Specification for Entrainment Separators for Use in Marine Piping Applications, September 1, 2018 (''ASTM F1006''); IBR approved for § 56.60–1.

(47) ASTM F1007–18, Standard Specification for Pipeline Expansion Joints of the Packed Slip Type for Marine Application, May 1, 2018 (''ASTM F1007''); IBR approved for § 56.60–1.

(48) ASTM F1020–86 (Reapproved 2018), Standard Specification for Line-Blind Valves for Marine Applications, March 1, 2018 (''ASTM F1020''); IBR approved for § 56.60–1.

(49) ASTM F1120–87 (Reapproved 2015), Standard Specification for Circular Metallic Bellows Type Expansion Joints for Piping Applications, May 1, 2015 (''ASTM F1120''); IBR approved for § 56.60–1.

(50) ASTM F1123–87 (Reapproved 2015), Standard Specification for Non-Metallic Expansion Joints, May 1, 2015 (''ASTM F1123''); IBR approved for § 56.60–1.

(51) ASTM F1139–88 (Reapproved 2015), Standard Specification for Steam Traps and Drains, May 1, 2015) (''ASTM F1139''); IBR approved for § 56.60–1.

(52) ASTM F1155–10 (Reapproved 2015), Standard Practice for Selection

and Application of Piping System Materials, May 1, 2015 (''ASTM F1155''); IBR approved for §§ 56.50–60, 56.50–105, 56.60–1, 56.60–15.

(53) ASTM F1172–88 (Reapproved 2015), Standard Specification for Fuel Oil Meters of the Volumetric Positive Displacement Type, May 1, 2015 (''ASTM F1172''); IBR approved for § 56.60–1.

(54) ASTM F1173–01 (Reapproved 2018), Standard Specification for Thermosetting Resin Fiberglass Pipe and Fittings to be Used for Marine Applications, March 1, 2018 (''ASTM F1173''); IBR approved for § 56.60–1.

(55) ASTM F1199–88 (Reapproved 2015), Standard Specification for Cast (All Temperatures and Pressures) and Welded Pipe Line Strainers (150 psig and 150 °F Maximum), May 1, 2015 (''ASTM F1199''); IBR approved for § 56.60–1.

(56) ASTM F1200–88 (Reapproved 2016), Standard Specification for Fabricated (Welded) Pipe Line Strainers (Above 150 psig and 150 °F), September 1, 2016 (''ASTM F1200''); IBR approved for § 56.60–1

(57) ASTM F1201–88 (Reapproved 2016), Standard Specification for Fluid Conditioner Fittings in Piping Applications above 0 °F, September 1, 2016 (''ASTM F1201''); IBR approved for § 56.60–1.

(58) ASTM F1387–19, Standard Specification for Performance of Mechanically Attached Fittings, September 15, 2019 (''ASTM F1387''); IBR approved for § 56.30–25.

(59) ASTM F1476–07 (Reapproved 2013), Standard Specification for Performance of Gasketed Mechanical Couplings for Use in Piping Applications, October 1, 2013 (''ASTM F1476''); IBR approved for § 56.30–35.

(60) ASTM F1548–01 (Reapproved 2018), Standard Specification for the Performance of Fittings for Use with Gasketed Mechanical Couplings Used in Piping Applications, March 1, 2018 (''ASTM F1548''); IBR approved for § 56.30–35.

(d) *Expansion Joint Manufacturers Association Inc. (EJMA),* 25 North Broadway, Tarrytown, NY 10591, *www.ejma.org/.*

(1) Standards of the Expansion Joint Manufacturers Association, 10th Edition, July 1, 2015; IBR approved for § 56.60–1.

(2) [Reserved]

(e) *Fluid Controls Institute Inc. (FCI),* 1300 Sumner Avenue, Cleveland, Ohio 44115, *www.fluidcontrolsinstitute.org.*

(1) FCI 69–1 Pressure Rating Standard for Steam Traps, January 1, 2017 (''FCI 69–1''); IBR approved for § 56.60–1.

(2) [Reserved]

(f) *International Maritime Organization (IMO Publications Section),* 4 Albert Embankment, London SE1 7SR, United Kingdom, +44 (0) 20 7735 7611, *www.imo.org.*

(1) Resolution A.753(18) Guidelines for the Application of Plastic Pipes on Ships, adopted on 4 November 1993 (''IMO Resolution A.753(18)''); IBR approved for § 56.60–25.

(2) Resolution MSC.313(88), Amendments to the Guidelines for the Application of Plastic Pipes on Ships, adopted 26 November 2010 (''IMO Resolution MSC.313(88)''); IBR approved for § 56.60–25.

(3) The International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS); IBR approved for § 56.50–50.

(g) *International Organization for Standardization (ISO),* Case Postal 56, CH–1211 Geneva 20 Switzerland, *www.iso.org.*

(1) ISO 15540:2016(E) Ships and Marine Technology—Fire resistance of non-metallic hose assemblies and non-metallic compensators—Test methods, 2nd Edition, July 15, 2016 (''ISO 15540''); IBR approved for § 56.60–25.

(2) [Reserved]

(h) *Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. (MSS),* 127 Park Street NE, Vienna, VA 22180–4601, *www.msshq.org.*

(1) MSS SP–6–2017, Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings, January 2017 (''MSS SP–6''); IBR approved for §§ 56.25–10, 56.60–1.

(2) MSS SP–9–2013, Spot Facing for Bronze, Iron and Steel Flanges, January 1, 2013 (''MSS SP–9''); IBR approved for § 56.60–1.

(3) ANSI/MSS SP–25–2018, Standard Marking System for Valves, Fittings, Flanges and Unions, March 2018 (''MSS SP–25''); IBR approved for §§ 56.15–1, 56.20–5, 56.60–1.

(4) MSS SP–45–2003, Bypass and Drain Connections, 2003 (''MSS SP–45''); IBR approved for §§ 56.20–20, 56.60–1.

(5) MSS SP–51–2012, Class 150LW Corrosion Resistant Flanges and Cast Flanged Fittings, January 1, 2012 (''MSS SP–51''); IBR approved for § 56.60–1.

(6) MSS SP–53–2012, Quality Standard for Steel Castings and Forgings for Valves, Flanges, Fittings, and Other Piping Components—Magnetic Particle Examination Method, January 2012 (''MSS SP–53''); IBR approved for § 56.60–1.

(7) ANSI/MSS SP–55–2011, Quality Standard for Steel Castings for Valves, Flanges, Fittings and Other Piping Components—Visual Method for Evaluation of Surface Irregularities, October 2011 (''MSS SP–55''); IBR approved for § 56.60–1.

(8) ANSI/MSS SP–58–2009, Pipe Hangers and Supports—Materials, Design, Manufacture, Selection, Application, and Installation, 2009 (''MSS SP–58''); IBR approved for § 56.60–1.

(9) MSS SP–61–2019, Pressure Testing of Valves, December 2019 (''MSS SP–61''); IBR approved for § 56.60–1.

(i) *SAE International (SAE),* 400 Commonwealth Drive, Warrendale, PA 15096, 724–776–4841, *www.sae.org.*

(1) SAE J1475 JUN2014, Hydraulic Hose Fitting for Marine Applications, June 1, 2014 (''SAE J1475''); IBR approved for § 56.60–25.

(2) J1942 MAR2019, Hose and Hose Assemblies for Marine Applications, Reaffirmed March 1, 2019 (''SAE J1942''); IBR approved for § 56.60–25.

§ 56.01–5 [Amended]

■ 129. Amend § 56.01–5 as follows:
■ a. In paragraph (a):
■ i. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and
■ ii. Remove the text ''table 56.01–5(a)'' and add, in its place, the text ''table § 56.01–5(a)'';
■ b. Redesignate table 56.01–5(a) as table § 56.01–5(a);
■ c. Redesignate paragraph (viii)(b) as paragraph (b); and
■ d. In paragraph (c):
■ i. Remove the text ''of this chapter''; and
■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.
■ 130. Amend § 56.01–10 as follows:
■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';
■ b. Revise paragraph (b);
■ c. In the introductory text to paragraphs (c)(1) and (2), paragraph (d)(1), and the introductory text to paragraphs (d)(2) and (3); remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ d. Redesignate paragraph (d–1), (e) and (f) as paragraphs (e), (f), and (g); and
■ e. In newly redesignated paragraph (f), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 56.01–10 Plan approval.

* * * * *

(b) Piping materials and appliances, such as pipe, tubing, fittings, flanges, and valves, except safety relief valves covered in part 162 of subchapter Q (Specifications) of this chapter, are not required to be specifically approved by

the Commandant, but must comply with the applicable requirements for materials, construction, markings, and testing. These materials and appliances must be certified as described in part 50 of this subchapter. Drawings listing material specifications and showing details of welded joints for pressure-containing appurtenances of welded construction must be submitted in accordance with paragraph (a) of this section.

* * * * *

■ 131. Amend § 56.04–1 as follows:
■ a. Revise introductory text to § 56.04–1,; and
■ b. Redesignate table 56.04–1 as table § 56.04–1.

The revision reads as follows:

§ 56.04–1 Scope.

Piping is classified as shown in table § 56.04–1.

* * * * *

§ 56.04–2 [Amended]

■ 132. Amend § 56.04–2 as follows:
■ a. In the introductory text to § 56.04–2, remove the text ''table 56.04–2'' and add, in its place, the text ''table § 56.04–2''; and
■ b. Redesignate table 56.04–2 as table § 56.04–2.
■ 133. Amend § 56.07–5 as follows:
■ a. In the introductory text to paragraph (a), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';
■ b. Reserve paragraph (a)(1);
■ c. Revise paragraph (c); and
■ d. Remove paragraph (g).

The revision reads as follows:

§ 56.07–5 Definitions (modifies 100.2).

* * * * *

(c) *Schedule.* The word *Schedule* when used in this part generally relates to the wall thickness of piping, and refers to specific values as given in ASME B36.10M and B36.19M (both incorporated by reference; see § 56.01–2).

* * * * *

■ 134. Amend § 56.07–10 as follows:
■ a. In paragraph (a)(1), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';
■ b. In paragraph (a)(2), remove the word ''shall'' and add, in its place, the word ''must'';
■ c. Revise paragraph (b)(1);
■ d. In paragraphs (b)(2) and (3), and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ e. Revise paragraph (d);
■ f. In paragraph (e)(1), remove the text ''tables 56.60–1 and'' and add, in its place, the text ''tables 1 and 2 to § 56.60–1 and table § '';
■ g. Revise paragraphs (e)(2) and (3); and
■ h. In paragraph (f)(1), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 56.07–10 Design conditions and criteria (modifies 101–104.7).

* * * * *

(b) * * *

(1) Every system which may be exposed to pressures higher than the system's maximum allowable working pressure must be safeguarded by appropriate relief devices. Relief valves are required at pump discharges except for centrifugal pumps so designed and applied that a pressure in excess of the maximum allowable working pressure for the system cannot be developed.

* * * * *

(d) *Ratings for pressure and temperature (modifies 102.2).* The material in 102.2 of ASME B31.1 applies, with the following exceptions:

(1) The details of components not having specific ratings as described in 102.2.2 of ASME B31.1 must be furnished to the Marine Safety Center for approval.

(2) Boiler blowoff piping must be designed in accordance with § 56.50–40 of this part.

(e) * * *

(2) Allowable stress values, as found in the ASME BPVC, which are restricted in application by footnote or are italicized must not be used. Where multiple stresses are listed for a material, the lowest value of the listing must be used unless otherwise approved by the Commandant. In all cases the temperature is understood to be the actual temperature of the component.

(3) Where the operator desires to use a material not listed, permission must be obtained from the Commandant. Requirements for testing found in § 56.97 may affect design and should be considered. Special design limitations may be found for specific systems. Refer to subpart 56.50 for specific requirements.

* * * * *

§ 56.10–1 [Amended]

■ 135. Amend § 56.10–1 as follows:
■ a. In paragraph (a), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ b. In paragraph (b), remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.
■ 136. Amend § 56.10–5 as follows:
■ a. In paragraph (a):
■ i. Remove the word ''shall'' and add, in its place, the word ''must''; and
■ ii. Remove the text ''table 56.60–1(a)'' and add, in its place, the text ''table 1 to § 56.60–1'';
■ b. Revise paragraphs (b) and (c)(1) and (2);
■ c. In paragraph (c)(3), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';
■ d. Revise paragraph (c)(4); and
■ e. In paragraph (c)(5), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 56.10–5 Pipe.

* * * * *

(b) *Ferrous pipe.* ASTM A53/A53M (incorporated by reference, see § 56.01–2) furnace welded pipe must not be used for combustible or flammable liquids within machinery spaces. (See §§ 30.10–15 and 30.10–22 of this chapter for definitions of combustible and flammable liquids.)

* * * * *

(c) * * *

(1) Copper and brass pipe for water and steam service may be used for design pressures up to 250 psig and for design temperatures to 406 °F.

(2) Copper and brass pipe for air may be used in accordance with the allowable stresses of the materials found from table 1 to § 56.60–1.

* * * * *

(4) Copper tubing may be used for instrument service up to 1,000 psig per square inch.

* * * * *

■ 137. Amend § 56.15–1 as follows:
■ a. In paragraph (a), add the words ''meeting the standards specified in this part and'' after the word ''fittings'';
■ b. In paragraph (b):
■ i. Remove the text ''tables 56.60–1(a) and 56.60–1(b)'' and add, in its place, the text ''tables 1 and 2 to § 56.60–1''; and
■ ii. Remove the words ''pounds per square inch gage'' and add, in their place, the text ''psig'';
■ c. Revise paragraph (c)(2);
■ d. In paragraph (c)(4)(ii)(B), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''; and
■ e. In paragraph (e), remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

The revision reads as follows:

§ 56.15–1 Pipe joining fittings.

* * * * *

(c) * * *

(2) The maximum allowable working pressure may be determined by—

(i) Calculations comparable to those of ASME B31.1 (incorporated by reference;

see § 56.01–2) or Section VIII of the ASME BPVC (incorporated by reference; see § 56.01–2);

(ii) Subjecting a representative model to a proof test or experimental stress analysis described in paragraph A–22 of Section I of the ASME BPVC (incorporated by reference; see § 56.01–2); or

(iii) Other means specifically accepted by the Marine Safety Center.

* * * * *

■ 138. Revise § 56.15–5 to read as follows:

§ 56.15–5 Fluid-conditioner fittings.

(a) Fluid-conditioner fittings meeting the standards of this part and certified in accordance with subpart 50.25 of this subchapter are acceptable for use in piping systems.

(b) Fluid-conditioner fittings made in accordance with the applicable standards listed in table 2 to § 56.60–1 of this part and of materials complying with subpart 56.60 of this part, may be used within the material, size, fluid, pressure, and temperature limitations of those standards and within any further limitations specified in this subchapter.

(c) The maximum allowable working pressure may be determined in accordance with § 56.15–1(c) of this part.

(d) If welded, nonstandard fluid-conditioner fittings must be welded in accordance with subpart 56.70 of this part and part 57 of this chapter or by other processes specifically approved by the Marine Safety Center.

(e) Heat exchangers having headers and tubes, and brazed boiler steam air heaters, are not considered fluid-conditioner fittings and must meet the requirements in part 54 of this chapter regardless of size. For brazed boiler steam air heaters, see also § 56.30–30(b)(1) of this part.

§ 56.15–10 [Amended]

■ 139. Amend § 56.15–10 as follows:

■ a. Remove paragraph (a);

■ b. Redesignate paragraphs (b) and (c) as paragraphs (a) and (b); and

■ c. In newly redesignated paragraph (a), remove the text ''table 56.60–1(b)'' and add, in its place, the text ''table 2 to § 56.60–1''.

■ 140. Amend § 56.20–1 as follows:

■ a. In paragraph (c)(1), remove the text ''pressure-containing'';

■ b. Revise paragraphs (c)(2) and (3); and

■ c. Remove paragraph (d).

The revisions read as follows:

§ 56.20–1 General.

* * * * *

(c) * * *

(2) The maximum allowable working pressure may be determined by § 56.15–1(c)(2) of this part.

(3) Valves must be tested in accordance with the requirements of the applicable incorporated standard or § 56.97 of this part.

* * * * *

■ 141. Revise § 56.20–5 to read as follows:

§ 56.20–5 Marking (modifies 107.2).

Each valve marking must be in accordance with MSS SP–25 (incorporated by reference; see § 56.01–2).

§ 56.20–7 [Amended]

■ 142. In § 56.20–7, reserve paragraph (b).

■ 143. Revise § 56.20–9 to read as follows:

§ 56.20–9 Valve construction.

(a) Each valve must close with a right-hand (clockwise) motion of the handwheel or operating lever as seen by one facing the end of the valve stem. Each nonrising-stem valve, lever-operated valve, or other valve where, because of design, the position of the disc or closure mechanism is not obvious must be fitted with an indicator to show whether the valve is opened or closed. No such indicator is required for any valve located in a tank or similar inaccessible space when indicators are available at accessible sites. The operating levers of quarter-turn valves must be parallel to the fluid flow when open and perpendicular to the fluid flow when closed.

(b) Valves of Class I piping systems having diameters exceeding 2 inches must have bolted, pressure seal, or breech lock bonnets and flanged or welding ends. Socket type welding ends must meet § 56.30–5(c) and § 56.30–10(b)(4). For diameters not exceeding 2 inches, screwed union bonnet or bolted bonnet, or bonnetless valves which prevent the stem from screwing out of the body may be employed. Outside screw and yoke design must be used for valves 3 inches and larger for pressures above 600 psig. Cast iron valves with screwed-in or screwed-over bonnets are prohibited. Union bonnet type cast iron valves must have the bonnet ring made of steel, bronze, or malleable iron.

(c) Valves must be designed for the maximum pressure to which they may be subjected, but in no case must the design pressure be less than 50 psig. The use of wafer type resilient seated valves is subject to the requirements of § 56.20–15.

(d) Disks or disk faces, seats, stems and other wearing parts of valves must be made of material possessing corrosion and heat-resisting qualities suitable for the service conditions to which they may be subjected.

(e) Plug cocks must be constructed with satisfactory and positive means of preventing the plug from becoming loosened or removed from the body when the plug is operated.

(f) Cocks must be marked in a straight line with the body to indicate whether they are open or closed.

■ 144. Revise § 56.20–15 to read as follows:

§ 56.20–15 Valves employing resilient material.

(a) A valve in which the closure is accomplished by resilient nonmetallic material instead of a metal to metal seat must comply with the design, material, construction and testing for valves specified in this section.

(b) Valves employing resilient material are divided into three categories: Positive shutoff, Category A, and Category B, and must be tested and used as follows:

(1) *Positive shutoff valves.* The closed valve must pass less than 10 ml/hr (0.34 fluid oz/hr) of liquid, or less than 3 l/hr (0.11 cubic ft/hr) of gas per inch nominal pipe size through the line at full rated pressure after being subjected to the fire test requirements of API 607 (incorporated by reference; see § 56.01–2). Packing material must be fire resistant. Piping subject to internal head pressure from a tank containing oil must be fitted with positive shutoff valves located at the tank in accordance with § 56.50–60(d). Positive shutoff valves may be used in any location in lieu of a Category A or Category B valve.

(2) *Category A valves.* Category A valves may be used in any location except where positive shutoff valves are required by § 56.50–60(d). To be qualified as a Category A valve, the valve must meet the fire test and leakage requirements of API 607.

(i) Category A valves are required at vital piping system manifolds;

(ii) Category A valves must be used in isolation valves in cross-connects between two piping systems, at least one of which is a vital system, where failure of the valve in a fire would prevent the vital system(s) from functioning as designed, and

(iii) Category A valves must be used for valves providing closure for any opening in the shell of the vessel.

(3) *Category B valves.* The closed valve will not provide effective closure of the line or will permit appreciable leakage from the valve after the resilient material is damaged or destroyed. Category B valves are not required to be

tested and may be used in any location except where a Category A or positive shutoff valve is required.

(c) Resiliently seated valves previously accepted by the Commandant or the Marine Safety Center may continue to be used within the service restrictions of their acceptance.

§ 56.20–20 [Amended]

■ 145. Amend § 56.20–20 as follows:
■ a. In paragraph (a):
■ i. Remove the word ''shall'' and add, in its place, the word ''must''; and
■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and
■ b. Remove paragraph (c).
■ 146. Revise § 56.25–5 to read as follows:

§ 56.25–5 Flanges.

Each flange must conform to the design requirements of either the applicable standards of table 2 to § 56.60–1, or of those of Appendix 2 of Section VIII of the ASME BPVC (incorporated by reference; see § 56.01–2). Plate flanges must meet the requirements of § 56.30–10(b)(5). Flanges may be integral or may be attached to pipe by threading, welding, brazing, or other means within the applicable standards specified in table 2 to § 56.60–1.
■ 147. Revise § 56.25–10 to read as follows:

§ 56.25–10 Flange facings.

Flange facings must be in accordance with the applicable standards listed in table 2 to § 56.60–1 and MSS SP–6 (incorporated by reference; see *§ 56.01–2*).

§ 56.25–15 [Amended]

■ 148. Amend § 56.25–15 as follows:
■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';
■ b. In paragraph (b), remove the text ''table 56.60–1(b) of this part'' and add, in its place, the text ''table 2 to § 56.60–1''; and
■ c. In paragraph (c), remove the words ''pounds per square inch'' and add, in their place, the text ''psig''.
■ 149. Amend § 56.25–20 as follows:
■ a. In the introductory text to paragraph (a), remove the subject heading;
■ b. Revise paragraphs (a)(1), (b), (c), and (d); and
■ c. In paragraph (e), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 56.25–20 Bolting.

(a) * * *

(1) Bolts, studs, nuts, and washers must comply with applicable standards and specifications listed in § 56.60–1. Bolting must be in accordance with ASME B16.5 (incorporated by reference; see § 56.01–2).

* * * * *

(b) Carbon steel bolts or bolt studs may be used if operating pressure does not exceed 300 psig and the operating temperature does not exceed 400 °F. Carbon steel bolts must have heavy hexagon heads in accordance with ASME B18.2.1 (incorporated by reference, see § 56.01–2) and must have heavy semifinished hexagonal nuts in accordance with ASME B18.2.2 (incorporated by reference, see § 56.01–2).

(c) Alloy steel stud bolts must be threaded full length and use heavy semifinished hexagonal nuts in accordance with ASME B18.2.2.

(d) Alloy bolts or studs and nuts are to be threaded in accordance with ASME B1.1 (incorporated by reference; see § 56.01–2), Class 2A external threads, and Class 2B internal threads (8-thread series 8UN for one inch and larger).

* * * * *

§ 56.30–3 [Amended]

■ 150. In § 56.30–3, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.
■ 151. Amend § 56.30–5 as follows:
■ a. In paragraphs (b)(1) and (2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ b. In paragraph (b)(3), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';
■ c. Revise paragraph (c);
■ d. In paragraph (d), remove the first sentence; and
■ e. In paragraph (e), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 56.30–5 Welded joints.

* * * * *

(c) *Socket welds* (*Modifies 127.3.3A.*). (1) Each socket weld must conform to ASME B16.11 (incorporated by reference; see *§ 56.01–2*), to applicable standards listed in table 2 to § 56.60–1, and to Figure 127.4.4C in ASME B31.1 (incorporated by reference; see *§ 56.01–2*) as modified by *§ 56.30–10(b)(4).*

(2) Restrictions on the use of socket welds appear in § 56.70–15(d)(3) for Class I service and in § 56.50–105 for low temperature service. See § 56.70–15(d)(4) for Class II service.

* * * * *

■ 152. Amend § 56.30–10 as follows:
■ a. Revise the introductory text to paragraph (b);
■ b. In paragraph (b)(1), remove the text ''Figure 56.30–10(b)'' and add, in its place, the text ''Figure § 56.30–10(b)''; and ii. Remove the text ''46 CFR 56.30–20, table '' and add, in its place, the text ''table §'';
■ c. Revise paragraphs (b)(2) through (7);
■ d. In paragraph (b)(8):
■ i. Revise the subject heading;
■ ii. Remove the text ''Figure 56.30–10(b)'' and add, in its place, the text ''figure § 56.30–10(b)''; and
■ iii. remove the text ''46 CFR'' and add, in its place, the symbol ''§'';
■ e. In paragraph (b)(9):
■ i. Revise the subject heading; and
■ ii. Remove the text ''Figure 56.30–10(b)'' and add, in its place, the text ''figure § 56.30–10(b)'';
■ f. Revise paragraphs (b)(10) through (12);
■ g. In paragraph (b)(13),
■ i. Revise the subject heading; and
■ ii. Remove the text ''Figure 56.30–10(b)'' and add, in its place, the text ''figure § 56.30–10(b)'';
■ h. Revise paragraph (b)(14);
■ i. In paragraph (b)(13):
■ i. Revise the subject heading;
■ ii. Remove the text ''Figure 56.30–10(b)'' and add, in its place, the text ''figure § 56.30–10(b)''; and
■ j. Designate the figure immediately following paragraph (b) as figure § 56.30–10(b) and redesignate note to Figure 56.30–10(b) as note 1 to figure § 56.30–10(b).

The revisions read as follows:

§ 56.30–10 Flanged joints (modifies 104.5.1(a)).

* * * * *

(b) Flanges may be attached by any method shown in figure § 56.30–10(b) or by any means approved by the Marine Safety Center. Pressure temperature ratings of the appropriate ASME standard must not be exceeded.

(1) *Figure § 56.30–10(b), Method 1.* * * *

(2) *Figure § 56.30–10(b), Method 2.* ASME B16.5 (incorporated by reference; see § 56.01–2) Class 150 and Class 300 low-hubbed flanges with screw threads, plus the addition of a strength fillet weld of the size as shown, may be used in Class I systems not exceeding 750 °F or 4 NPS, in Class II systems, and in Class II–L systems not exceeding 1 NPS. If 100 percent radiography is required by § 56.95–10 threaded flanges are not permitted and buttwelding flanges must be provided.

(3) *Figure § 56.30–10(b), Method 3.* Slip-on flanges meeting ASME B16.5 may be used in piping systems of Class

I, Class II, or Class II–L not to exceed the service pressure-temperature ratings, and not to exceed 4-inch Nominal Pipe Size (NPS) in systems of Class I and Class II–L. If 100 percent radiography is required by § 56.95–10, slip-on flanges are not permitted and butt-welding flanges are required. Restrictions on the use of slip-on flanges appear in § 56.50–105 for low-temperature piping systems.

(4) *Figure § 56.30–10(b), Method 4.* ASME B16.5 socket welding flanges may be used in Class I or II–L systems not exceeding 3 NPS for class 600 and lower class flanges and 21/2NPS for class 900 and class 1500 flanges within the service pressure-temperature ratings of the standard. Whenever full radiography is required by § 56.95–10 socket welding flanges are not permitted and a butt weld type connection must be provided. For Class II piping, socket welding flanges may be used without diameter limitation. Restrictions on socket welds appear in § 56.50–105 for low temperature piping systems.

(5) *Figure § 56.30–10(b), Method 5.* Flanges fabricated from steel plate meeting the requirements of part 54 of this chapter may be used for Class II piping for pressures not exceeding 150 psig per square inch and temperatures not exceeding 450 °F. Plate material listed in UCS–6(b) of Section VIII of the ASME BPVC (incorporated by reference; see § 56.01–2) may not be used in this application, except that material meeting ASTM A36/A36M (incorporated by reference; see § 56.01–2) may be used. The fabricated flanges must conform at least to the ASME B16.5 class 150 flange dimensions.

(6) *Figure § 56.30–10 (b), Method 6.* Steel plate flanges meeting the material and construction requirements listed in paragraph (b)(5) of this section may be used for Class II piping for pressures not exceeding 150 psig or temperatures not exceeding 650 °F. The flange must be attached to the pipe as shown by figure § 56.30–10(b), Method 6.

(7) *Figure § 56.30–10 (b), Method 7.* Lap joint flanges (Van Stone) may be used for Class I and Class II piping. The ends of the pipe must be heated from 1,650° to 1,900 °F based on the size of the pipe. Extra thickness of metal built up in the end of the pipe must be machined to restore the pipe to its original diameter. The width of the lap flange must be at least three times the thickness of the pipe wall and the end of the pipe must be properly stress relieved after the flanging operation is completed. Manufacturers desiring to produce this type of joint must demonstrate to a marine inspector that they have the proper equipment and personnel to produce an acceptable joint.

(8) *Figure § 56.30–10(b), Method 8.* * **

(9) *Figure § 56.30–10(b), Method 9.* * **

(10) *Figure § 56.30–10 (b), Method 10.* Flanges may be attached by shrinking the flange on to the end of the pipe and flaring the end of the pipe to an angle of not less than 20°. A fillet weld of the size shown by figure § 56.30–10(b), Method 10, must be used to attach the hub to the pipe. This flange is limited to a pressure of 300 psig and a temperature not exceeding of 500 °F.

(11) *Figure § 56.30–10(b), Method 11.* The flange of the type described and illustrated by figure § 56.30–10(b), Method 10, except with the fillet weld omitted, may be used for Class II piping not exceeding 150 psig and temperatures not exceeding 450 °F.

(12) *Figure § 56.30–10(b), Method 12.* High-hub bronze flanges may be used for temperatures not exceeding 425 °F. A preinserted ring of silver brazing alloy having a melting point not less than 1,000 °F must be inserted into the groove. A suitable flux must be applied to the surfaces to be joined to produce a satisfactory joint.

(13) *Figure § 56.30–10(b), Method 13.* * **

(14) *Figure § 56.30–10(b), Method 14.* Flanges may be attached to nonferrous pipe by inserting the pipe in the flange and flanging the end of the pipe into the recess machined in the face of the flange to receive it. The pipe must be securely brazed to the wall of the flange.

(15) *Figure § 56.30–10(b), Method 15.* * **

* * * * *

■ 153. Amend § 56.30–20 as follows:
■ a. In paragraph (b):
■ i. Remove the text ''*Reproduces*'' and add, in its place, the text ''*Modifies*''; and
■ ii. Remove the text ''46 CFR 56.60–1, table 56.60–1(b)'' and add, in its place, the text ''table 2 to § 56.60–1'';
■ b. In paragraph (c), remove the text ''table 56.30–20(c)'' and add, in its place, the text ''table § 56.30–20(c)'';
■ c. Redesignate table 56.30–20(c) as table § 56.30–20(c);
■ d. In note 2 to newly redesignated table § 56.30–20(c) remove the text ''when commercially available components such as pumps, valves and strainers may only be obtained with threaded connections''; and
■ e. Revise paragraph (d).

The revision reads as follows:

§ 56.30–20 Threaded joints.

* * * * *

(d) No pipe with a wall thickness less than that of standard weight of ASME B36.10M (incorporated by reference; see § 56.01–2) steel pipe may be threaded. For restrictions on the use of pipe in steam service more than 250 psig or water service over 100 psig and 200 °F (938C), see part 104.1.2(c)(1) of ASME B31.1 (incorporated by reference; see § 56.01–2).

§ 56.30–25 [Amended]

■ 154. Amend § 56.30–25 as follows:
■ a. In paragraph (a):
■ i. Remove the text ''F 1387'' and add, in its place, the text ''F1387''; and
■ ii. Remove the words ''as long as they are maintained in good condition''; and
■ b. In paragraph (d), remove the words ''or reducing the wall thickness''.

§ 56.30–27 [Amended]

■ 155. Amend § 56.30–27 by removing the words ''in marine installations''.
■ 156. Amend § 56.30–30 by revising paragraphs (a) and (b)(1) to read as follows:

§ 56.30–30 Brazed joints.

(a) *General (refer also to subpart 56.75).* The minimum socket depth must be sufficient for the intended service. Brazing alloy must either be end-fed into the socket or must be provided in the form of a preinserted ring in a groove in the socket. The brazing alloy must be sufficient to fill completely the annular clearance between the socket and the pipe or tube.

(b) * * *(1) Brazed socket-type joints must not be used on systems containing flammable or combustible fluids in areas where fire hazards are involved or where the service temperature exceeds 425 °F. Higher temperature service must be approved by the Commandant.

* * * * *

§ 56.30–35 [Amended]

■ 157. Amend § 56.30–35 as follows:
■ a. In paragraph (a):
■ i. Remove the text ''F 1476'' and add, in its place, the text ''F1476'';
■ ii. Remove the text ''F 1548'' and add, in its place, the text ''F1548''; and
■ iii, Remove the words ''as long as they are maintained in good condition'';b. In paragraph (b)(1), remove the words ''disable the vessel'' and add, in their place, the word ''occur''; and
■ c. In paragraph (c), remove the words ''do not provide positive protection against creep and''.
■ 158. Amend § 56.30–40 as follows:
■ a. Revise paragraph (b);
■ b. Remove paragraph (c);
■ c. Redesignate paragraphs (d) through (h) as paragraphs (c) through (g);
■ d. In newly redesignated paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ e. In newly redesignated paragraph (d), remove the text ''table 56.60–1(b) of this part'' and add, in its place, the text ''table 2 to § 56.60–1'';
■ f. Revise newly redesignated paragraph (e); and
■ g. In newly redesignated paragraphs (f) and (g), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 56.30–40 Flexible pipe couplings of the compression or slip-on type.

* * * * *

(b) Positive means must also be provided to prevent the coupling from ''creeping'' on the pipe and uncovering the joint. Bite type devices are not generally accepted for this purpose. Machined grooves or centering pins are considered positive means.

* * * * *

(e) Flexible couplings must not be used in cargo holds or in any other space where leakage, undetected flooding, or impingement of liquid on vital equipment may occur, or in tanks where the liquid conveyed in the piping system is not compatible with the liquid in the tank.

* * * * *

■ 159. Amend § 56.35–1 as follows:
■ a. Revise paragraph (a); and
■ b. In paragraph (b), remove the text ''46 CFR'' wherever it appears and add, in its place, the symbol ''§ ''.

The revision reads as follows:

§ 56.35–1 Pipe stress calculations (replaces 119.7).

(a) A summary of the results of pipe stress calculations for the main and auxiliary steam piping where the design temperatures exceed 800 °F must be submitted for approval. Calculations must be made in accordance with a method of stress analysis acceptable to the Marine Safety Center to determine the forces at all terminal connections, anchor and junction points, as well as the resultant bending stress, longitudinal pressure stress, torsional stress, and combined expansion stress at all such points. The location of the maximum combined stress must be indicated in each run of pipe between anchor points.

* * * * *

§ 56.35–10 [Amended]

■ 160. Amend § 56.35–10 as follows:
■ a. Remove paragraph (a);
■ b. Redesignate paragraph (b) as paragraph (a) and reserve new paragraph (b); and
■ c. In newly redesignated paragraph (a):
■ i. Remove the word ''piping''; and
■ ii. Remove the text ''table 56.60–1(b) of this part'' and add, in its place, the text ''table 2 to § 56.60–1''.
■ 161. Revise § 56.35–15 to read as follows:

§ 56.35–15 [Amended]

Metallic expansion joints must conform to the standards listed in table 2 to § 56.60–1 and may be used within their specified pressure and temperature rating.
■ 162. Revise § 56.50–1 to read as follows:

§ 56.50–1 General (replaces 122).

The requirements in this subpart for piping systems apply instead of those in Section 122 of ASME B31.1 (incorporated by reference; see § 56.01–2). The following installation requirements are applicable to all systems:

(a) Where pipes and scuppers are carried through watertight or oiltight bulkheads, decks or tank tops, or are carried through fire control bulkheads and decks, the integrity of the structure must be maintained. Lead or other heat sensitive materials must not be used in piping systems in bulkhead or deck penetrations where fire would impair the integrity of the penetration. (For nonmetallic or plastic pipe installations, see § 56.60–25(a).) Openings in structure through which pipes pass must be reinforced where necessary. Metallic materials having a melting point of 1,700 °F or less are considered heat sensitive and if used must be suitably insulated.

(b)(1) Pipes piercing the collision bulkhead must be fitted with valves operable from above the bulkhead deck and the valve must be fitted inside the forepeak tank adjacent to the collision bulkhead. The pipe penetrating the collision bulkhead must be welded to the bulkhead on both sides. The valve body must be of steel or ductile cast iron.

(2) Passenger vessels must not have the collision bulkhead pierced below the margin line by more than one pipe conveying liquids in the forepeak tank.

(c) Valves and cocks not forming part of a piping system are not permitted in watertight subdivision bulkheads. However, sluice valves or gates in oiltight bulkheads of tankships may be used if approved by the Marine Safety Center.

(d) Piping must generally not be run over switchboards, and must be installed as far away from other electrical equipment as practicable. When such leads are necessary, provision must be made to prevent leakage from damaging the equipment.

(e) Stuffing boxes must not be used on deep tank bulkheads, double bottoms or in any position where they cannot be easily examined. This requirement does not apply to ore carriers operating on the Great Lakes or cargo lines of oil tankers.

(f) Piping systems must be installed so that under no condition will the operation of safety or relief valves be impaired.

(g)(1) Power actuated valves may be used if approved for the system by the Marine Safety Center. All power actuated valves must have a backup manual means of operation.

(2)(i) Remote valve controls must be fitted with nameplates describing the applicable system.

(ii) Remote valve controls must be accessible under normal service conditions.

(iii) Remote valve controls, except reach rods, must be fitted with indicators that show whether the valves they control are open or closed. Valve position indicating systems must be independent of valve control systems.

(iv) Valve reach rods must be adequately protected.

(v) Solid reach rods must be used in tanks containing liquids, except that reach rods of constructed of extra-heavy pipe may be considered acceptable by the OCMI.

(3) Air-operated remote control valves must be provided with self-indicating lines at the control boards that indicate the desired valve positions, such as open or closed.

(h) Suitable drains must be provided at low points of piping systems.

(i) Valves and cocks must be easily accessible. Valves attached to the shell of the vessel or to sea chests located below deck plating must be operable from above the deckplates.

(j) When welded fabrication is employed, a sufficient number of detachable joints must be provided to facilitate maintenance of machinery.

(k) Piping systems used where the fluid temperature exceeds 150 °F must be suitably insulated as necessary to preclude injury to personnel.

(l) Where pipes are run through dry cargo spaces they must be protected from mechanical injury by a suitable enclosure or other means.
■ 163. Amend § 56.50–10 by revising paragraph (b) to read as follows:

§ 56.50–10 Special gauge requirements.

* * * * *

(b) Fuel oil service and transfer, fire, cargo and boiler feed pumps must be provided with a discharge pressure gage. Additional information pertaining to fire pumps is in § 34.10–5 of

subchapter D (Tank Vessels), § 76.10–5 of subchapter H (Passenger Vessels), § 95.10–5 of subchapter I (Cargo and Miscellaneous Vessels), and § 108.417 of subchapter IA (Mobile Offshore Drilling Units), all of this chapter.

■ 164. Amend § 56.50–15 as follows:

■ a. In paragraph (a), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraphs (b) and (c);

■ c. In paragraph (d), remove the word ''shall'' and add, in its place, the word ''must'';

■ d. Revise paragraphs (f), (g), (h)(2) and (3), and (i);

■ e. In paragraph (j), remove the word ''shall'' and add, in its place, the word ''must''; and

■ f. Revise paragraph (k).

The revisions read as follows:

§ 56.50–15 Steam and exhaust piping.

* * * * *

(b) Main superheater outlet piping systems, desuperheated piping systems, and other auxiliary superheated piping systems led directly from the boiler superheater must be designed for a pressure not less than the pressure at which the superheater safety valve is set. In the case of a superheated safety valve which is drum pilot actuated, the design pressure of such piping systems must not be less than the pressure setting of the actuator valve on the drum. Valves and fittings must be selected for the above systems from the accepted standards in table 1 to 56.60–1, using the pressure-temperature rating in the standard.

(c) Steam stop valves in sizes exceeding 6 inches must be fitted with bypasses.

* * * * *

(f) The auxiliary steam piping of each vessel equipped with more than one boiler must be so arranged that steam for the whistle and vital auxiliary systems may be supplied from any power boiler.

(g) Steam and engine exhaust pipes must not be led through coal bunkers or dry cargo spaces.

(h) * * *

(2) The pressure in steam heating systems must not exceed 150 psig, and the steam pressure for accommodation and public space heating must not exceed 45 psig.

(3) Steam lines must be suitably located and shielded to minimize hazards to any personnel within the space.

* * * * *

(i) Where the exhaust side of machinery is not designed for the full inlet pressure, the exhaust side must be protected from over pressure by one of the following means:

(1) A relief valve in the exhaust side with appropriate set pressure and sufficient capacity to prevent the exhaust side from overpressure.

(2) A sentinel valve or other warning device fitted on the exhaust side, together with a trip device, which will close the inlet valve.

* * * * *

(k) Means must be provided for draining every steam pipe in which water hammer might occur.

■ 165. Amend § 56.50–20 as follows:

■ a. Revise paragraph (a);

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''; and

■ c. In paragraph (c), remove the words ''specifically provided for in other regulations or as''.

The revision reads as follows:

§ 56.50–20 Pressure relief piping.

(a) General. There must be no intervening stop valves between the pressure vessel or piping system being protected and its protective device or devices, except as authorized by the Marine Safety Center.

* * * * *

■ 166. Revise § 56.50–25 to read as follows:

§ 56.50–25 Safety and relief valve escape piping.

(a) Escape piping from safety valves must have an area of not less than that of the combined areas of the outlets of all valves discharging thereto and must be led as near vertically as practicable to the atmosphere.

(b) Expansion joints or flexible pipe connections must be fitted in escape piping. The piping must be adequately supported so that no stress is transmitted to the safety valve body.

(c) Safety or relief valve discharges, when permitted to terminate in the machinery space, must be led below the floorplates or to a remote position.

(d) The back pressure effect of the escape piping on the operation of the relief device must be considered.

■ 167. Amend § 56.50–30 as follows:

■ a. In paragraph (a)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraphs (a)(3) and (4), and (b), the subject heading to paragraph (c), and paragraphs (c)(1) and (2);

■ c. In the introductory text to paragraph (d), remove the word ''shall'' and add, in its place, the word ''must'';

■ d. Revise paragraphs (d)(1) and (2);

■ e. In paragraph (d)(3) and the introductory text to paragraph (e), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ f. Revise paragraph (e)(1);

■ g. In paragraph (e)(2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ h. Revise paragraph (f).

The revisions read as follows:

§ 56.50–30 Boiler feed piping.

(a) * * *

(3) Feed discharge piping from the pump up to, but not including the required stop and stop-check valves, must be designed for either the feed pump relief valve setting or the shutoff head of the pump if a relief valve is not fitted. (Refer to § 56.07–10(b) for specific requirements.) Feed piping from the boiler, to and including the required stop and stop-check valves (see paragraph (b) of this section), must have a design pressure which exceeds the maximum allowable working pressure of the boiler by either 25 percent or 225 psig, whichever is less. The value of allowable stress for design purposes must be selected as described in § 56.07–10(e) at a temperature not below that for saturated steam at the maximum allowable working pressure of the boiler.

(4) Feed pumps for water tube boilers must have freshwater connections only.

(b) *Feed valves.* (1) Stop and stop-check valves must be fitted in the main feed line and must be attached as closely as possible to drum inlets or to the economizer inlet.

(2) Auxiliary feed lines must be fitted with stop valves and stop-check valves.

(3) Boilers fitted with economizers must have a check valve fitted in the economizer discharge and located as close as possible to the drum feed inlet nozzle.

(c) *Feed water regulators and heaters.* (1) Where feed water regulators or feed water heaters are installed, an alternate means of operation with these devices bypassed must be provided.

(2) All feed water regulators installed in a unit feed system must be fitted with an external bypass.

* * * * *

(d) * * *

(1) Vessels having a feed pump attached to the main propulsion unit must be provided with at least one independently driven feed pump. Each of these pumps must be used exclusively for feed purposes and must be capable of supplying the operating boilers at their normal capacity. In addition, a second independently driven pump, capable of supplying such boilers at 75 percent of their normal capacity, must be provided.

(2) If two independently driven pumps are provided, each capable of supplying the boilers at their normal required operating capacity, and neither pump is used for other purposes, the third or emergency feed pump is not required.

* * * * *

(e) * * *

(1) The unit feed system may be used on vessels having two or more boilers. When the unit feed system is employed each boiler must have its own independently driven main feed pump capable of supplying the boiler at its normal operating capacity. In addition, there must be an auxiliary independent feed pump of the same capacity that can be operated in place of and in conjunction with the main feed pump. In vessels with three or more boilers, not more than two boilers may be served by any one auxiliary pump. The auxiliary pump may be so interconnected that any pump can feed any boiler.

* * * * *

(f) *Feedwater.* The feedwater must be introduced into a boiler as required by § 52.01–105(d) of this subchapter.

■ 168. Revise § 56.50–35 to read as follows:

§ 56.50–35 Condensate pumps.

Two means must be provided for discharging the condensate from the main condenser, one of which must be independent of the main propelling machinery.

■ 169. Amend § 56.50–40 as follows:

■ a. In paragraph (a)(1), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ b. In paragraph (a)(2), remove the word ''shall'' and add, in its place, the word ''must'';

■ c. Revise paragraph (b);

■ d. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''; and

■ e. Revise paragraph (d).

The revisions read as follow:

§ 56.50–40 Blowoff piping (replaces 122.1.4).

* * * * *

(b) Blowoff must be designed for not less than 125 percent of the maximum allowable working pressure of the boiler, or the maximum allowable working pressure of the boiler plus 225 psig, whichever is less. The value of allowable stress for design purposes must be selected as described in § 56.07–10(e) at a temperature not below that of saturated steam at the maximum allowable working pressure of the boiler.

* * * * *

(d) Globe valves must not be used for blowoff service.

§ 56.50–45 [Amended]

■ 170. Amend § 56.50–45 as follows:

■ a. In paragraphs (a) and (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ b. Remove paragraph (d).

■ 171. Amend § 56.50–50 as follows:

■ a. Revise paragraphs (a), (b), and (c)(1);

■ b. In paragraph (c)(2), remove the text ''SOLAS II–1/21'' and add the text ''SOLAS Chapter II–1, Regulation 35–1'' in its place;

■ c. Revise paragraph (c)(3)(iii);

■ d. In paragraph (c)(3)(iv), remove the words ''for both manual operation and repair'';

■ e. In paragraph (c)(3)(vi), remove the text ''(O/B/O)'';

■ f. Revise the introductory text to paragraph (d);

■ g. Designate the formula immediately following paragraph (d)(1) as Formula 1 to 56.50–50(d) and the formula immediately following paragraph (d)(2) as Formula 2 to 56.50–50(d), so that they appear immediately following the introductory text to paragraph (d);

■ h. Revise paragraph (d)(1);

■ i. In paragraph (d)(2), remove the text ''For branch suctions to cargo and machinery spaces:'' and add, in its place, the text ''The following ''where'' clause applies to Formulas 1 and 2 to 56.50–50(d):'';

■ j. Designate Notes 1 through 6 as Note 1 to paragraph (d)(2), Note 2 to paragraph (d)(2), Note 3 to paragraph (d)(2), Note 4 to paragraph (d)(2), Note 5 to paragraph (d)(2),and Note 6 to paragraph (d)(2), respectively.

■ k. In paragraph (d)(3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ l. In paragraphs (d)(4):

■ i. Remove the text ''Formulas (1) and (2) of this paragraph'' and add, in its place, the text ''Formulas 1 and 2 to 56.50–50(d)''; and

■ ii. Remove the word ''shall'' and add, in its place, the word ''must'';

■ m. In paragraph (d)(5), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ n. In paragraph (e), remove the text ''Formula (2) in paragraph (d)'' and add, in its place, the text ''Formula 2 to 56.50–50(d)'';

■ o. Revise paragraphs (f)(1) and (2);

■ p. In paragraph (f)(4), remove the word ''shall'' and add, in its place, the word ''must'';

■ q. Revise paragraph (g);

■ r. In paragraph (h), remove the text ''Except as allowed by paragraph (c)(4)(vii) of this section, piping for draining a cargo hold or machinery space must be separate from piping used for filling or emptying any tank where water or oil is carried.'';

■ s. In paragraph (i), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ t. Revise paragraphs (j) and (k);

■ u. In paragraphs (l) and (m), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ v. Designate the concluding Note as Note 7 to § 56.50–50.

The additions and revisions read as follows:

§ 56.50–50 Bilge and ballast piping.

(a)(1) The requirements of SOLAS Chapter II–1 regulation 35–1 (incorporated by reference, see § 56.01–2) for passenger and cargo ships are considered equivalent to this section.

(2) All vessels except unmanned barges must be provided with a satisfactory bilge pumping plant capable of pumping from and draining any watertight compartment except for ballast, oil and water tanks. The bilge pumping system must be capable of operation under all practicable conditions after a casualty whether the ship is upright or listed.

(3) Arrangements must be made whereby water in the compartments will drain to the suction pipes. Where piping is led through the forepeak, see § 56.50–1(b).

(4) Where the vessel is to carry flammable liquids with a flashpoint below 23 °C (74 °F) in enclosed cargo spaces, the bilge-pumping system must be designed to ensure against inadvertent pumping of such liquids through machinery spaces.

(5) For vessels constructed on or after June 9, 1995, and on an international voyage, arrangements must meet the requirements of SOLAS Chapter II–1 regulation 35–1 to drain the enclosed cargo spaces on either the bulkhead deck of a passenger vessel or the freeboard deck of a cargo vessel.

(b) Passenger vessels must have provision made to prevent the compartment served by any bilge suction piping from being flooded in the event the pipe is severed or otherwise damaged by collision or grounding in any other compartment. Where the piping is located within one-fifth of the beam of the side of the vessel or is in a duct keel, a nonreturn valve must be fitted to the end of the pipe in the compartment which it serves.

(c)(1) Each bilge suction must lead from a manifold unless otherwise approved by the Marine Safety Center.

As far as practicable, each manifold must be in, or capable of remote operation from, the same space as the bilge pump. In either case, the manifold must be capable of being locally controlled from the floorplates. As far as practicable, each overboard-discharge valve for a bilge system must comply with the requirements governing location and accessibility for suction manifolds. Except as otherwise permitted by paragraph (c)(4) of this section for a vessel employing a common-rail bilge system, each bilge-manifold valve controlling a bilge suction from any compartment must be of the stop-check type.

* * * * *

(3) * * *

(iii) The stop valve or the stop-check valve is power-driven, is capable of remote operation from the space where the pump is, and is capable of manual operation.

* * * * *

(d) The internal diameter of bilge suction pipes including strainers must be determined by Formulas 1 and 2 to 56.50–50(d), except that the nearest commercial size not more than one-fourth inch under the required diameter may be used. * * *

(1) For suctions to each main bilge pump, use Formula 1 to 56.50–50(d). For branch suctions to cargo and machinery spaces, use Formula 2 to 56.50–50(d).

* * * * *

(f) * * *

(1) On passenger vessels propelled by steam and operating on an international voyage or on ocean, coastwise, or Great Lakes routes, the main circulating pump is to be fitted with a direct bilge suction for the machinery space. The diameter of such suctions must not be less than two-thirds the diameter of the main sea injection. Other independent power pumps in the machinery space may be approved by the Commandant if the main circulating pump is not suitable.

(2) On passenger vessels propelled by internal combustion engines and operating on an international voyage or on ocean, coastwise, or Great Lakes routes, the largest available pump in the engine room is to be fitted with the direct bilge suction in the machinery space. The area of the suction pipe is to be equal to the full suction inlet of the pump.

* * * * *

(g) Each individual bilge suction must be fitted with a suitable strainer having an open area of not less than three times that of the suction pipe. In addition a mud box or basket strainer must be fitted in an accessible position between the bilge suction manifold and the pump.

* * * * *

(j) When dry cargo is to be carried in deep tanks, arrangement must be made for blanking-off the oil and ballast lines. The bilge suctions must be blanked-off when oil or ballast is carried.

(k) Where bilge and ballast piping is led through tanks, except ballast piping in ballast tanks, means must be provided to minimize the risk of flooding of other spaces due to pipe failure. In this regard, such piping may be in a watertight pipe tunnel, or the piping may be of Schedule 80 pipe wall thickness, fitted with expansion bends, with all joints welded. Alternative designs may be approved by the Marine Safety Center. Where a pipe tunnel is installed, the watertight integrity of the bulkheads must be maintained. No valve or fitting may be located within the tunnel if the pipe tunnel is not of sufficient size to afford access.

* * * * *

■ 172. Amend § 56.50–55 as follows:

■ a. In paragraph (a)(1), remove the text ''table 56.50–55(a)'' and add, in its place, the text ''table § 56.50–55(a)'';

■ b. Reserve paragraph (a)(2);

■ c. Redesignate table 56.50–55(a) as table § 56.50–55(a) and revise note 5 to newly redesignated table § 56.50–55(a);

■ d. Revise paragraphs (b)(1) and (2), and (c);

■ e. In paragraph (d), remove the word ''shall'' and add, in its place, the word ''must'';

■ f. In paragraph (e)(1), remove the words ''submitted for consideration'' and add, in their place, the word ''considered'';

■ g. Revise paragraph (e)(2);

■ h. In paragraph (e)(3), remove the word ''shall'' and add, in its place, the word ''must'';

■ i. In paragraph (e)(4), remove the last sentence; and

■ j. In paragraph (f), remove the words ''fitted with necessary connections to the bilge pumping'' and add, their place, the words ''connected to the bilge''.

The revisions read as follows:

§ 56.50–55 Bilge pumps.

(a) * * *

(1) * * *

[5] Vessels operating on lakes (including Great Lakes), bays, sounds, or rivers where steam is available, or where a suitable water supply is available from a power-driven pump, may substitute siphons or eductors for one of the required power-driven pumps, provided a siphon or eductor is permanently installed in each hold or compartment.

(b) * * *

(1) Ocean going sailing vessels and barges must be provided with pumps connected to the bilge main as required in table § 56.50–55(b)(1).

TABLE § 56.50–55(b)(1)—BILGE PUMPS REQUIRED FOR NONSELF-PROPELLED VESSELS

Type of vessel	Waters navigated	Power pumps [1]	Hand pumps
Sailing	Ocean and coastwise	Two	(2)
Manned barges	.....do	Two	(2)
Manned barges	Other than ocean and coastwise	(3)	(3)
Unmanned barges	All waters	(3)	(3)
Mobile offshore drilling units	All waters	Two	None.

[1] Where power is available, independent power bilge pumps must be installed as required and must be connected to the bilge main.

[2] Efficient hand pumps connected to the bilge main may be substituted for the power pumps. Where there is no common bilge main, one hand pump will be required for each compartment.

[3] Suitable hand or power pumps or siphons, portable or fixed, carried either on board the barge or on the towing vessel must be provided.

(2) The pumps and source of power for oceangoing sailing vessels and barges must be located above the bulkhead deck or at the highest convenient accessible level.

* * * * *

(c) *Capacity of independent power bilge pump.* (1) Each power bilge pump must develop a suction velocity of not less than 400 feet per minute and a corresponding capacity based on the size of bilge main piping required by § 56.50–50(d)(1).

(2) Alternatively, the minimum pump capacity, Q, in m^3/hr may be based on the following formula:

$Q = 5.75d^2/1000$, where d = diameter of the main bilge suction piping, in mm.

(3) For vessels of less than 65 feet in length not engaged on international voyages, the pump must have a minimum capacity of 25 gallons per minute and need not meet the velocity requirement of this paragraph.

* * * * *

(e) * * *

(2) For non-self-propelled vessels requiring two bilge pumps, these pumps, insofar as practicable, must be located in separate watertight machinery spaces. When the location of bilge pumps in separate watertight compartments is not possible, the Marine Safety Center will consider alternate arrangements.

* * * * *

§ 56.50–57 [Removed and Reserved]

■ 173. Remove and reserve § 56.50–57.

■ 174. Amend § 56.50–60 as follows:

■ a. Revise paragraphs (a) and (b)(1);

■ b. In paragraph (b)(2), remove the text ''As far as practicable, no'' and add, in its place, the word ''No'';

■ c. In paragraph (c), remove the words ''low pressure'';

■ d. In paragraph (d)(1):

■ i. Remove the text ''A 395'' and add, in its place, the text ''F1155''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ e. Revise paragraphs (d)(1)(i), (d)(2) and (3)(i) and (ii);

■ f. In paragraph (d)(3)(iii), remove the words ''actuators shall'' and add, in their place ''power actuators must'';

■ g. Revise paragraph (d)(3)(iv);

■ h. In paragraph (d)(4), remove the words ''operating rods'' and add, in their place, the word ''operation'';

■ i. In paragraph (f), remove the word ''shall'' and add, in its place, the word ''must'';

■ j. In paragraph (j), remove the word ''well'';

■ k. Revise paragraphs (m)(1) and (2) and the introductory text to paragraph (n);

■ l. In paragraph (n)(1), remove the word ''Complying'' and add, in its place, the word ''Comply''; and

■ m. Revise paragraph (n)(2).

The revisions read as follows:

§ 56.50–60 Systems containing oil.

(a)(1) Oil-piping systems for cargo or fuel oil must be separate from other piping systems as far as practicable, and positive means must be provided to prevent interconnection in service.

(2) Fuel oil and cargo oil systems may be combined if the cargo oil systems contain only Grade E oils.

(3) Oil pumps must have no discharge connections to fire mains, boiler feed systems, or condensers.

(b) * * *

(1) Each drain from a heating coil as well as each drain from an oil heater must run to an inspection tank or other suitable oil detector.

* * * * *

(d) * * *

(1) * * *

(i) In the special case of a deep tank in any shaft tunnel, piping tunnel, or similar space, one or more valves must be fitted on the tank. In the event of fire, the flow of oil from the tank may be stopped by means of an additional valve on the piping outside the tunnel or similar space. Any such additional valve installed inside a machinery space must be capable of being operated from outside this space.

* * * * *

(2) If valves are installed on the inside of the tank, they may be made of cast iron and arranged for remote control only. Additional valves for local control must be located in the space where the system exits from the tank or adjacent tanks. Valves for local control outside the tanks must meet paragraph (d)(1) of this section.

(3) * * *

(i) Valve actuators must be capable of closing the valves under all conditions, except during physical interruption of the power system (for example, from cable breakage or tube rupture). Fluid power actuated valves, other than those opened against spring pressure, must be provided with an energy storage system which is protected, as far as practicable, from fire and mechanical damage. The energy storage system must be used for no other purpose and must have sufficient capacity to cycle all connected valves from the initial valve position to the opposite position and return. The cross connection of this system to an alternate power supply will be given special consideration by the Marine Safety Center.

(ii) The valve must have a local power actuator to both open and close the valve, unless local manual opening operation will not prevent remote closing of the valve.

* * * * *

(iv) The valve must be provided with a means of emergency manual operation to both open and close the valve regardless of the status of the power operating system. Such manual operation may interfere with the power operation, and if so, must be protected by means of covers, locking devices, or other suitable means. Instructions and warnings regarding the emergency system must be conspicuously posted at the valve.

* * * * *

(m) * * *

(1) Comply with § 56.50–80; and

(2) In a machinery space, meet the applicable requirements of §§ 56.50–60, 56.50–85, 56.50–90, and 58.01–55(f) of this subchapter. No arrangement need comply with § 56.50–90 (c)(1) and (c)(3) if the sounding pipe is fitted with an effective means of closure, such as a threaded cap or plug or other means acceptable to the Officer in Charge, Marine Inspection.

(n) Each arrangement for the storage, distribution, and use of any oil employed in a fluid power, control, or heating system must—

* * * * *

(2) Where means of ignition are present, meet the applicable requirements of §§ 56.50–85(a)(11), 56.50–90 (c) and (d), and 58.01–55(f) of this subchapter. Each pipe and its valves and fittings must be of steel or other approved material, except that the use of flexible piping or hose is permitted in accordance with §§ 56.35–10, 56.35–15, and 56.60–25(c).

■ 175. Revise § 56.50–65 to read as follows:

§ 56.50–65 Burner fuel-oil service systems.

(a) All discharge piping from the fuel oil service pumps to burners must be seamless steel with a thickness of at least Schedule 80. Short lengths of steel, or annealed copper nickel, nickel copper, or copper pipe and tubing may be used between the fuel oil burner front header manifold and the atomizer head to provide flexibility. All material used must meet the requirements of subpart 56.60. The use of non-metallic materials is prohibited. Flexible metallic tubing may be used when approved by the Marine Safety Center. Tubing fittings must be of the flared type except that flareless fittings of the nonbite type may be used when the tubing is steel, nickel copper or copper nickel.

(b)(1) All vessels having oil fired boilers must have at least two fuel service pumps, each of sufficient capacity to supply all the boilers at full power, and arranged so that one may be overhauled while the other is in service. If installed, fuel oil heaters must be so arranged that any heater may be overhauled while the other is in service. Suction and discharge strainers must be capable of being cleaned without interrupting the oil supply.

(2) All auxiliary boilers, except those furnishing steam for vital equipment and fire extinguishing purposes, may be equipped with a single fuel oil service

pump. Such pumps need not be fitted with discharge strainers.

(3) Strainers must be located so as to preclude the possibility of spraying oil on the burner or boiler casing, or be provided with spray shields. Coamings, drip pans, etc., must be fitted under fuel oil service pumps, heaters, etc., where necessary to prevent oil drainage to the bilge.

(4) Boilers burning fuel oils of low viscosity need not be equipped with fuel oil heaters.

(c) Piping between service pumps and burners must be located so as to be readily observable, and all bolted flange joints must be provided with a spray shield to deflect spray in case of a leak. Fuel pump or heater relief valves must discharge back to the settling tank or the suction side of the pump. The return line from the burners must be so arranged that the suction piping cannot be subjected to discharge pressure.

(d) If threaded-bonnet valves are employed, they must be of the union-bonnet type capable of being packed under pressure.

(e) Unions must not be used for pipe diameters of 1 inch and above.

(f) Boiler header valves of the quick closing type must be installed in the fuel supply lines as close to the boiler front header as practicable. The location is to be accessible to the operator or remotely controlled.

(g) Bushings and street ells are not permitted in fuel oil discharge piping.

(h) Each fuel-oil service pump must be equipped with controls as required by § 58.01–25 of this subchapter.

■ 176. Revise § 56.50–70 to read as follows:

§ 56.50–70 Gasoline fuel systems.

(a) *Material.* (1) Fuel supply piping to the engines must be of seamless drawn annealed copper pipe or tubing, nickel copper, or copper nickel pipe or tubing meeting the requirements of subpart 56.60.

(2) Thicknesses of tubing walls must not be less than the larger of that shown in table § 56.50–70(a) or that required by § 56.07–10(e) and 104.1.2 of ASME B31.1 (incorporated by reference; see § 56.01–2).

(3) Tubing fittings must be of nonferrous drawn or forged metal and of the flared type except that the flareless fittings of the nonbite type may be used when the tubing system is of nickel copper or copper nickel. Tubing must be cut square and flared by suitable tools. Tube ends must be annealed before flaring. Pipe fittings must be of nonferrous material. Pipe thread joints must be made tight with a suitable compound.

(4) Valves for fuel lines must be of nonferrous material of the union bonnet type with ground seats except that cocks may be used if they are the solid bottom type with tapered plugs and union bonnets.

TABLE § 56.50–70(a)—TUBING WALL THICKNESS

Outside diameter of tubing in inches	Thickness	
	B.W.G.	Inch
1/8, 3/16, 1/4	#21	0.032
5/16, 3/8	#20	.035
7/16, 1/2	#19	.042

(b) *Installation.* (1) All fuel pipes, pipe connections, and accessories must be readily accessible, protected against mechanical injury, and effectively secured against excessive movement and vibration by the use of soft nonferrous metal liners or straps. Where passing through steel decks or bulkheads, fuel lines must be protected by close fitting ferrules or stuffing boxes. Refer to § 56.30–25 for tubing joint installations.

(2) A short length of suitable metallic or nonmetallic flexible tubing or hose, or a loop of annealed copper tubing, must be installed in the fuel-supply line at or near the engine to prevent damage by vibration.

(i) If nonmetallic flexible hose is used, it must meet the requirements of § 56.60–25(b) for fuel service.

(ii) Flexible hose connections should maintain metallic contact (continuity) between the sections of the fuel-supply lines; however, if they do not, the fuel tank must be grounded.

(c) *Shutoff valves.* Shutoff valves of a suitable type must be installed in the fuel supply lines, one as close to the tank as practicable. Where fuel tanks are installed below the weather deck, arrangements must be provided for operating all shutoff valves at the tanks from outside the compartments in which they are located. The operating gear for the shutoff valves at the tanks must be accessible and suitably marked.

(d) *Strainers.* A suitable twin strainer must be fitted in the fuel supply line in the engine compartment. A drip pan must be fitted under the strainer.

(e) *Outlets and drains.* Outlets in fuel lines for drawing gasoline for any purpose are prohibited. However, openings fitted with threaded plug or cap can be used for cleaning purposes.

(f) *Fuel suction connections.* All fuel suction and return lines must enter the top of the fuel tanks and connections must be fitted into spuds. Such lines must extend nearly to the bottom of the tank.

(g) *Filling and sounding pipes.* Filling and sounding pipes must be so arranged that vapors or overflow when filling cannot escape to the inside of the vessel and will discharge overboard. Such pipes must terminate on the weather deck clear of any coamings and must be fitted with suitable shutoff valves. A corrosion-resistant flame screen of must be fitted in the throat of the filling pipe. Sounding pipes must be kept closed at all times except during sounding.

(h) *Vent pipes.* Each tank must be fitted with a vent, the cross-sectional area of which must not be less than that of the filling pipe. The vent pipes must terminate at least 2 feet above the weather deck and not less than 3 feet from any opening into living quarters or other below-deck space. The ends of vent pipes must terminate with U-bends and be fitted with flame screens or flame arresters. The flame screens must consist of a single screen of corrosion resistant wire of at least 30 by 30 mesh.

(i) *Gasoline tanks.* For requirements pertaining to independent gasoline fuel tanks see subpart 58.50 of this subchapter.

(j) *Fuel pump shutdown.* Each fuel pump must comply with § 58.01–25 of this subchapter.

■ 177. Amend § 56.50–75 as follows:

■ a. Revise paragraph (a)(1);

■ b. In paragraphs (a)(2) and (3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ c. Revise paragraph (b)(1);

■ d. In paragraphs (b)(2)through (4), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ e. Revise paragraph (b)(6); and

■ f. In paragraph (b)(7), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 56.50–75 Diesel fuel systems.

(a) * * *

(1) The diesel fuel system must comply with §§ 56.50–60, 56.50–85, and 56.50–90. The fuel supply piping to engines must be of seamless steel, annealed seamless copper or brass pipe or tubing, or of nickel copper or copper nickel alloy meeting the requirements of subpart 56.60 for materials and § 56.50–70(a)(2) for thickness. Fuel oil service pumps must comply with § 58.01–25 of this subchapter.

* * * * *

(b) * * *

(1) *Materials.* Fuel supply piping must be of copper, nickel copper, copper nickel or other materials having a minimum wall thickness of 0.035 inch.

* * * * *

(6) *Filling pipe.* Tank filling pipes on vessels less than 100 gross tons and tank barges must terminate on an open deck and must be fitted with suitable shutoff valves, deck plugs, or caps.

* * * * *

■ 178. Amend § 56.50–80 as follows:
■ a. Revise paragraphs (a) and (b);
■ b. In paragraph (c), remove the words ''on steam driven machinery shall'' and add, in its place, the word ''must'';
■ c. Revise paragraph (d);
■ d. In paragraphs (e), (f) and (g), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ e. Revise paragraph (h).

The revisions read as follows:

§ 56.50–80 Lubricating-oil systems.

(a) The lubricating oil system must be designed to function satisfactorily when the vessel has a permanent 15° list and a permanent 5° trim. See § 58.01–40 of this subchapter for operational requirements for propulsion and vital machinery at vessel angles of inclination.

(b) When pressure or gravity-forced lubrication is employed for the main propelling machinery, an independent auxiliary lubricating pump must be provided.

* * * * *

(d) For internal combustion engine installations, the requirements of paragraphs (b) and (c) of this section do not apply to vessels in river and harbor service, nor to any vessel below 300 gross tons. For internal combustion engines, two separate means are to be provided for circulating coolant. One of those means must be independently driven and may consist of a connection from a pump of adequate size normally used for other purposes utilizing the required coolant. Oil filters must be provided on all internal combustion engine installations. On main propulsion engines fitted with full-flow type filters, the arrangement must be such that the filters may be cleaned without interrupting the oil supply except that such an arrangement is not required on vessels having more than one main propulsion engine.

* * * * *

(h) Sight-flow glasses may be used in lubricating-oil systems provided they can withstand exposure to a flame at a temperature of 927 °C (1700 °F) for one hour, without appreciable leakage.

* * * * *

■ 179. Amend § 56.50–85 as follows:
■ a. In paragraphs (a)(1) and (2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ b. Revise paragraphs (a)(3) and (6);
■ c. In the introductory text to paragraph (a)(7), remove the word ''shall'' and add, in its place, the word ''must'';
■ d. Revise paragraph (a)(7)(i);
■ e. Remove paragraph (a)(7)(ii) and redesignate paragraph (a)(7)(iii) as paragraph (a)(7)(ii);
■ f. In paragraph (a)(9), remove the word ''shall'' and add, in its place, the word ''must'';
■ g. Revise paragraphs (a)(10) and (a)(11)(ii);
■ h. Remove paragraph (a)(12) and redesignate paragraph (a)(13) as paragraph (a)(12);
■ i. Revise newly redesignated paragraph (a)(12); and
■ j Revise paragraph (b).

The revisions read as follows:

§ 56.50–85 Tank-vent piping.

(a) * * *

(3) Vent pipes for fuel oil tanks must, wherever possible, have a slope of no less than 30°.

* * * * *

(6) Vents extending above the freeboard deck or superstructure deck from fuel oil and other tanks must be at least Schedule 40 in wall thickness. Except for barges in inland service and for Great Lakes vessels, the height from the deck to any point where water may gain access through the vent to below deck must be at least 30 inches (760 mm) on the freeboard deck and 17½ inches (450 mm) on the superstructure deck. On Great Lakes vessels, the height from the deck to any point where water may gain access through the vent to below deck must be at least 30 inches (760 mm) on the freeboard deck, 24 inches (610 mm) on the raised quarterdeck, and 12 inches (305 mm) on other superstructure decks. Where the height of vents may interfere with the working of the vessel, a lower height may be approved by the Marine Safety Center provided the vent cap is properly protected from mechanical damage. For barges in inland service, the vents must extend at least six inches above the deck.

(7) * * *

(i) A ball check valve where the ball float, normally in the open position, will float up and close under the action of a submerging wave. The valve must be designed so that the effective clear discharge area through the valve with the float in the open position is not less than the inlet area of the vent pipe to which the valve is connected; or

* * * * *

(10) The diameter of each vent pipe must not be less than 1½ inches nominal pipe size for freshwater tanks, 2 inches nominal pipe size for water ballast tanks, and 2½ inches nominal pipe size for fuel oil tanks.

(11) * * *

(ii) Provision must be made to guard against liquids rising in the venting system to a height that would exceed the design head of a cargo tank or fuel-oil tank. It may be made by high-level alarms or overflow-control systems or other, equivalent means.

* * * * *

(12) Vents from freshwater or water ballast tanks must not be connected to a common header with vents from oil or oily ballast tanks.

(b) Unless permitted by the Marine Safety Center, tank vents must remain within the watertight subdivision boundaries in which the tanks they vent are located. All tank vents which penetrate watertight subdivision bulkheads must terminate above the weather deck.

■ 180. Amend § 56.50–90 as follows:
■ a. Revise paragraphs (a) and (b);
■ b. In the introductory text to paragraph (c), remove the third sentence;
■ c. In paragraph (c)(1), remove the text ''In addition to the sounding pipe, the'' and add, in its place, the word ''The'';
■ d. In paragraph (c)(2), remove the words ''The pipe terminates in a place remote from ignition hazards unless precautions'' and add, in their place, the word ''Precautions'';
■ e. Revise paragraph (c)(3);
■ f. In the introductory text to paragraph (d), remove the text ''On each vessel constructed on or after June 9, 1995, other'' and add, in its place, the word ''Other''; and
■ g. Revise paragraph (e).

The revisions read as follows:

§ 56.50–90 Sounding devices.

(a) Each tank must be provided with a suitable means of determining liquid level. Except for a main cargo tank on a tank vessel, each integral hull tank and compartment must be fitted with a sounding pipe or other level indicating device acceptable to the Marine Safety Center.

(b) Where sounding pipes terminate below the freeboard deck on cargo vessels, they shall be fitted with gate valves. On passenger vessels, where sounding pipes terminate below the bulkhead deck, they must be fitted with gate valves.

(c) * * *

(3) The end of the pipe is fitted with a self-closing blanking device.

* * * * *

(e) The upper ends of sounding pipes must be closed by a screw cap or plug.

* * * * *

■ 181. Amend § 56.50–95 as follows:
■ a. Revise paragraph (a)(1);
■ b. In paragraphs (a)(2) and (3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ c. Revise paragraph (b)(2);
■ d. In paragraph (b)(3), remove the word ''shall'' and add, in its place, the word ''must'';
■ e. Remove paragraph (b)(4);
■ f. Revise paragraph (d)(1);
■ g. In paragraphs (d)(2) and (e)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ h. Revise paragraphs (e)(2) and (f);
■ i. In paragraph (g), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ j. Revise paragraphs (h) and (i).

The revisions read as follows:

§ 56.50–95 Overboard discharges and shell connections.

(a)(1) All inlets and discharges led through the vessel's side must be fitted with efficient and accessible means, located as close to the hull penetrations as is practicable.

* * * * *

(b) * * *

(2) Discharges led through the shell originating either from spaces below the freeboard deck or from within enclosed superstructures and equivalent deckhouses on the freeboard deck as defined in § 42.13–15(i) of subchapter E (Load Lines) of this chapter, must be fitted with efficient and accessible means for preventing water from passing inboard. Normally each separate discharge must have one automatic nonreturn valve with a positive means of closing it from a position above the freeboard deck. Where, however, the vertical upward distance from the summer load line to the inboard end of the discharge pipe through which flooding can take place exceeds 0.01L, the discharge may have two automatic nonreturn valves without positive means of closing, provided that the inboard valve is always accessible for examination under service conditions. Where that vertical distance exceeds 0.02L a single automatic nonreturn valve without positive means of closing is acceptable. In an installation where the two automatic nonreturn valves are used, the inboard valve must be above the tropical load line. The means for operating the positive action valve must be readily accessible and provided with an indicator showing whether the valve is open or closed. A notice must be posted at the operating station to the effect that the valve must not be closed except as required in an emergency.

* * * * *

(d)(1) Sea inlets and discharges, such as used in closed systems required for the operation of main and auxiliary machinery, as in pump connections or scoop injection heat exchanger connections, need not meet the requirements of paragraphs (b)(1) and (2) of this section but instead must be fitted with a shutoff valve located as near the shell plating as practicable, and may be locally controlled if the valve is located in a manned machinery space. These controls must be readily accessible above the floor plates. Manned machinery spaces include the main machinery space and are either attended by the crew or are automated in accordance with part 62 of this subchapter to be comparable to an attended space.

* * * * *

(e) * * *

(2) Seachests and other hull fittings must be as short as possible and located so as to minimize the possibility of being blocked or obstructed.

* * * * *

(f) Valves required by this section and piping system components outboard of such required valves must be of a steel, bronze, or ductile cast iron specification listed in table 1 to § 56.60–1. Lead or other heat sensitive materials having a melting point of 1,700 °F. or less must not be used in such service where the deterioration of the piping system in the event of fire would give rise to danger of flooding. Brittle materials such as cast iron must not be used in such service. Where nonmetallic materials are used in a piping system, and shell closures are required by this section, a positive closure metallic valve is required (see also § 56.60–25).

* * * * *

(h) Where deck drains, soil lines, and sanitary drains discharge through the shell in way of cargo tanks on tank vessels, the valves required by this section must be located outside the cargo tanks. These valves must meet the material requirements of paragraph (f) of this section. The piping led through such tanks must be fitted with expansion bends where required, and must be of steel pipe having a wall thickness of not less than Schedule 60, except that the use of suitable corrosion-resistant material of lesser thickness will be given special consideration by the Commandant. All pipe joints within the tanks must be welded. Soil lines and sanitary drains which pass through cargo tanks must be provided with nonreturn valves with positive means of closing or other suitable means for preventing the entrance of gases into living quarters.

(i) Sea valves must not be held open or closed with locks.

§ 56.50–96 [Amended]

■ 182. Amend § 56.50–96 as follows:
■ a. In the introductory text to paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and
■ b. Reserve paragraph (b).

§ 56.50–97 [Amended]

■ 183. In § 56.50–97, reserve paragraph (b).
■ 184. Amend § 56.50–103 as follows:
■ a. Revise paragraph (b);
■ b. In paragraph (e), remove the word ''shall'' and add, in its place, the word ''must'';
■ c. Revise paragraph (g); and
■ d. In paragraphs (h), (i) and (k), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 56.50–103 Fixed oxygen-acetylene distribution piping.

* * * * *

(b) The distribution piping must include a means, located as close to the supply cylinders as possible, of regulating the discharge pressure from the supply cylinders.

* * * * *

(g) Pipe joints on the low-pressure side of the regulators must be welded.

* * * * *

■ 185. Amend § 56.50–105 as follows:
■ a. Revise the introductory text to paragraph (a);
■ b. Revise paragraph (a)(1);
■ c. In paragraph (a)(2), remove the word ''shall'' and add, in its place, the word ''must'';
■ d. In paragraph (a)(3):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ ii. Remove the text ''Table 56.85–10'' and add, in its place, the text ''table § 56.85–10(c)'';
■ e. In paragraph (a)(4), remove the word ''shall'' and add, in its place, the word ''must'';
■ f. In paragraph (a)(5), remove the text ''Commanding Officer, Marine Safety Center,'' and add, in its place, the words ''Marine Safety Center'';
■ g. Revise the introductory text to paragraph (b);
■ h. In paragraphs (b)(2), remove the word ''shall'' and add, in its place, the word ''must'';
■ i. In paragraph (b)(3):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ ii. Remove the text ''Table 56.85–10'' and add, in its place, the text ''table § 56.85–10(c)'';

■ j. In paragraph (b)(4), remove the word ''shall'' and add, in its place, the word ''must'';
■ k. Revise paragraph (b)(6);
■ l. Redesignate table 56.50–105 as table 2 to § 56.50–105 and revise newly redesignated table 2 to § 56.50–105; and
■ m. Designate the concluding note as note 1 to table 2 to § 56.50–105 and revise the newly designated note 1 to table 2 to § 56.50–105.

The revisions read as follows:

§ 56.50–105 Low-temperature piping.

(a) *Class I–L.* Piping systems designated to operate at temperatures below 0 °F. and pressures above 150 psig must be of Class I–L. Exceptions to this rule may be found in the individual requirements for specific commodities in subchapters D, I, and O of this chapter. The following requirements for Class I–L piping systems must be satisfied:

(1) *Materials.* All materials used in low temperature piping systems must be selected from among those specifications listed in table 2 to § 56.50–105 and must satisfy all of the requirements of the specifications, except that:

(i) The minimum service temperature as defined in *§ 54.25–10(a)(2) of this subchapter* must not be colder than that shown in table 2 to § *56.50–105;* and

(ii) The material must be tested for low temperature toughness per ASTM E23 (incorporated by reference, see § 56.01–2), Figure 4. The toughness testing requirements of subpart 54.05 of this subchapter must be satisfied for each particular product form. Charpy V-notch tests must be conducted at temperatures not warmer than 10 °F. below the minimum service temperature of the design, except that for service temperatures of − 320 °F. and below, the impact test may be conducted at the service temperature. The minimum average energy must not be less than that shown in table 2 to § 56.50–105. In the case of steels conforming to the specifications of table § 54.25–20(a) of this subchapter the minimum lateral expansion must not be less than that required in § 54.25–20 of this subchapter. The minimum energy permitted for a single specimen and the minimum subsize energies must be those obtained by multiplying the average energy shown in table 2 to § 56.50–105 by the applicable fraction shown in table 1 to § 56.50–105(a)(1)(ii).

TABLE 1 TO § 56.50–105(a)(1)(II)—CHARPY V-NOTCH ENERGY MULTIPLYING FACTORS

Charpy V-notch specimen size [1]	Factor for minimum energy, average of 3 specimens [1]	Factor for minimum energy single specimen [1]
10×10 mm	1	2/3
10×7.5 mm	5/6	5/9
10×5.0 mm	2/3	4/9
10×2.5 mm	1/2	1/3

[1] Straight line interpolation for intermediate values is permitted.

(iii) Steels differing in chemical composition, mechanical properties or heat treatments from those specified may be specially approved by the Marine Safety Center. Similarly, aluminum alloys and other materials not covered in table 2 to § 56.50–105 may be specifically approved by the Marine Safety Center.

* * * * *

(b) *Class II–L.* Piping systems designed to operate at temperatures below 0 °F. and pressures not higher than 150 psig must be of Class II–L. Exceptions to this rule may be found in the individual requirements for specific commodities in subchapter D (Tank Vessels) and subchapter I (Cargo and Miscellaneous Vessels), both of this chapter. The following requirements for Class II–L piping systems must be satisfied:

* * * * *

(6) All other requirements contained in this part for Class II piping are applicable to Class II–L systems, except that § 56.70–15(b)(3)(iv) does not apply.

TABLE 2 TO § 56.50–105—ACCEPTABLE MATERIALS AND TOUGHNESS TEST CRITERIA [2]

Product form	ASTM specification [3]	Grade [4]	Minimum service temperature	Minimum avg Charpy V notch energy
Pipe		1	−30 °F	20 ft. lb.
		3	−150 °F	25 ft. lb.
Tube (carbon and low alloy steels)	A333/A333M and A334/A334M.	4 (A333 only)	−100 °F	25 ft. lb.
		6	−30 °F	20 ft. lb.
		7	−100 °F	25 ft. lb.
		8	−320 °F	Refer to § 54.25–20 of this subchapter.
Pipe (Austenitic stainless steel)	A312/A312M	All grades	No limit	Austenitic stainless steel piping need be impact tested only when toughness tests are specified in subpart 54.25 of this subchapter for plating of the same alloy designation. When such toughness tests are required, the minimum average energy is 25 ft. lb.
Wrought welding fittings (carbon and low alloy steels).	A420/A420M	WPL1	−30 °F	20 ft. lb.
		WPL3	−150 °F	25 ft. lb.
		WPL4	−100 °F	25 ft. lb.
Forged or rolled flanges, forged fittings, valves and pressure parts (carbon and low alloy steels).	A350/A350M [1]	LF1	−30 °F	20 ft. lb.
		LF2	−30 °F	20 ft. lb.
		LF3	−150 °F	25 ft. lb.
		LF4	−100 °F	25 ft. lb.

TABLE 2 TO § 56.50–105—ACCEPTABLE MATERIALS AND TOUGHNESS TEST CRITERIA [2]—Continued

Product form	ASTM specification[3]	Grade[4]	Minimum service temperature	Minimum avg Charpy V notch energy
Forged or rolled flanges, forged fittings, valves and pressure parts (high alloy steels).	F1155	Austenitic grades only (304, 304H, 304L, 310, 316, 316H, 316L, 321, 321H, 347, 347H, 348, 348H).	No limit	These products need be impact tested only when toughness tests are specified in subpart 54.25 of this subchapter for plating of the same alloy designation. When such toughness tests are required, the minimum average energy is 25 ft. lb.
Forged flanges, fittings, and valves (9% nickel).	A522/A522M	9% Ni	−320 °F	Refer to § 54.25–20 of this subchapter.
Castings for valves and pressure parts (carbon and low alloy steels).	A352/A352M [1]	LCB	−30 °F	20 ft. lb.
		LC1	−50 °F	20 ft. lb.
		LC2	−100 °F	25 ft. lb.
		LC3	−150 °F	25 ft. lb.
Castings for valves and pressure parts (high alloy steel).	F1155	Austenitic grades CF3, CF3A, CF8, CF8A, CF3M, CF8M, CF8C, CK20 only.	No limit, except −325 °F for grades CF8C and CK20.	No toughness testing required except for service temperatures colder than −425 °F for grades CF3, CF3A, CF8, CF8A, CF3M, and CF8M. 25 ft. lb. average must be attained in these tests.
Bolting	F1155	L7, L9, L10, L43	−150 °F	20 ft. lb.
		B8D, B8T, B8F, B8M.	−325 °F	No test required.
		2B8, B8C	No limit	No test required, except for service temperatures colder than −425 °F. In such case the minimum average energy is 25 ft. lb.
		4	−150 °F	20 ft. lb.
Nuts, bolting	F1155	8T, 8F	−325 °F	No test required.
		8, 8C	No limit	Same requirement as comparable grades (B8, B8C) of bolting listed above.

[1] Quench and temper heat treatment may be permitted when specifically authorized by the Commandant. In those cases the minimum average Charpy V-notch energy must be specially designated by the Commandant.

[2] Other material specifications for product forms acceptable under part 54 for use at low temperatures may also be used for piping systems provided the applicable toughness requirements of this table 2 to § 56.50–105 are also met.

[3] Any repair method must be acceptable to the Commandant (CG–ENG), and welding repairs as well as fabrication welding must be in accordance with *part 57 of this chapter.*

[4] The acceptability of several alloys for low temperature service is not intended to suggest acceptable resistance to marine corrosion. The selection of alloys for any particular shipboard location must take corrosion resistance into account and be approved by the Marine Safety Center.

Note 1 to table 2 to § 56.50–105: The ASTM standards listed in table 2 to § 56.50–105 are incorporated by reference, see § 56.01–2.

§ 56.50–110 [Amended]

■ 186. In § 56.50–110(b), remove the words ''which is''.

■ 187. Revise § 56.60–1 to read as follows:

§ 56.60–1 Acceptable materials and specifications (replaces 123 and Table 126.1 in ASME B31.1).

(a)(1) The material requirements in this subpart must be followed in lieu of those in 123 in ASME B31.1 (incorporated by reference; see § 56.01–2).

(2) Materials used in piping systems must be selected from the specifications that appear in table 1 to § 56.60–1 of this section or table § 56.60–2, ASTM F1155 (incorporated by reference; see § 56.01–2), or they may be selected from the material specifications of Sections I or VIII of the ASME BPVC (both incorporated by reference; see § 56.01–2) if not prohibited by a regulation of this subchapter. Table 1 to § 56.60–1(a) contains only pipe, tubing, and fitting specifications. Determination of acceptability of plate, forgings, bolting, nuts, and castings may be made by reference to the ASME BPVC as previously described. Additionally, accepted materials for use as piping system components appear in table § 56.60–2. Materials conforming to specifications not described in this subparagraph must receive the specific approval of the Marine Safety Center. Materials listed in Table 126.1 of ASME B31.1 are not accepted unless specifically permitted by this paragraph.

(b) Components made in accordance with the commercial standards listed in Table 56.60–1(b) of this section and made of materials complying with paragraph (a) this section may be used in piping systems within the limitations of the standards and within any further limitations specified in this subchapter.

Note 1 to § 56.60–1: Table 1 to § 56.60–1 replaces Table 126.1 in ASME B31.1 and sets forth specifications of pipes, tubing, and fittings intended for use in piping-systems. The first column lists acceptable standards from ASTM (all incorporated by reference; see § 56.01–2); the second lists those from ASME (all incorporated by reference; see § 56.01–2). The Coast Guard will consider use of alternative pipes, tubing, and fittings when it receives certification of their mechanical properties. Without this certification it will restrict use of such alternatives to piping-systems inside heat exchangers that ensure containment of the material inside pressure shells.

TABLE 1 TO § 56.60–1—ADOPTED SPECIFICATIONS AND STANDARDS

ASTM standards	ASME standards	Notes
Pipe, seamless:		
F1155 Carbon steel	B31.1.	
F1155 Ferritic alloy steel	B31.1.	
A376/A376M Austenitic alloys	B31.1	(1).
Pipe, seamless and welded:		
A53/A53M	B31.1	(2 3 4).
A312/A312M Austenitic steel (welded with no filler metal).	B31.1, B31.3	(1 4).
A333/A333M Low temperature steel pipe	Sec. VIII of the BPVC, B31.3	(5).
Pipe, welded:		
F1155 Electric-Fusion welded Arc-welded steel	See footnote 7	(7).
A135/A135M ERW pipe	B31.1	(3).
F1155 Electric-fusion welded arc-welded steel pipe	B31.1	(8).
A358/A358M Electric fusion welded pipe, high temperature, austenitic.	B31.1	(1 4 9).
Pipe, forged and bored:		
A358/A358M Ferritic alloy	B31.1.	
Tube, seamless:		
F1155 Seamless Cold-drawn Low Carbon steel heat exchanger and condenser tubes.	UCS23, Sec. VIII of the BPVC	(10).
F1155 Seamless Carbon steel boiler tubes	PG23.1, Sec. I of the BPVC	(10).
A210/A210M Medium carbon boiler tubes	PG23.1, Sec. I of the BPVC.	
F1155 Seamless Ferritic and Austenitic Alloy-Steel Boiler tubes.	PG23.1, Sec. I of the BPVC	(1).
Tube, seamless and welded:		
A268/A268M Seamless and ERW ferritic stainless tubing.	PG23.1, Sec. I of the BPVC	(4).
A334/A334M Seamless and welded carbon and alloy-steel tubes for low-temperature service.	UCS23, Sec. VIII of the BPVC	(4 5).
Tube, welded:		
F1155 ERW Carbon steel and carbon manganese boiler tubes.	PG23.1, Sec. I of the BPVC	(10 Grade A) (4).
F1155 ERW Carbon steel heat exchanger and condenser tubes.	UCS27, Sec. VIII of the BPVC.	
F1155 Welded austenitic boiler and heat exchanger tubes.	PG23.1, Sec. I of the BPVC	(1 4).
Wrought fittings (factory made):		
F1155 Carbon steel and alloy steel for moderate and high temperature service.	Conforms to applicable American National Standards (B16.11).	(11).
A403/A403M Austenitic alloys	.....do	(11).
A420/A420M Low temperature carbon and steel alloy	.....do	(11).
Castings,[12] iron:		
A47/A47M Malleable iron	Conform to applicable American National Standards or refer to UCI–23 or UCD–23, Sec. VIII of the BPVC.	(13).
A126 Gray iron	.....do	(13).
A197/A197M Malleable iron	.....do	(13).
F1155 Ferritic Ductile iron	UCD–23, Sec. VIII of the BPVC	(13).
F1155 Ductile iron castings	See footnote 18	(18).
Nonferrous Materials[14]		
Pipe, seamless:		
B42 Copper	UNF23, Sec. VIII of the BPVC	(15).
B43 Red brass	.....do.	
B241/B241M Aluminum alloy	.....do.	
Pipe and tube, seamless:		
B161 Nickel	.....do.	
B165 Nickel-copper	.....do.	
B167 Ni-Cr-Fe	.....do.	
B315 Copper-silicon	.....do.	
Tube, seamless:		
B68/B68M Copper	See footnote 16	(15 16 17).
B75/B75M Copper	UNF23, Sec. VIII of the BPVC	(15).
F1155 Seamless Copper water tube	See footnote 16	(15 16).
B111/B111M Copper and copper alloy	UNF23, Sec. VIII of the BPVC.	
B210/B210M Aluminum alloy, drawn	.....do.	
B234 Aluminum alloy, drawn	.....do.	
B280 Copper tube for refrigeration service	See footnote 16	(15 16).
Welding fittings:		
B361 Wrought aluminum welding fittings	Must meet ASME Standards.	

Note 1 to table 1 to § 56.60–1: When using 104.1.2 in ASME B31.1 to compute wall thickness, the stress shown here must be applied as though taken from the stress tables. An additional factor of 0.8 may be required by § 56.07–10(c) and (e).

[1] For austenitic materials where two sets of stresses appear, use the lower values.
[2] Type F (Furnace welded, using open hearth, basic oxygen, or electric furnace only) limited to Class II applications with a maximum service temperature of 450 °F. Type E (ERW grade) limited to maximum service temperature of 650 °F, or less.
[3] Electric resistance welded pipe or tubing of this specification may be used to a maximum design pressure of 350 psig.
[4] Refer to limitations on use of welded grades given in § 56.60–2(b).
[5] Use generally considered for Classes I–L and II–L applications. For Class I–L service only, the seamless grade is permitted. For other service refer to footnote 4 and to § 56.50–105.
[6] Furnace lap or furnace butt grades only. Limited to Class II applications only where the maximum service temperature is 450 °F, or less.
[7] Limited to Class II applications only where maximum service temperature is 300 °F or less for straight seam, and 200 °F or less for spiral seam.
[8] Limited to Class II applications where the maximum service temperature is 300 °F or less for straight seam and 200 °F or less for spiral seam.
[9] For Class I applications only the Class I Grade of the specification may be used.
[10] When used in piping systems, a certificate must be furnished by the manufacturer certifying the mechanical properties at room temperature. Without this certification, use is limited to applications within heat exchangers.
[11] Hydrostatic testing of these fittings is not required but all fittings must be capable of withstanding a hydrostatic test of 11/2 times the design pressure.
[12] Other acceptable iron castings are in UCI–23 and UCD–23 of Section VIII of the ASME BPVC. (See also §§ 56.60–10 and 56.60–15.) Acceptable castings of materials other than cast iron may be found in Sections I or VIII of the ASME BPVC.
[13] Acceptable when complying with ANSI standards. Ductile iron is acceptable for temperatures not exceeding 650 °F. For pressure temperature limitations refer to UCD–3 of Section VIII of the ASME BPVC. Other grades of cast iron are acceptable for temperatures not exceeding 450 °F. For pressure temperature limitations refer to UCI–3 of Section VIII of the ASME BPVC.
[14] For limitations in use refer to §§ 56.10–5(c) and 56.60–20.
[15] Copper pipe must not be used for hot oil systems except for short flexible connections at burners. Copper pipe must be annealed before installation in Class I piping systems. See also §§ 56.10–5(c) and 56.60–20.
[16] The stress values must be taken from UNF23 of Section VIII of the ASME BPVC for B75 annealed and light drawn temper as appropriate.
[17] B68 is acceptable if provided with a mill hydrostatic or eddy current test.
[18] Limited to pipe fittings and valves. See 46 CFR 56.60–15(d) for additional information.

TABLE 2 TO § 56.60–1—ADOPTED STANDARDS APPLICABLE TO PIPING SYSTEMS

[Replaces Table 126.1]

American Society of Mechanical Engineers (ASME) International [1]	
ASME B1.1	Unified Inch Screw Threads (UN and UNR Thread Form).
ASME B1.20.1	Pipe Threads, General Purpose (Inch).
ASME B1.20.3	Dryseal Pipe Threads (Inch).
ASME B16.1	Gray Iron Pipe Flanges and Flanged Fittings, Classes 25, 125, 250.
ASME B16.3	Malleable Iron Threaded Fittings, Classes 150 and 300.
ASME B16.4	Gray Iron Threaded Fittings, Classes 125 and 250.
ASME B16.5	Pipe Flanges and Flanged Fittings NPS ½ Through NPS 24 Metric/Inch Standard.[3]
ASME B16.11	Forged Fittings, Socket-Welding and Threaded.
ASME B16.14	Ferrous Pipe Plugs, Bushings, and Locknuts with Pipe Threads.
ASME B16.15	Cast Copper Alloy Threaded Fittings, Classes 125 and 250.
ASME B16.20	Metallic Gaskets for Pipe Flanges, Ring-Joint, Spiral-Wound, and Jacketed.
ASME B16.21	Nonmetallic Flat Gaskets for Pipe Flanges.
ASME B16.23	Cast Copper Alloy Solder Joint Drainage Fittings: DWV.[4]
ASME B16.25	Buttwelding Ends.
ASME B16.29	Wrought Copper and Wrought Copper Alloy Solder Joint Drainage Fittings-DWV.[4]
ASME B16.34	Valves—Flanged, Threaded, and Welding End.[3]
ASME B18.2.1	Square, Hex, Heavy Hex, and Askew Head Bolts and Hex, Heavy Hex, Hex Flange, Lobed Head, and Lag Screws (Inch Series).
ASME B18.2.2	Nuts for General Applications: Machine Screw Nuts, Hex, Square, Hex Flange, and Coupling Nuts (Inch Series).
ASME B31.1	Power Piping, ASME Code for Pressure Piping, B31.
ASME B31.3	Process Piping, ASME Code for Pressure Piping, B31.
ASME B36.10M	Welded and Seamless Wrought Steel Pipe.
ASME B36.19M	Stainless Steel Pipe.
ASTM International (ASTM) [1]	
ASTM F1006	Standard Specification for Entrainment Separators for Use in Marine Piping Applications.[4]
ASTM F1007	Standard Specification for Pipeline Expansion Joints of the Packed Slip Type for Marine Application.
ASTM F1020	Standard Specification for Line-Blind Valves for Marine Applications.
ASTM F1120	Standard Specification for Circular Metallic Bellows Type Expansion Joints for Piping Applications.[4]
ASTM F1123	Standard Specification for Non-Metallic Expansion Joints.
ASTM F1139	Standard Specification for Steam Traps and Drains.
ASTM F1155	Standard Practice for Selection and Application of Piping System Materials
ASTM F1172	Standard Specification for Fuel Oil Meters of the Volumetric Positive Displacement Type.
ASTM F1173	Standard Specification for Thermosetting Resin Fiberglass Pipe and Fittings to be Used for Marine Applications.
ASTM F1199	Standard Specification for Cast (All Temperature and Pressures) and Welded Pipe Line Strainers (150 psig and 150 Degrees F Maximum).
ASTM F1200	Standard Specification for Fabricated (Welded) Pipe Line Strainers (Above 150 psig and 150 Degrees F).

TABLE 2 TO § 56.60–1—ADOPTED STANDARDS APPLICABLE TO PIPING SYSTEMS—Continued

[Replaces Table 126.1]

ASTM F1201	Standard Specification for Fluid Conditioner Fittings in Piping Applications above 0 Degrees F.
Expansion Joint Manufacturers Association Inc.[1]	
	Standards of the Expansion Joint Manufacturers Association, 2015.
Fluid Controls Institute Inc. (incorporated by reference; see 46 CFR 56.01–2)	
FCI 69–1	Pressure Rating Standard for Steam Traps.
Manufacturers' Standardization Society of the Valve and Fittings Industry, Inc.[1 4]	
MSS SP–6	Standard Finishes for Contact Faces of Pipe Flanges and Connecting-End Flanges of Valves and Fittings.
MSS SP–9	Spot Facing for Bronze, Iron and Steel Flanges.
MSS SP–25	Standard Marking System for Valves, Fittings, Flanges and Unions.
MSS SP–45	Bypass and Drain Connections.
MSS SP–51	Class 150LW Corrosion Resistant Flanges and Cast Flanged Fittings.[4]
MSS SP–53	Quality Standard for Steel Castings and Forgings for Valves, Flanges and Fittings and Other Piping Components—Magnetic Particle Examination Method.
MSS SP–55	Quality Standard for Steel Castings for Valves, Flanges and Fittings and Other Piping Components—Visual Method for Evaluation of Surface Irregularities.
MSS SP–58	Pipe Hangers and Supports—Materials, Design Manufacture, Selection, Application, and Installation.
MSS SP–61	Pressure Testing of Valves.

[1] All standards incorporated by reference; see § 56.01–2.
[2] In addition, for bronze valves, adequacy of body shell thickness must be satisfactory to the Marine Safety Center. Refer to § 56.60–10 of this part for cast-iron valves.
[3] Mill or manufacturer's certification is not required, except where a needed portion of the required marking is deleted because of size or is absent because of age of existing stocks.
[4] Because this standard offers the option of several materials, some of which are not generally acceptable to the Coast Guard, compliance with the standard does not necessarily indicate compliance with these rules. The marking on the component or the manufacturer or mill certificate must indicate the specification or grade of the materials as necessary to fully identify the materials. The materials must comply with the requirements in this subchapter governing the particular application.

■ 188. Amend § 56.60–2 as follows:
■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';
■ b. In paragraph (b), remove the text ''Table 56.60–1(a)'' and add, in its place, the text ''table 1 to § 56.60–1'';
■ c. In paragraph (c)(1)(ii):
■ i. remove the text ''A 376'' and add, in its place, the text ''A376'';
■ ii. remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and
■ iii. remove the word ''shall'' and add, in its place, the word ''must'';
■ d. In paragraph (c)(2):
■ i. Remove the text ''A–376'' and add, in its place, the text ''A376''; and
■ ii. Remove the word ''shall'' and add, in its place, the word ''must''; and
■ e. Redesignate table 56.60–2(a) as table § 56.60–2; and
■ f. Revise newly redesignated table § 56.60–2.

The revision reads as follows:

§ 56.60–2 Limitations on materials.

* * * * *

TABLE § 56.60–2—ADOPTED SPECIFICATIONS NOT LISTED IN THE ASME BPVC

ASTM specifications	Source of allowable stress	Notes
Ferrous Materials[1]		
Bar stock:		
A276 (Grades 304–A, 304L–A, 310–A, 316–A, 316L–A, 321–A, 347–A, and 348–A).	See footnote 4	(4).
A575 and A576 (Grades 1010–1030)	See footnote 2	(2 3).
Nonferrous Materials		
Bar stock:		
B16 (soft and half hard tempers)	See footnote 5	(5 6).
B21 (alloys A, B, and C)	See footnote 7	(7).
B124:		
Alloy 377	See footnotes 5 and 8	(5 8).
Alloy 464	See footnote 7	(7 9).
Alloy 655	See footnote 10	(10).
Alloy 642	See footnote 11	(6 11).
Alloy 630	See footnote 12	(6 12).
Alloy 485	See footnote 7	(7 9).
Forgings:		

TABLE § 56.60–2—ADOPTED SPECIFICATIONS NOT LISTED IN THE ASME BPVC—Continued

ASTM specifications	Source of allowable stress	Notes
B283 (forging brass)	See footnotes 5 and 8	(5 8).
Castings:		
B26	See footnotes 5, 13, and 14	(5 13 14).
B85	See footnotes 5, 13, and 14	(5 13 14).

Note 1 to Table 1 to 56.60–2: Table § 56.60–2 is a listing of adopted bar stock and nonferrous forging and casting specifications not listed in the ASME BPVC. Particular attention should be given to the supplementary testing requirements and service limitations contained in the footnotes. All ASTM standards referred to in table § 56.60–2 and its footnotes are incorporated by reference (see § 56.01–2).

[1] For limitations in use refer to § 56.60–5.

[2] Allowable stresses must be the same as those listed in UCS23 of Section VIII of the ASME BPVC (incorporated by reference; see § 56.01–2) for ASME SA–675 (incorporated by reference, see § 56.01–2) material of equivalent tensile strength.

[3] Physical testing must be performed as for material manufactured to ASME SA–675, except that the bend test is not required.

[4] Allowable stresses must be the same as those listed in UCS23 of Section VIII of the ASME BPVC for the corresponding SA–182 material.

[5] Limited to air and hydraulic service with a maximum design temperature of 150 °F. The material must not be used for saltwater service or other fluids that may cause dezincification or stress corrosion cracking.

[6] An ammonia vapor test, in accordance with ASTM B858 must be performed on a representative model of each finished product design.

[7] Allowable stresses must be the same as those listed in UNF23 of Section VIII of the ASME BPVC for SB–171, naval brass.

[8] An ammonia vapor test, in accordance with ASTM B858, must be performed on a representative model for each finished product design. Tension tests must be performed to determine tensile strength, yield strength, and elongation. Minimum values must be those listed in Table 3 of ASTM B283.

[9] Physical testing, including mercurous nitrate test, must be performed as for material manufactured to ASTM B21.

[10] Physical testing must be performed as for material manufactured to ASTM B96. Allowable stresses must be the same as those listed in UNF23 of Section VIII of the ASME BPVC for SB–96 and must be limited to a maximum allowable temperature of 212 °F.

[11] Physical testing must be performed as for material manufactured to ASTM B171, alloy D. Allowable stresses must be the same as those listed in UNF23 of Section VIII of the ASME BPVC for SB–171, aluminum bronze D.

[12] Physical testing must be performed as for material manufactured to ASTM B171, alloy E. Allowable stresses must be the same as those listed in UNF23 of Section VIII of the ASME BPVC for SB–171, aluminum bronze, alloy E.

[13] Tension tests must be performed to determine tensile strength, yield strength, and elongation. Minimum values must be those listed in Table X–2 of ASTM B85.

[14] Those alloys with a maximum copper content of 0.6 percent or less must be acceptable under this specification. Cast aluminum must not be welded or brazed.

§ 56.60–3 [Amended]

■ 189. Amend § 56.60–3 as follows:

■ a. In paragraph (a), remove the words ''salt water'' and add, in their place, the word ''saltwater''; and

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

■ 190. Amend § 56.60–5 as follows:

■ a. In paragraph (a), remove the text ''775 °F (412 °C)'' and add, in its place, the text ''800 °F (427 °C)'';

■ b. Redesignate paragraph (d) as paragraph (c); and

■ c. Revise newly redesignated paragraph (c).

The revision reads as follows:

§ 56.60–5 Steel (High temperature applications).

* * * * *

(c) The design temperature of a piping system employing one or more of the materials listed in paragraphs (a) and (b) of this section must not exceed the lowest graphitization temperature specified for materials used.

■ 191. Amend § 56.60–10 as follows:

■ a. Revise paragraph (a);

■ b. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ c. Revise the first sentence of paragraph (c).

The revisions read as follows:

§ 56.60–10 Cast iron and malleable iron.

(a) The low ductility of cast iron and malleable iron should be recognized and the use of these metals where shock loading may occur should be avoided. Cast iron and malleable iron components must not be used at temperatures above 450 °F. Cast iron and malleable iron fittings conforming to the specifications of table 1 to § 56.60–1 may be used at the pressure limits of the applicable standards at temperatures not exceeding 450 °F. Valves of either of these materials may be used if they conform to the standards for class 125 and class 250 flanges and flanged fittings in ASME B16.1 (incorporated by reference; see § 56.01–2).

* * * * *

(c) Malleable iron and cast iron valves and fittings, designed and marked for Class 300 refrigeration service, may be used for such service up to a pressure limitation of 300 psi. * * *

■ 192. Amend § 56.60–15 as follows:

■ a. Revise paragraph (a) and the introductory text to paragraph (b); and

■ b. In paragraph (b)(2), remove the text ''section VIII of the ASME Boiler and Pressure Vessel Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''.

The revision reads as follows:

§ 56.60–15 Ductile iron.

(a) Ductile cast iron components made of material conforming to ASTM F1155 (incorporated by reference, see § 56.01–2) may be used within the service restrictions and pressure-temperature limitations of UCD–3 of Section VIII of the ASME BPVC (incorporated by reference; see § 56.01–2).

(b) Ductile iron castings conforming to ASTM F1155 may be used in hydraulic systems at pressures in excess of 7500 kilopascals (1000 pounds psig), provided the following:

* * * * *

■ 193. Amend § 56.60–20 as follows:

■ a. Designate the Note immediately following paragraph (a) as Note 1 to paragraph (a);

■ b. Revise paragraph (c); and

■ c. In paragraph (d), remove the text ''Table 56.60–2(a)'' and add, in its place, the text ''table § 56.60–2''.

The revision reads as follows:

§ 56.60–20 Nonferrous materials.

* * * * *

(c) A suitable thread compound must be used in threaded joints in aluminum pipe to prevent seizing. Pipe in the annealed temper should not be threaded.

* * * * *

■ 194. Amend § 56.60–25 as follows:

■ a. Remove the text ''46 CFR'' wherever it appears and add, in its place, the symbol ''§ '';

■ b. Remove the subject heading from paragraph (b); and

■ c. Revise paragraphs (c) and (d).

The revisions read as follows:

§ 56.60–25 Nonmetallic materials.

* * * * *

(c) Plastic valves, fittings, and flanges must be designed, fabricated, tested, and installed to satisfy the requirements for plastic pipe contained in this section.

(d) Requests to use nonmetallic materials other than those specified in this section must be submitted to the Commandant for consideration.

■ 195. Revise § 56.65–1 to read as follows:

§ 56.65–1 General (modifies 127 through 135).

The requirements for fabrication, assembly and erection in subparts 56.70 through 56.90 must apply in lieu of 127 through 135 of ASME B31.1 (incorporated by reference; see § 56.01–2). Those paragraphs reproduced are so noted.

■ 196. Revise 56.70–1 to read as follows:

§ 56.70–1 General.

The following generally applies to all types of welding processes. Alternatives must be approved by the Marine Safety Center.

■ 197. Revise 56.70–5 to read as follows:

§ 56.70–5 Material.

(a) *Filler metal.* All filler metal, including consumable insert material, must comply with the requirements of Section IX of the ASME BPVC (incorporated by reference; see § 56.01–2) and 46 CFR 57.02–5.

(b) *Backing rings.* Backing rings must comply with section 127.2.2. of ASME B31.1.

■ 198. Amend § 56.70–10 as follows:

■ a. Revise the subject headings to paragraphs (a) and (a)(1);

■ b. In paragraph (a)(1)(ii), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ c. In paragraphs (a)(1)(iii) and (2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ d. In paragraph (a)(3), remove the text ''within existing commercial tolerances on diameters, wall thicknesses, and out of roundness'';

■ e. In paragraph (a)(4), remove the word ''shall'' and add, in its place, the word ''must''; and

■ f. Revise paragraph (b).

The revisions read as follows:

§ 56.70–10 Preparation (modifies 127.3).

(a) *Butt welds*—(1) *End preparation.*

* * * * *

(b) *Fillet welds.* Piping components that are to be joined utilizing fillet welds must be prepared in accordance with applicable provisions and requirements of this section. For typical details, see Figures 127.4.4A and 127.4.4C of ASME B31.1 (incorporated by reference; see § 56.01–2) and § 56.30–10(b). See § 56.30–5(d) for additional requirements.

■ 199. Amend § 56.70–15 as follows:

■ a. Revise the section heading and paragraph (a)(1);

■ b. Remove paragraph (a)(2) and redesignate paragraph (a)(3) as paragraph (a)(2);

■ c. Revise newly redesignated paragraph (a)(2) and paragraph (b)(2);

■ d. In the introductory text to paragraph (b)(3), remove the word ''shall'' and add, in its place, the word ''must'';

■ e. Revise paragraph (b)(4);

■ f. In paragraph (b)(5), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ g. Revise the first sentence of paragraphs (b)(6)(i) and paragraph (b)(6)(ii);

■ h. In the introductory text to paragraph (b)(8), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ i. Revise paragraphs (b)(8)(ii) and (iii), and (c), the sixth sentence of paragraph (d)(3), paragraph (d)(4), the subject heading to paragraph (e), and paragraph (e)(1);

■ j. In paragraph (f)(1), remove the word ''shall'' and add, in its place, the word ''must'';

■ k. Revise paragraph (g)(1);

■ l. In paragraph (g)(2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ m. Redesignate figure 56.70–15(g) as figure § 56.70–15(g)(3);

■ n. In paragraphs (g)(4), (5), and (6), and (h), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ o. Redesignate table 56.70–15 as table § 56.70–15.

The revisions read as follows:

§ 56.70–15 Procedure (modifies 127.4).

(a) * * * (1) Qualification of welders and welding procedures is required and must comply with the requirements of part 57 of this subchapter.

(2) Sections must be welded insofar as possible in the fabricating shop. Welding must not be done in severe weather conditions. Prior to welding Class I piping or low temperature piping, the fabricator must request a marine inspector to visit his plant to examine his fabricating equipment and to witness the qualification tests required by part 57 of this subchapter. One test specimen must be prepared for each process and welding position to be employed in the fabrication.

(b) * * *

(2) Girth butt welds in Class I, I–L, and II–L piping systems must be double welded butt joints or equivalent single welded butt joints for pipe diameters exceeding three-fourth inch nominal pipe size. The use of a single welded butt joint employing a backing ring (note restrictions in paragraph (b)(3)(iv) of this section) on the inside of the pipe is an acceptable equivalent for Class I and Class II–L applications, but not permitted for Class I–L applications. Single welded butt joints employing either an inert gas for first pass backup or a consumable insert ring may be considered the equivalent of a double welded butt joint for all classes of piping and is preferable for Class I–L and II–L systems where double butt welds cannot be used. A first pass inert gas backup is intended to mean that the inside of the pipe is purged with inert gas and that the root is welded with the inert gas metal arc (mig) or inert gas tungsten arc (tig) processes. For single welded joints, where possible, the inside of the joint must be examined visually to assure full penetration. Radiographic examination of at least 20 percent of single welded joints to check for penetration is required for all Class I and Class I–L systems regardless of size following the requirements of § 56.95–10. Ultrasonic testing may be utilized in lieu of radiographic examination if the procedures are approved.

* * * * *

(4) Tack welds that become part of the finished weld must be made by a qualified welder. Tack welds which have cracked must be removed.

* * * * *

(6) * * *

(i) The condition of finished welds must be suitable for radiographic and other nondestructive examinations when required by § 56.95–10. * * *

(ii) Reinforcements are permitted in accordance with table § 56.70–15.

* * * * *

(8) * * *

(ii) Any slag inclusion or porosity greater than specified as acceptable in PW–51 of Section I of the ASME BPVC (incorporated by reference; see § 56.01–2).

(iii) Undercuts in the external surfaces of butt welds more than 1/32-inch deep.

* * * * *

(c) *Longitudinal butt welds.* Longitudinal butt welds in piping components not made in accordance with the standards and specifications listed in § 56.60–1 must meet the requirements of paragraph 127.4.3 of ASME B31.1 (incorporated by reference; see § 56.01–2).

(d) * * *

(3) * * * The fillet weld must be deposited in a minimum of two passes, unless specifically approved otherwise. * * *

(4) Sleeve and socket type joints may be used in Class II piping systems without restriction as to size of pipe or tubing joined. The fillet welds must be deposited in a minimum of two passes, unless specifically approved otherwise. Requirements for joints employing socket weld and slip-on flanges are in § 56.30–10.

(e) *Seal welds.* (1) Where seal welding of threaded joints is performed, threads must be entirely covered by the seal weld.

* * * * *

(g) * * *

(1) Figures 127.4.8A, B, and C of ASME B31.1 show typical details of branch connections with and without added reinforcement. See also figure § 56.70–15(g)(3) for additional pipe connections.

* * * * *

■ 200. Revise § 56.70–20 to read as follows:

§ 56.70–20 Qualification, general.

(a) Qualification of welding procedures and welders is required, and must comply with the requirements of Section IX of the ASME BPVC (incorporated by reference; see § 56.01–2) as modified by part 57 of this subchapter.

(b) Each butt-welded joint of Class I of Class I–L piping must be marked with the welder's identification symbol. Dies must not be used to mark the pipe where the pressure exceeds 600 pounds psi or the temperature exceeds 750 °F. or in Class I–L systems.

■ 201. Amend § 56.75–5 as follows:

■ a. Revise the section heading;

■ b. In paragraph (a), remove the words ''meet and''; and

■ c. Revise paragraph (b).

The revision reads as follows:

§ 56.75–5 Filler metal (modifies 128.2).

* * * * *

(b) The brazing material used must have a shearing strength of at least 10,000 psig. The maximum allowable working pressure for brazing piping must be determined by this part.

* * * * *

■ 202. Revise § 56.75–10 to read as follows:

§ 56.75–10 Joint clearance.

The clearance between surfaces to be joined must be no larger than is necessary to allow complete capillary distribution of the brazing alloy or solder.

§ 56.75–15 [Amended]

■ 203. Amend § 56.75–15 as follows:

■ a. In the section heading, remove the word ''Heating'' and add, in its place, the text ''Heating.''; and

■ b. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''.

■ 204. Amend § 56.75–20 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 56.75–20 Brazing qualification.

(a) The qualification of the performance of brazers and brazing operators must be in accordance with the requirements of Part C, Section IX of the ASME Code (incorporated by reference; see § 56.01–2) and part 57 of this subchapter.

* * * * *

§ 56.75–25 [Amended]

■ 205. Amend § 56.75–25 as follows:

■ a. In paragraph (b), remove the second sentence; and

■ b. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''.

■ 206. Amend § 56.75–30 as follows:

■ a. In paragraph (a)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraph (b)(1); and

■ c. In paragraphs (b)(2) and (c)(1) and (2), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 56.75–30 Pipe joining details.

* * * * *

(b) * * * (1) Copper-alloy brazing may be employed to join pipe, valves, and fittings. Circumferential joints may be either of the butt or socket type. Where butt joints are employed, the included angle must be not less than 90° where the wall thickness is three-sixteenths of an inch or greater. The annular clearance of socket joints must be held to small clearances.

* * * * *

■ 207. Revise § 56.80–5 to read as follows:

§ 56.80–5 Bending (modifies 129).

Pipe may be bent by any hot or cold method and to any radius that will result in a bend surface free of cracks, as determined by a method of inspection specified in the design, and substantially free of buckles. Such bends must meet the design requirements of 102.4.5 and 104.2.1 of ASME B31.1 (incorporated by reference; see § 56.01–2). This does not prohibit the use of bends designed as creased or corrugated. If doubt exists as to the wall thickness being adequate, Class I piping having diameters exceeding 4 inches must be nondestructively examined by the use of ultrasonics or other acceptable method. The nondestructive method must be employed where the design temperature exceeds 750 °F.

§ 56.80–15 [Amended]

■ 208. Amend § 56.80–15 as follows:

■ a. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. In paragraph (d), remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ c. In paragraph (f), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 209. Revise § 56.85–10 to read as follows:

§ 56.85–10 Preheating.

(a) The minimum preheat temperatures listed in table § 56.85–10(c) for P-number materials groupings are mandatory minimum pre-heat temperatures. Preheat is required for Class I, I–L, I–N, II–N and II–L piping when the ambient temperature is below 50 °F. Table 131.4.1 of ASME B31.1 (incorporated by reference; see § 56.01–2) is considered equivalent to table § 56.85–10(c).

(b) During the welding of dissimilar materials, the minimum preheat temperature may not be lower than either the highest temperature listed in table § 56.85–10(c) for any of the materials to be welded or the temperature established in the qualified welding procedure.

(c) The preheat temperature must be checked by other suitable methods to ensure that the required preheat temperature is obtained before, and uniformly maintained during the welding.

TABLE § 56.85–10(c)—PREHEAT AND POSTHEAT TREATMENT OF WELDS

ASME Sec IX (incorporated by reference; see § 56.01–2) Nos.	Preheat required			Postheat treatment requirement, other than for dissimilar metal welds		
	Minimum wall (inch)	Minimum temperature (°F)	Minimum wall and other (inch)	Temperature (°F) (inch)	Time cycle	
					Hour per inch of wall	Minimum time within range (hour)
P–1	All	50 (for 0.30% C maximum or less).	Over ¾ in	1,100 to 1,200 (minimum) (maximum).	1	1
P–1	All	175 (for over 0.30% C) and wall thickness over 1 in.	do	do	1	1
P–3	All walls	175	Over ½ in	1,200 to 1,350 (minimum) (maximum).	1	1
P–4	Up to ¾ in inclusive.	300	Over ½ in or over 4 in. NPS or.	1,330 to 1,400 (minimum) (maximum).	1	1
	Over ¾ in	400	Over 0.15% C maximum.			
P–5 (less than 5% Cr.).	Up to ¾ in inclusive.	300	Over ½ in or over 4 in. nom. size or.	1,300 to 1,425 (minimum) (maximum).	1	1
	Over ¾ in	400	Over 0.15% C maximum.			
P–5 (5% Cr and higher).	Up to ¾ inclusive	300	All walls	do	1	2
	Over ¾ in	400	Over 0.15% C maximum.			
P–6	All walls	300	All walls	1,400 to 1,500 (minimum) (maximum).	1	2
P–8	do	None required	do	None required		

Note 1 to table § 56.85–10(c): Wall thickness of a butt weld is defined as the thicker of the two abutting ends after end preparation including I.D. machining.

Note 2 to table § 56.85–10(c): The thickness of socket, fillet, and seal welds is defined as the throat thicknesses for pressure and non-pressure retaining welds.

Note 3 to table § 56.85–10(c): For P–1, the 0.30% C. max applies to specified ladle analysis.

Note 4 to table § 56.85–10(c): For P–7, P–9A, P–9B, P–10C and other materials not listed the Preheat and Postheat Treatment is to be in accordance with the qualified procedure.

(d)(1) Preheat temperatures must be checked by use of temperature indicating crayons, thermocouple pyrometers, or other suitable method.

(2) For inert gas tungsten arc root pass welding, a lower preheat than specified in table § 56.85–10(c) may be used in accordance with the qualified procedure.

(3) Heating rate for furnace, gas, electric resistance, and other surface heating methods must not exceed:

(i) 600 °F per hour for thicknesses 2 inches and under.

(ii) 600 °F per hour divided by ½ the thickness in inches for thickness over 2 inches.

(4) Heating route for induction heating must not exceed:

(i) 600 °F per hour for thickness less than 1½ inches (60 and 400 cycles).

(ii) 500 °F per hour when using 60 cycles and 400 °F per hour when using 400 cycles for thicknesses 1½ inches and over.

(5) When local heating is used, the weld must be allowed to cool slowly from the postheat treatment temperature. When furnace cooling is used, the pipe sections must be cooled in the furnace to 1000 °F and may then be cooled further in still air.

(6) Welding on P–3, P–4, and P–5 with 3% Cr max. may be interrupted only if—

(i) At least ⅜ inch thickness of weld is deposited or 25 percent of welding groove is filled, whichever is greater;

(ii) The weld is allowed to cool slowly to room temperature; and

(iii) The required preheat is resumed before welding is continued.

(7) Welding on P–6 is subject to a 600 °F maximum interpass temperature.

(8) When attaching welding carbon steel non-pressure parts to steel pressure parts and the throat thickness of the fillet or partial or full penetration weld is ½ in. or less, postheat treatment of the fillet weld is not required for Class I and II piping if preheat to a minimum temperature of 175 °F is applied when the thickness of the pressure part exceeds ¾ in.

(9) The maximum postheat treatment temperature listed in table § 56.85–10(c) for each P number is a recommended maximum temperature.

(10) Postheat treatment temperatures must be checked by use of thermocouple pyrometers or other suitable means.

(11) When postheat treatment by annealing or normalizing is used, the postheat treatment temperatures must be in accordance with the qualified welding procedure.

(12) (i) Local postheat treatment of butt welded joints must be performed on a circumferential band of the pipe. The minimum width of this band, centered on the weld, must be the width of the weld plus 2 inches.

(ii) Local postheat treatment of welded branch connections must be performed by heating a circumferential band of the pipe to which the branch is welded. The width of the heated band must extend at least 1 inch beyond the weld joining the branch.

(13) For Class I–L and II–L piping systems, relief from postweld heat treatment may not be dependent upon wall thickness. See also §§ 56.50–105(a)(3) and 56.50–105(b)(3).

■ 210. Amend § 56.85–15 as follows:

■ a. In paragraph (a):

■ i. Remove the words ''as is often the case when making branch connections'' and add, in their place, the text ''(such as branch connections)''; and

■ ii. Remove the text ''Table 56.85–10'' and add, in its place, the text ''table § 56.85–10(c)'';

■ b. In the introductory text to paragraph (b):

■ i. Remove the word ''shall'' and add, in its place, the word ''must''; and

■ ii. Remove the text ''Table 56.85–10'' and add, in its place, the text ''table § 56.85–10(c)'';

■ c. In paragraph (b)(1), remove the words ''High pressure salt'' and add, in its place, the word ''Salt'';

■ d. In paragraph (c):

■ i. Remove the word ''shall'' and add, in its place, the word ''must''; and

■ ii. Remove the text ''Table 56.85–10'' and add, in its place, the text ''table § 56.85–10(c)''; and

■ e. Revise paragraph (d).

The revision reads as follows:

§ 56.85–15 Postheat treatment.

* * * * *

(d) Heating a fabricated assembly as a complete unit is usually desirable; however, the size or shape of the unit or the adverse effect of a desired treatment on one or more components are involved may dictate alternative procedures.

* * * * *

■ 211. Revise § 56.90–1 to read as follows:

§ 56.90–1 General.

The assembly of the various piping components, whether done in a shop or as field erection, must be done so that the completely erected piping conforms with the requirements of the regulations in this subchapter.

■ 212. Amend § 56.90–5 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 56.90–5 Bolting procedure.

(a) All flanged joints must be fitted up so that the gasket contact faces bear uniformly on the gasket and then must be made up with relatively uniform bolt stress.

* * * * *

■ 213. Revise § 56.90–10 to read as follows:

§ 56.90–10 Threaded piping (modifies 135.5).

(a) Any compound used in threaded joints must be suitable for the service conditions and must not react unfavorably with either the service fluid or the piping materials.

(b) Threaded joints which are to be seal welded must be made up without any thread compound.

■ 214. Amend § 56.95–1 as follows:

■ a. In paragraph (a):

■ i. Remove the word ''shall''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ b. Revise paragraph (b).

The revision reads as follows:

§ 56.95–1 General (replaces 136).

* * * * *

(b) Prior to initial operation, a piping installation must be inspected to assure compliance with the engineering design, and with the material, fabrication, assembly and test requirements of ASME B31.1, as modified by this subchapter. This inspection is the responsibility of the owner or operator and may be performed with an engineering organization employed by the owner, together with the marine inspector.

§ 56.95–5 [Amended]

■ 215. In § 56.95–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 216. Revise § 56.95–10 to read as follows:

§ 56.95–10 Type and extent of examination required.

(a) *General.* The types and extent of nondestructive examinations required for piping must be in accordance with this section and Table 136.4 of ASME B31.1 (incorporated by reference; see § 56.01–2). In addition, a visual examination must be made.

(1) 100 percent radiography is required for all Class I, I–L, and II–L piping with wall thickness equal to or greater than 10 mm (.393 in.).

Note 1 to paragraph (a)(1): Throughout this this section, where for some reason, such as joint configuration, radiography is not applicable, another approved examination may be utilized.

(2) Nondestructive examination is required for all Class II piping equal to or greater than 18 inches nominal diameter regardless of wall thickness. Any test method acceptable to the Officer in Charge, Marine Inspection may be used.

(3) Nondestructive examinations of other piping systems are required only when deemed necessary by the Officer in Charge, Marine Inspection (OCMI).

(b) *Visual examination.* Visual examination consists of observation by the marine inspector either before, during, or after manufacture, fabrication, assembly or test. All welds, pipe and piping components must comply with the limitations on imperfections specified in the product specification or with the limitations on imperfections specified in § 56.70–15(b)(7) and (8), and (c), as applicable.

(c) *Nondestructive types of examinations*—(1) *100 Percent radiography.* Where 100 percent radiography is required, each weld in the piping must be completely radiographed. If a butt weld is examined by radiography, for either random or 100 percent radiography, the method used must be as follows:

(i) X-ray or gamma ray method of radiography may be used. The selection of the method must be dependent upon its adaptability to the work being radiographed. The procedure to be followed must be as indicated in PW–51 of Section I of the ASME BPVC (incorporated by reference; see § 56.01–2).

(ii) If a piping component or a weld other than a butt weld is radiographed, the method used must be in accordance with UW–51 of Section VIII of the ASME BPVC (incorporated by reference; see § 56.01–2).

(2) *Random radiography.* Where random radiography is required, one or more welds may be completely or partially radiographed. Random radiography is desirable in field welding, where conditions such as position, temperatures, and cleanliness are not as controlled as in shop welding. It may be employed whenever an Officer in Charge, Marine Inspection questions a pipe weld not otherwise required to be tested. The standards of acceptance are the same as for 100 percent radiography.

(3) *Ultrasonic.* Where 100 percent ultrasonic testing is specified, the entire surface of the weld being inspected must be covered using careful methods to be sure that a true representation of the actual conditions is obtained. The procedures to be used must be submitted to the Commandant for approval.

(4) *Liquid penetrant.* Where liquid penetrant examination is required, the entire surface of the weld being examined must be covered. The examination must be performed in accordance with appendix VIII to Section VIII of the ASME BPVC. The following standards of acceptance must be met:

(i) All linear discontinuities and aligned penetrant indications revealed by the test must be removed. Aligned

penetrant indications are those in which the average of the center-to-center distances between any one indication and the two adjacent indications in any straight line is less than three-sixteenths inch. All other discontinuities revealed on the surface need not be removed unless the discontinuities are also revealed by radiography, in which case the pertinent radiographic specification applies.

(ii) [Reserved]

(5) *Magnetic particle.* Where magnetic particle testing is required, the entire surface of the weld being examined must be covered. The testing must be performed in accordance with Appendix VI to Section VIII of the ASME BPVC. The following standards of acceptance are required for welds. All linear discontinuities and aligned indications revealed by the test must be removed. Aligned indications are those in which the average of the center-to-center distances between any one indication and the two adjacent indications in any straight line is less than three-sixteenths inch. All other revealed discontinuities need not be removed unless the discontinuities are also revealed by radiography, in which case the requirements of paragraph (c)(1) of this section must be met.

■ 217. Amend § 56.97–1 as follows:

■ a. In paragraph (a), remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ b. Revise the introductory text of paragraph (b);

■ c. Redesignate footnote 1 to paragraph (b)(2)(i) as Note 1 to paragraph (b)(2)(i);

■ d. Revise paragraph (b)(2)(ii);

■ e. Designate the Note as Note 1 to paragraph (b)(3); and

■ f. Remove paragraph (b)(4).

The revisions read as follows:

§ 56.97–1 General (replaces 137).

* * * * *

(b) *Leak tightness.* It is mandatory that the piping constructed demonstrates leak tightness. Except where otherwise permitted, this requirement must be met by a hydrostatic leak test prior to initial operations. Where a hydrostatic test is not practicable, a pneumatic test (§ 56.97–35) or initial service leak test (§ 56.97–38) may be substituted if approved by the Commandant.

* * * * *

(2) * * *

(ii) Piping systems are to be used in services where traces of water cannot be tolerated and, whenever possible, the piping subassemblies or system have been previously hydrostatically tested to the pressure required in § 56.97–30(e).

* * * * *

§ 56.97–5 [Amended]

■ 218. In § 56.97–5(b), remove the text ''Table 56.60–1(b)'' and add, in its place, the text ''table 2 to § 56.60–1''.

■ 219. Amend § 56.97–25 as follows:

■ a. Revise the section heading; and

■ b. Revise paragraphs (b), (c), and (d).

The revisions read as follows:

§ 56.97–25 Preparation for testing (modifies 137.2).

* * * * *

(b) *Addition of temporary supports.* Piping systems designed for vapor or gas may be provided with additional temporary supports, if necessary.

(c) *Restraint or isolation of expansion joints.* Expansion joints must be provided with temporary restraint, if required for the additional pressure load under test.

(d) *Isolation of equipment not subjected to pressure test.* Equipment that is not to be subjected to the pressure test must be isolated by a blank flange or equivalent means.

* * * * *

§ 56.97–35 [Amended]

■ 220. Amend § 56.97–35 as follows:

■ a. In the section heading, remove the word ''replaces'' and add, in its place, the word ''modifies'';

■ b. In paragraph (b)(1), add the words ''nor toxic'' after the word ''flammable''; and

■ c. In paragraph (b)(2), remove the text ''upon review of the metallurgical aspects of the piping materials with respect to its brittle fracture properties''.

■ 221. Amend § 56.97–38 by revising the section heading and paragraph (a) to read as follows:

§ 56.97–38 Initial service leak test (modifies 137.7).

(a) An initial service leak test and inspection is acceptable when other types of test are not practical or when leak tightness is conveniently demonstrable due to the nature of the service. One example is piping where shut-off valves are not available for isolating a line. Others may be systems for service water, condensate, plant and instrument air, etc., where checking out of pumps and compressors afford ample opportunity for leak tightness inspection prior to full-scale operation.

* * * * *

§ 56.97–40 [Amended]

■ 222. Amend § 56.97–40 as follows:

■ a. In the introductory text to paragraph (a) and paragraph (a)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. In paragraph (a)(2), remove the text '', but not less than 500 pounds per square inch'';

■ c. Remove paragraph (a)(3) and redesignate paragraphs (a)(4) through (10) as paragraphs (a)(3) through (9);

■ e. In newly redesignated paragraph (a)(6), remove the text '', but not less than 150 pounds per square inch''; and

■ f. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''.

PART 57—WELDING AND BRAZING

■ 223. The authority citation for part 57 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703, E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; 49 CFR 1.46.

■ 224. Amend § 57.01–1 by revising paragraph (a) to read as follows:

§ 57.01–1 Qualifications and production tests.

(a) (*Replaces QW 100 and QB 100.*) The regulations in this part apply to the qualification of welding procedures, welders, and brazers, and to production tests for all types of manual and machine arc and gas welding and brazing processes.

* * * * *

■ 225. Revise § 57.02–1 to read as follows:

§ 57.02–1 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a). To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and make the material available to the public. All approved material is on file at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil.* The material is also available from the sources listed elsewhere in this section or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov,* or go to: *www.archives.gov/federal-register/fr/ibr-locations.html.*

(b) *American Society of Mechanical Engineers* (*ASME*), Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section IX, Welding, Brazing, and Fusing Qualifications (2019), (''Section

IX of the ASME BPVC''); IBR approved for §§ 57.02–2, 57.02–3, 57.02–4, 57.03–1, 57.04–1, 57.05–1, 57.06–1, 57.06–4.

(2) [Reserved]

■ 226. Revise § 57.02–2 to read as follows:

§ 57.02–2 Adoption of Section IX of the ASME BPVC.

(a) The qualifications for all types of welders and brazers, the qualification of welding procedures, and the production tests for all types of manual and machine arc and gas welding and brazing processes used in fabricating power boilers, heating boilers, pressure vessels and piping must be in accordance with Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1), as limited, modified, or replaced by specific requirements in this part. For general information table § 57.02–2(a) lists the various paragraphs in Section IX of the ASME BPVC which are limited, modified, or replaced by regulations in this part.

TABLE § 57.02–2(a)—LIMITATIONS AND MODIFICATIONS TO THE ADOPTION OF SECTION IX OF THE ASME BPVC

Paragraphs in Section IX of the ASME BPVC, and disposition	Unit of this part
QW–100 replaced by	57.01–1(a).
QW–103 replaced by	57.02–3(a).
QW–201 modified by	57.03–1(a).
QW–202 modified by	57.04–1.
QW–202.1 modified by	57.03–1(b).
QW–210 modified by	57.04–1.
QW–211 modified by	57.02–4.
QW–253 modified by	57.03–1(g).
QW–254 modified by	57.03–1(g).
QW–255 modified by	57.03–1(g).
QW–305 modified by	57.01–1(b).
QW–451 modified by	57.03–1(b) and 57.04–1.
QB–100 replaced by	57.01–1(a).
QB–103 replaced by	57.02–3(a).
QB–201 modified by	57.03–1(a).
QB–202 modified by	57.04–1.
QB–305 modified by	57.01–1(b).

(b) References to the ASME Code, like paragraph QW–131.1 indicate:

Q=Section IX, Welding and Brazing Qualifications, ASME BPVC.
W=Part containing requirements for welding procedure, welder, and welding operator qualifications.
131=Major division within the part.
131.1=Specific subparagraph within the part.

(c) When a paragraph or a section of the regulations in this part relates to material in Section IX of the ASME BPVC, the relationship with the code will be shown immediately following the heading of the section or at the beginning of the paragraph as follows:

(1) (Modifies Q____.) This indicates that the material in Q____ is generally applicable but is being altered, amplified or augmented.

(2) (Replaces Q____.) This indicates that Q____ does not apply.

(3) (Reproduces Q____.) This indicates that Q____ is being identically reproduced for convenience, not for emphasis.

§ 57.02–3 [Amended]

■ 227. Amend § 57.02–3 as follows:

■ a. In paragraph (a), remove the text '', provided the fabricator's tests have been certified by an authorized Code inspector as defined in paragraphs PG–91, N–612, HG–515.2, or UG–91 of the ASME Code; and

■ b. Reserve paragraph (b).

■ 228. Amend § 57.02–4 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 57.02–4 Fabricator's responsibility.

(a) (*Replaces QW 103 and QB 103*). Each manufacturer or contractor is responsible for the welding and brazing done by his organization and must conduct tests required in this part to qualify the welding and brazing procedures used and the performance of welders and brazers who apply these procedures. The manufacturer must bear the expense of conducting the tests. Each manufacturer must maintain a record of the test results obtained in welding and brazing procedure and welder and brazer performance qualifications. These required records, together with identification data, must be maintained by the manufacturer or contractor on the recommended forms illustrated in Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1), or on any other form acceptable to the Officer in Charge, Marine Inspection. Upon request, duplicate forms must be furnished by the manufacturer or contractor to the marine inspector.

* * * * *

■ 229. Amend § 57.03–1 as follows:

■ a. Revise the last sentence of paragraph (a)(1);

■ b. In paragraph (a)(2), remove the text ''section IX of the ASME Code'' and add, in its place, the text ''Section IX of the ASME BPVC'';

■ c. In paragraph (b)(1), remove the word ''Code'' and add, in its place, the text ''BPVC'';

■ d. In paragraph (b)(4), remove the text ''table 57.03–1(b)'' and add, in its place, the text ''table § 57.03–1(b)''; and

■ e. Redesignate table 57.03–1(b) as table § 57.03–1(b).

The revision reads as follows:

§ 57.03–1 General requirements.

(a) * * *

(1) * * * Suggested forms showing the information which is required in the welding or brazing procedure specification are in Form QW 482 and Form QB 482 of Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1).

* * * * *

■ 230. Revise § 57.04–1 to read as follows:

§ 57.04–1 Test specimen requirements and definition of ranges (modifies QW 202, QW 210, QW 451, and QB 202).

The type and number of specimens that must be tested to qualify an automatic, semiautomatic, or manual procedure specification must be in

accordance with QW 202, QW 210, or QB 202 of Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1) as applicable, except as supplemented by §§ 57.03–1(b) and 57.03–1(d).

§ 57.05–1 [Amended]

■ 231. Amend § 57.05–1 as follows:
■ a. In paragraph (a), remove the text ''section IX of the ASME Code'' and add, in its place, the text ''Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1)''; and
■ b. Reserve paragraph (b).

§ 57.05–2 [Amended]

■ 232. In § 57.05–2, reserve paragraph (b).

§ 57.05–3 [Amended]

■ 233. Amend § 57.05–3 as follows:
■ a. Remove the text ''Figure 57.05–3(a) and (b)'' and add, in its place, the text ''figures 1 and 2 to § 57.05–3'';
■ b. Remove the word ''shall'' and add, in its place, the word ''must''; and
■ c. Redesignate figure 57.05–3(a) as figure 1 to § 57.05–3 and figure 57.05–3(b) as figure 2 to 57.05–3.

§ 57.05–5 [Amended]

■ 234. In § 57.05–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.
■ 235. Amend § 57.06–1 as follows:
■ a. In paragraphs (a) and (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ b. Revise paragraph (c).

The revision reads as follows:

§ 57.06–1 Production test plate requirements.

* * * * *

(c) Test plates are not required for heating boilers or Class III pressure vessels. Test plates are not required for main power boilers or pressure vessels constructed of P–1 material as listed in QW/QB 422 of Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1) whose welded joints are fully radiographed as required by part 52 or 54 of this subchapter as applicable except when toughness tests are required in accordance with § 57.06–5. When toughness tests are required all prescribed production tests must be performed.

§ 57.06–2 [Amended]

■ 236. In § 57.06–2, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.
■ 237. Amend § 57.06–3 as follows:
■ a. In paragraph (a):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ ii. Remove the text ''Figure 57.06–3'' and add, in its place ''figure § 57.06–3(d)'';
■ b. In paragraph (b), remove the word ''shall'' and add, in its place, the word ''must'';
■ c. Revise paragraph (d);
■ d. Redesignate figure 57.06–3 as figure § 57.06–3(d); and
■ e. In paragraph (e), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 57.06–3 Method of performing production testing.

* * * * *

(d) In the case of vessels having no longitudinal welded joints, at least one set of test plates must be welded for each vessel, using the circumferential joint process, procedure and technique, except that the provisions of § 57.06–2(a) also apply for Classes I and I–L vessels, and that the provisions of § 57.06–2(a) and (c) also apply for Classes II and II–L vessels.

* * * * *

■ 238. Amend § 57.06–4 as follows:
■ a. In paragraph (a), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ b. Revise paragraph (b);
■ c. In paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ d. In paragraph (d):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ ii. Remove the text ''Figures 57.06–4(d)(1) and 57.06–4(d)(2)'' and add, in its place, ''figures 1 and 2 to § 57.06–4(d)'';
■ e. Redesignate figure 57.06–4(d)(1) as figure 1 to § 57.06–4(d) and figure 57.06–4(d)(2) as figure 2 to § 57.06–4(d);
■ f. In paragraphs (e) and the introductory text to (f), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ g. In paragraph (f)(1):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ ii. Remove the text ''Figure 57.06–4(f)(1)(i)'' and add, in its place, the text ''figure 3 to § 57.06–4(f)''; and
■ iii. Remove the text ''Figure 57.06–4(f)(1)(ii)'' and add, in its place, the text ''figure 4 to § 57.06–4(f)'';
■ h. In paragraph (f)(2):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and
■ ii. Remove the text ''Figure 57.06–4(f)(2)'' and add, in its place, ''figure 5 to § 57.06–4(f)'';
■ i. Redesignate Figure 57.06–4(f)(1)(i) as Figure 3 to § 57.06–4(f)(2), Figure 57.06–4(f)(1)(ii) as Figure 4 to § 57.06–4(f)(2), and Figure 57.06–4(f)(2) as Figure 5 to § 57.06–4(f)(2);
■ j. In paragraph (g):
■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';
■ ii. Remove the text ''Figure 57.06–4(g)'' and add, in its place, the text ''figure 6 to § 57.06–4(g)''; and
■ iii. Remove the text ''Figure 57.06–4(f)(1)(ii)'' and add, in its place, the text ''figure 4 to § 57.06–4(f)'';
■ k. Revise paragraph (h); and
■ l. In paragraph (i), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 57.06–4 Production testing specimen requirements.

* * * * *

(b) The test plates must be so supported that the warping due to welding does not throw the finished test plate out of line by an angle of over 5°.

* * * * *

(h) The guided-bend specimen must be bent with the side of the weld in tension, its width must be equal to the full thickness of the plate and its thickness, after machining, must be 0.350 inch to 0.380 inch to permit bending in a jig having the contour of the standard jig as shown in Figure QW 466.1, QW 466.2, or QW 466.3 of Section IX of the ASME BPVC (incorporated by reference; see § 57.02–1). The specimen must withstand being bent cold to the full capacity of the jig without developing any crack exceeding one-eighth inch in any direction. Where the plate thickness exceeds two inches, the specimen must be cut in two so that each portion does not exceed 2 inches in width. Each such portion must be tested and must meet the requirements.

* * * * *

§ 57.06–5 [Amended]

■ 239. In § 57.06–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

PART 58—MAIN AND AUXILIARY MACHINERY AND RELATED SYSTEMS

■ 240. The authority citation for part 58 continues to read as follows:

Authority: 43 U.S.C. 1333; 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

§ 58.01–5 [Amended]

■ 241. In § 58.01–5:
■ a. Remove the word ''Steel'' and add, in its place, the word ''Marine''; and
■ b. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

§ 58.01–10 [Amended]

■ 242. In § 58.01–10 (b), remove the text ''D 93'' and add, in its place, the text ''D93''.

■ 243. Revise § 58.01–20 to read as follows:

§ 58.01–20 Machinery guards.

Gears, couplings, flywheels and all rotating machinery capable of injuring personnel must be provided with adequate covers or guards.

§ 58.01–30 [Amended]

■ 244. In § 58.01–30, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 245. Revise § 58.01–50 to read as follows:

§ 58.01–50 Machinery space, noise.

Each machinery space must be designed to minimize the exposure of personnel to noise in accordance with IMO Resolution MSC.337(91) (incorporated by reference, see § 58.03–1).

§ 58.01–55 [Amended]

■ 246. Amend § 58.01–55 as follows:

■ a. Redesignate paragraphs (e)(i) and (ii) as (e)(1) and (2); and

■ b. In newly redesignated paragraph (e)(1), remove the words ''of this subchapter''.

■ 247. Revise § 58.03–1 to read as follows:

§ 58.03–1 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(a) *American Boat and Yacht Council (ABYC),* 613 Third Street, Suite 10, Annapolis, MD 21403, (410) 990–4466, *www.abycinc.org.*

(1) P–1–14, Installation of Exhaust Systems for Propulsion and Auxiliary Engines, July 2009 (reaffirmed July 2014) (''ABYC P–1''); IBR approved for § 58.10–5.

(2) [Reserved]

(b) *American Bureau of Shipping (ABS),* 1701 City Plaza Drive, Spring, TX 77389, 281–877–5800, *www.eagle.org.*

(1) Rules for Building and Classing Marine Vessels, Part 4 Vessel Systems and Machinery, 2020 (''ABS Marine Vessel Rules''); IBR approved for §§ 58.01–5, 58.05–1, 58.10–15, 58.20–5, 58.25–5.

(2) [Reserved]

(c) *American Petroleum Institute (API),* 200 Massachusetts Avenue NW, Washington, DC 20001–5571, 202–682–8000, *www.api.org.*

(1) API RP 14C, Analysis, Design, Installation and Testing of Safety Systems for Offshore Production Facilities, 8th Edition (''API RP 14C''); IBR approved for § 58.60–9.

(2) API STD 53, Well Control Equipment Systems for Drilling Wells, 5th Edition, December 2018 (''API STD 53''); IBR approved for § 58.60–7.

(d) *American Society of Mechanical Engineers* (*ASME*), Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers (2019) (''Section I of the ASME BPVC''); IBR approved for § 58.30–15.

(2) ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Rules for Construction of Pressure Vessels (2019) (''Section VIII of the ASME BPVC''); IBR approved for § 58.30–15.

(3) ASME B31.3, Process Piping, January 31, 2017 (''ASME B31.3''); IBR approved for § 58.60–7.

(4) ASME B31.5–2016, Refrigeration Piping and Heat Transfer Components, June 29, 2016 (''ASME B31.5''); IBR approved for §§ 58.20–5, 58.20–20.

(e) *ASTM International,* 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, 877–909–2786, *www.astm.org.*

(1) ASTM A193/A193M–19, Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service or High Pressure Service and Other Special Purpose Applications, November 1, 2019 (''ASTM A193''); IBR approved for § 58.30–15.

(2) ASTM B96/B96M–16, Standard Specification for Copper-Silicon Alloy Plate, Sheet, Strip, and Rolled Bar for General Purposes and Pressure Vessels, April 1, 2016 (''ASTM B96''); IBR approved for § 58.50–5.

(3) ASTM B122/B122M–16, Standard Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar, April 1, 2016 (''ASTM B122''); IBR approved for § 58.50–5.

(4) ASTM B127–19, Standard Specification for Nickel-Copper Alloy (UNS NO4400) Plate, Sheet, and Strip. November 1, 2019 (''ASTM B127''); IBR approved for §§ 58.50–5, 58.50–10.

(5) ASTM B152/B152M–19, Standard Specification for Copper Sheet, Strip, Plate, and Rolled Bar, October 1, 2019 (''ASTM B152''); IBR approved for § 58.50–5.

(6) ASTM B209–14, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate, November 1, 2014 (''ASTM B209''); IBR approved for § 58.50–5, 58.50–10.

(7) ASTM D92–18, Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester, July 1, 2018 (''ASTM D92''); IBR approved for § 58.30–10.

(8) ASTM D93–19, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester, November 1, 2019 (''ASTM D93''); 58.01–10.

(9) ASTM D323–15a, Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method), June 1, 2015 (''ASTM D323''); IBR approved for § 58.16–5.

(f) *International Maritime Organization (IMO),* Publications Section, 4 Albert Embankment, London SE1 7SR, United Kingdom, *www.imo.org/.*

(1) A.467(XII), Guidelines for Acceptance of Non-Duplicated Rudder Actuators for Tankers, Chemical Tankers and Gas Carriers of 10,000 Tons Gross Tonnage and Above But Less Than 100,000 Tonnes Deadweight, 1981 (''IMO A.467(XII)''); IBR approved for § 58.25–60.

(2) Resolution MSC.337(91), Code on Noise Levels on Board Ships, 2012 (''IMO Resolution MSC.337(91)''); IBR approved for § 58.01–50.

(3) The International Convention for the Safety of Life at Sea, 1974, as amended (SOLAS); IBR approved for § 58.25–10.

(g) *National Fire Protection Association (NFPA),* 1 Batterymarch Park, Quincy, MA 02169, 617–770–3000, *www.nfpa.org.*

(1) NFPA 302, Fire Protection Standard for Pleasure and Commercial Motor Craft, 2020 (''NFPA 302''); IBR approved for § 58.10–5.

(2) [Reserved]

(h) *SAE International (SAE),* 400 Commonwealth Drive, Warrendale, PA 15096, 724–776–4841, *www.sae.org.*

(1) SAE J429 MAY2014, Mechanical and Material Requirements for

Externally Threaded Fasteners May 1, 2014 (''SAE J429''); IBR approved for § 58.30–15.

(2) SAE J1928 JUN2018, Devices Providing Backfire Flame Control for Gasoline Engines in Marine Applications, June 1, 2018 (''SAE J1928''); IBR approved for § 58.10–5.

■ 248. Amend § 58.05–1 as follows:

■ a. In paragraph (a):

■ i. Remove the word ''Steel'' and add, in its place, the word ''Marine''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''; and

■ b. Revise paragraph (b).

The revision reads as follows:

§ 58.05–1 Material, design and construction.

* * * * *

(b) When main and auxiliary machinery is to be installed without classification society review, the builder must submit to the cognizant Officer in Charge, Marine Inspection, such drawings and particulars of the installation as are required by the ABS Marine Vessel Rules for similar installations on classed vessels.

§ 58.05–5 [Amended]

■ 249. Amend § 58.05–5 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Reserve paragraph (b).

§ 58.10–5 [Amended]

■ 250. Amend § 58.10–5 as follows:

■ a. In paragraphs (a) and (b)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Designate the note following paragraph (b)(1) as note 1 to paragraph (b)(1);

■ c. In paragraph (b)(3)(i):

■ i. Remove the text ''J–1928'' wherever it appears and add, in its place, the text ''J1928'';

■ ii. Remove the text ''or UL 1111 (incorporated by reference; see 46 CFR 58.03–1)''; and

■ iii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ d. In paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ e. In the introductory text to paragraph (d)(1):

■ i. Remove the text ''part 1, section 23'' and add, in its place, the text ''Chapter 6''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ f. In paragraph (d)(1)(i), remove the word ''shall'' and add, in its place, the word ''must''; and

■ g. Reserve paragraph (d)(2).

§ 58.10–10 [Amended]

■ 251. In § 58.10–10(a), remove the word ''shall''.

■ 252. Amend § 58.10–15 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraphs (b), (c)(1) through (3), (e), the introductory text of paragraphs (f)(1) and (2), paragraph (f)(3), the introductory text of paragraph (g), and paragraph (h), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.10–15 Gas turbine installations.

(a) *Standards.* The design, construction, workmanship and tests of gas turbines and their associated machinery shall be at least equivalent to the standards of the ABS Marine Vessel Rules (incorporated by reference, see § 58.03–1).

* * * * *

■ 253. Revise § 58.16–1(c) to read as follows:

§ 58.16–1 Scope.

* * * * *

(c) Except as provided by § 58.16–7(b), all component parts of the system, except cylinders, appliances, and low-pressure tubing, must be designed to withstand a pressure of 500 pounds per square inch without failure.

■ 254. Revise § 58.16–5 to read as follows:

§ 58.16–5 Definition.

For the purpose of this subpart the term ''liquefied petroleum gas'' means any liquefied flammable gas which is composed predominantly of hydrocarbons or mixtures of hydrocarbons, such as propane, propylene, butane, butylene, or butadiene, and which has a Reid vapor pressure exceeding 40 pounds per square inch absolute at 100 °F as determined by ASTM D323 (incorporated by reference, see § 58.03–1).

■ 255. Revise § 58.16–7(b) to read as follows:

§ 58.16–7 Use of liquefied petroleum gas.

* * * * *

(b) Cooking equipment using liquefied petroleum gas on vessels of less than 100 gross tons that carry passengers for hire must meet the requirements of 46 CFR 25.45–2 or 46 CFR part 184, as applicable.

* * * * *

■ 256. Revise § 58.16–10 to read as follows:

§ 58.16–10 Approvals.

(a) *Gas appliances.*

(1) All gas-consuming appliances used for cooking and heating must be tested, listed and labeled by an acceptable laboratory, such as:

(i) The American Gas Association Testing Laboratories.

(ii) Underwriters' Laboratories, Inc.

(2) Continuous-burning pilot flames are prohibited for use on gas appliances when installed below the weather deck.

(3) Printed instructions for proper installation, operation, and maintenance of each gas-consuming appliance must be furnished by the manufacturer.

(b) *Cylinders.*

(1) Cylinders in which liquefied petroleum gas is stored and handled must be constructed, tested, marked, maintained, and retested in accordance with 49 CFR part 178.

(2) All liquefied petroleum gas cylinders in service must bear a test date marking indicating that they have been retested in accordance with the regulations of the Department of Transportation.

(3) Regardless of the date of the previous test, a cylinder must be rejected for further service when it leaks; when it is weakened appreciably by corrosion, denting, bulging or other evidence of rough usage; when it has lost more than 5 percent of its tare weight; or when it has been involved in a fire.

(c) *Safety-relief devices.* All required safety-relief devices must be accepted as to type, size, pressure setting, and location by the Commandant (CG–ENG) as being in accordance with 49 CFR part 178.

(d) *Valves, regulators, and vaporizers.* All component parts of the system, other than cylinders and low-pressure distribution tubing between regulators and appliances, must be tested and approved by and bear the label of the Underwriters Laboratories, Inc., or other recognized testing laboratory.

(e) *Plan approval.* Drawings in triplicate, showing the location and installation of all piping, gas-consuming appliances, cylinders, and other component parts of the system must be submitted for approval.

§ 58.16–15 [Amended]

■ 257. In § 58.16–15, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 258. Amend § 58.16–16 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Revise paragraphs (b) and (c).

The revision reads as follows:

§ 58.16–16 Reducing regulators.

* * * * *

(b) The low-pressure side of all regulators must be protected against

excessive pressure by means of a suitable relief valve which must be integral with the regulator. The relief valve must be set to start to discharge at a pressure not less than two times and not more than three times the delivery pressure.

(c) All reducing regulators must be fitted with a pressure gage located on the high-pressure side of the regulator.

■ 259. Amend § 58.16–17 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';

■ b. Revise paragraph (b); and

■ c. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.16–17 Piping and fittings.

* * * * *

(b) All high-pressure tubing between the cylinders and the regulators must have a minimum wall thickness of 0.049 inch. All low-pressure tubing between the regulator and appliances must have a minimum wall thickness of 0.032 inch.

* * * * *

■ 260. Amend § 58.16–18 as follows:

■ a. In paragraph (a)(1), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraph (a)(2); and

■ c. In paragraphs (a)(3) through (5), (b)(2), (c), and (d), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.16–18 Installation.

(a) * * *

(2) Cylinders, regulating and safety devices must be securely fastened and supported within the metal enclosure. The cylinders and high-pressure equipment must be so mounted as to be readily accessible and capable of easy removal for refilling and inspection. The stowage of high-pressure equipment in the housing must be such that the cylinder valves can be readily operated and the pressure gage dial is easily visible. Where possible cylinders must be mounted in an upright position.

* * * * *

§ 58.16–19 [Amended]

■ 261. In § 58.16–19, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 58.16–20 [Amended]

■ 262. In § 58.16–20, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 58.16–25 [Amended]

■ 263. Amend § 58.16–25 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Reserve paragraph (b).

■ 264. Amend § 58.16–30 as follows:

■ a. In paragraphs (a) through (g), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Revise paragraph (k).

The revision reads as follows:

§ 58.16–30 Operating instructions.

* * * * *

(k) Report any presence of gas odor.

■ 265. Revise § 58.16–35 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraphs (b) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.16–35 Markings.

(a) The outside of the cylinder enclosure housing liquefied petroleum gas cylinders, valves and regulators must be marked as follows:

Liquefied Petroleum Gas
Keep Open Fires Away.

* * * * *

§ 58.20–1 [Amended]

■ 266. In § 58.20–1(b), remove the word ''shall'' and add, in its place, the word ''do''.

■ 267. Amend § 58.20–5 by revising paragraph (a) to read as follows:

§ 58.20–5 Design.

(a) Refrigeration machinery may be accepted for installation provided the design, material, and fabrication comply with the applicable requirements of the ABS Marine Vessel Rules (incorporated by reference, see § 58.03–1). The minimum pressures for design of all components must be those listed for piping in Table 501.2.4 of ASME B31.5 (incorporated by reference; see § 58.03–1). In no case may pressure components be designed for a pressure less than that for which the safety devices of the system are set. Pressure vessels must be designed in accordance with part 54 of this subchapter.

* * * * *

■ 268. Amend § 58.20–10 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Revise paragraph (b).

The revision reads as follows:

§ 58.20–10 Pressure relieving devices.

* * * * *

(b) Relief valves fitted on the high-pressure side may discharge to the low-pressure side before relieving to atmosphere. When relieving to atmosphere, a relief valve must be fitted in the atmospheric discharge connection from the receivers and condensers. The relief valve from the receivers may relieve to the condenser, which in turn may relieve either to the low side or to atmosphere. It must be set to relieve at a pressure not greater than the maximum allowable working pressure. A rupture disk may be fitted in series with the relief valve, provided the bursting pressure of the rupture disk is not in excess of the relief valve set pressure. Where a rupture disk is fitted on the downstream side of the relief valve, the relief valve must be of the type not affected by back pressure.

■ 269. Amend § 58.20–15 as follows:

■ a. Revise the first sentence of paragraph (a); and

■ b. In paragraphs (b) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.20–15 Installation of refrigerating machinery.

(a) Where refrigerating machines are installed in which anhydrous ammonia is used as a refrigerant, such machines must be located in a well-ventilated, isolated compartment, preferably on the deck, but in no case is it permissible to install such machines in the engineroom space unless the arrangement is such as to eliminate any hazard from gas escaping to the engineroom. * * *

* * * * *

■ 270. Amend § 58.20–20 as follows:

■ a. In paragraph (a), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ b. Revise paragraph (b); and

■ c. In paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.20–20 Refrigeration piping.

* * * * *

(b) Piping systems must be designed in accordance with ASME B31.5 (incorporated by reference; see § 58.03–1). Piping used for cargo reliquefaction systems must also comply with the applicable requirements found in low temperature piping, § 56.50–105 of this subchapter.

* * * * *

■ 271. Amend § 58.20–25 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Revise paragraph (b).

The revision reads as follows:

§ 58.20–25 Tests.

* * * * *

(b) No pneumatic tests in refrigeration systems aboard ships must be made at

pressures exceeding the design pressure of the part of the system being tested. Pneumatic tests may be made with the refrigerant in the system or if the refrigerant has been removed, oil-pumped dry nitrogen or bone-dry carbon dioxide with a detectable amount of the refrigerant added, should be used as a testing medium. (Carbon dioxide should not be used to leak test an ammonia system.) In no case should air, oxygen, any flammable gas or any flammable mixture of gases be used for testing.

■ 272. Amend § 58.25–5 as follows:
■ a. In paragraph (a):
■ i. Revise the definition for ''Auxiliary steering gear'';
■ ii. Add a definition for ''Control system'';
■ iii. In the definition for ''Power actuating system'', redesignate paragraphs (1) through (3) as paragraphs (i) through (iii); and
■ iv. In the definition for ''Steering-gear power'', revise the definition heading and introductory text and redesignate paragraphs (1) through (3) as paragraphs (i) through (iii); and
■ b. In paragraph (d):
■ i. Remove the word ''Steel'' and add, in its place, the word ''Marine''; and
■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

The revisions and addition read as follows:

§ 58.25–5 General.

(a) * * *

Auxiliary steering gear means the equipment, other than any part of the main steering gear, necessary to steer the vessel in case of failure of the main steering gear, not including a tiller, quadrant, or other component serving the same purpose.

Control system means the equipment by which orders for rudder movement are transmitted from the pilothouse to the steering-gear power units. A control system for steering gear includes, but is not limited to, one or more—

(i) Transmitters;

(ii) Receivers;

(iii) Feedback devices;

(iv) Hydraulic servo-control pumps, with associated motors and motor controllers;

(v) Differential units, hunting gear, and similar devices;

(vi) All gearing, piping, shafting, cables, circuitry, and ancillary devices for controlling the output of power units; and

(vii) Means of bringing steering-gear power units into operation.

* * * * *

Steering-gear power unit means:

* * * * *

■ 273. Amend § 58.25–10 as follows:
■ a. Redesignate paragraphs (a) through (f) as paragraphs (b) through (g);
■ b. Add new paragraph (a);
■ c. Revise newly redesignated paragraph (b);
■ d. In newly redesignated paragraph (c)(3) remove the text ''(b)(2)'' and add, in its place, the text ''(c)(2)'';
■ e. In newly redesignated paragraph (d)(3), remove the text ''(c)(2)'' and add, in its place, the text ''(d)(2)'';
■ f. In newly redesignated paragraphs (f)(1) and (2), remove the text ''(b)(2)'' and add, in its place, the text ''(c)(2)'';
■ g. In newly redesignated paragraph (f)(4), remove the text ''(e)(3)'' \and add, in its place, the text ''(f)(3)'';
■ h. Designate the note as note 1 to paragraph (f)(4); and
■ i. In newly redesignated paragraph (g), remove the text ''(e)'' and add, in its place, the text ''(f)''.

The addition and revision read as follows:

§ 58.25–10 Main and auxiliary steering gear.

(a) Vessels accepted by a recognized classification society as meeting class Rules for steering gear, and SOLAS Chapter II–1, Regulations 29 and 30 (incorporated by reference; see § 58.03–1) are considered to meet the requirements of this Subpart.

(b) Power-operated main and auxiliary steering gear must be separate and independent systems. Other arrangements of steering gear will be acceptable if the Commanding Officer, Marine Safety Center, determines that they are equivalent to the requirements of, this subpart.

* * * * *

§ 58.25–20 [Amended]

■ 274. Amend § 58.25–20 as follows:
■ a. In paragraph (a), remove the text ''of this part'';
■ b. In paragraph (b), remove the text ''in accordance with § 56.07–10(b) of this subchapter''; and
■ c. In paragraph (c)(2), remove the text ''that complies with § 56.50–90 of this subchapter''.

§ 58.25–25 [Amended]

■ 275. Amend § 58.25–25 as follows:
■ a. Remove paragraph (a);
■ b. Redesignate paragraphs (b) through (d) as paragraphs (a) through (c);
■ c. Remove paragraph (e) and the Note following paragraph (e); and
■ d. Redesignate paragraph (f) as paragraph (d).

§ 58.25–40 [Amended]

■ 276. Remove the note immediately following paragraph (a)(3).

■ 277. Revise § 58.25–60 to read as follows:

§ 58.25–60 Non-duplicated hydraulic rudder actuators.

Non-duplicated hydraulic rudder actuators may be installed in the steering gear control systems on vessels of less than 100,000 deadweight tons. These actuators must meet IMO A.467(XII) (incorporated by reference, see § 58.03–1) and be acceptable to the Commanding Officer, Marine Safety Center.

§ 58.25–65 [Amended]

■ 278. In § 58.25–65, amend the introductory text to paragraph (a), by inserting the word ''main'' between the word ''vessel's'' and the word ''service''.

§ 58.25–70 [Amended]

■ 279. Amend § 58.25–70(h)(1) by removing the text ''; and'' and add, in its place, the text ''.''.
■ 280. Revise § 58.25–75 to read as follows:

§ 58.25–75 Materials.

Materials used for the mechanical or hydraulic transmission of power to the rudder stock must have an elongation of at least 15% in 5 centimeters (2 inches).

§ 58.25–85 [Amended]

■ 281. Amend § 58.25–85 as follows:
■ a. In paragraph (c)(1), remove the text ''not more than 45 seconds'';
■ b. In paragraph (c)(2)(ii), remove the second and third sentences;
■ c. In paragraph (d)(2), remove the text ''not more than 45 seconds''; and
■ d. Remove paragraph (g) and the note immediately following paragraph (g).
■ 282. Amend § 58.30–1 as follows:
■ a. Revise the introductory text to paragraph (a) and paragraph (a)(4);
■ b. In paragraph (a)(5), remove the words ''main or''; and
■ c. In paragraph (a)(10), remove the second sentence.

The revisions read as follows:

§ 58.30–1 Scope.

(a) This subpart contains requirements for fluid power transmission and control systems and appurtenances. Except as otherwise provided for in this section, these requirements are applicable to fluid power and control systems where installed for the following equipment:

* * * * *

(4) Automatic propulsion boiler control systems.

* * * * *

§ 58.30–5 [Amended]

■ 283. Amend § 58.30–5 as follows:
■ a. In paragraph (a), remove the words ''and should also consider the rate of

pressure rise caused by hydraulic shock''; and

■ b. In paragraphs (b) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 284. Amend § 58.30–10 as follows:

■ a. In paragraph (b):

■ i. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ ii. Remove the text ''D 92'' and add, in its place, the text ''D92'';

■ b. In paragraphs (c) and (d), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ c. Revise paragraph (e).

The revision reads as follows:

§ 58.30–10 Hydraulic fluid.

* * * * *

(e) The recommendations of the system component manufacturers must be considered in the selection and use of hydraulic fluid.

■ 285. Amend § 58.30–15 as follows:

■ a. Revise paragraph (b);

■ b. In paragraph (c):

■ i. Remove the word ''shall'' and add, in its place, the word ''must'';

■ ii. Remove the text ''46 CFR 58.03–1'' wherever it appears and add, in its place, the text ''§ 58.03–1''; and

■ iii. Remove the text ''A 193'' and add, in its place, the text ''A193'';

■ c. Revise paragraph (d); and

■ d. In paragraphs (e) and (f), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revisions read as follows:

§ 58.30–15 Pipe, tubing, valves, fittings, pumps, and motors.

* * * * *

(b) Materials used in the manufacture of tubing, pipes, valves, flanges, and fittings must be selected from those specifications that appear in table 1 to § 56.60–1 or table § 56.60–2; or they may be selected from the material specifications of Section I or Section VIII of the ASME BPVC (both incorporated by reference; see § 58.03–1). Materials designated by other specifications must be evaluated on the basis of physical and chemical properties. To assure these properties, the specifications must specify and require such physical and chemical testing as considered necessary by the Commandant. All tubing and pipe materials must be suitable for handling the hydraulic fluid used and must be of such chemical and physical properties as to remain ductile at the lowest operating temperature.

* * * * *

(d) The maximum allowable working pressure and minimum thickness must be calculated as required by § 56.07–10(e) of this subchapter.

* * * * *

§ 58.30–20 [Amended]

■ 286. In § 58.30–20, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 287. Amend § 58.30–25 as follows:

■ a. Revise the last sentence of paragraph (a); and

■ b. In paragraphs (b) and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.30–25 Accumulators.

(a) * * * Accumulators must meet the applicable requirements in part 54 of this subchapter.

* * * * *

§ 58.30–30 [Amended]

■ 288. In § 58.30–30, amend paragraphs (d) and (e) by removing the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 289. Amend § 58.30–35 as follows:

■ a. In paragraphs (a), (b), and (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ b. Revise paragraph (d).

The revision reads as follows:

§ 58.30–35 Testing.

* * * * *

(d) Fluid power and control systems must be purged with an inert gas or with the working fluid and all trapped air bled from the system prior to any shipboard testing.

* * * * *

§ 58.30–40 [Amended]

■ 290. Amend § 58.30–40 as follows:

■ a. Remove paragraph (a)(5) and redesignate paragraph (a)(6) as (a)(5); and

■ b. Reserve paragraph (b).

§ 58.30–50 [Amended]

■ 291. In § 58.30–50, reserve paragraph (b).

■ 292. Amend § 58.50–1 as follows:

■ a. Revise paragraph (b); and

■ b. In paragraph (c), remove the word ''shall'' and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.50–1 General requirements.

* * * * *

(b) Passenger vessels exceeding 100 gross tons constructed on or after July 1, 1935, and all emergency systems converted on or after July 1, 1935, must use fuel which has a flashpoint exceeding 110 °F. for internal combustion engine units. Such vessels must carry a sufficient quantity of fuel to supply the emergency electrical system. Refer to § 112.05–5 of subchapter J (Electrical Engineering), of this chapter.

* * * * *

■ 293. Amend § 58.50–5 as follows:

■ a. In paragraph (a)(2), remove the text ''Table 1 to § 58.50–5(a)'' and add, in its place, the text ''table 1 to § 58.50–5(a)(4)'';

■ b. Redesignate table 1 to § 58.50–5(a) as table 1 to § 58.50–5(a)(4);

■ c. In newly redesignated table 1 to § 58.50–5(a)(4):

■ i. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ ii. Remove the text ''B 209'' and add, in its place, the text ''B209'';

■ iii. Remove the text ''B 127'' and add, in its place, the text ''B127'';

■ iv. Remove the text ''B 122 and add, in its place, the text ''B122'';

■ v. Remove the text ''B 152'' and add, in its place, the text ''B152''; and

■ vi. Remove the text ''B 96'' and add, in its place, the text ''B96'';

■ d. Revise paragraph (a)(6); and

■ e. In § 58.50–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 58.50–5 Gasoline fuel tanks.

(a) * * *

(6) *Fittings.* Nozzles, flanges, or other fittings for pipe connections must be welded or brazed to the tank. The tank openings in way of pipe connections must be properly reinforced where necessary. Where fuel level gages are used, the flange to which gage fittings are attached must be welded or brazed to the tank. Tubular gage glasses or trycocks must not be fitted to the tanks.

* * * * *

§ 58.50–10 [Amended]

■ 294. Amend § 58.50–10 as follows:

■ a. In paragraph (a)(2), remove the text ''Table 1 to § 58.50–10(a)'' and add, in its place, the text ''table 1 to § 58.50–10(a)(3)'';

■ b. Redesignate table 1 to § 58.50–10(a) as table 1 to § 58.50–10(a)(3);

■ c. In newly redesignated table 1 to § 58.50–10(a)(3):

■ i. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ ii. Remove the text ''B 209'' and add, in its place, the text ''B209''; and

■ iii. Remove the text ''B 127'' and add, in its place, the text ''B127''; and

■ d. In § 58.50–10, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 295. Revise § 58.50–15(a) to read as follows:

§ 58.50–15 Alternate material for construction of independent fuel tanks.

(a) Materials other than those specifically listed in table 1 to 58.50–5(a)(4) and in table 1 to 58.50–10(a)(3) may be used for fuel tank construction only if the tank design meets material and testing requirements approved by the Commandant (CG–ENG). Approved testing may be accomplished by any acceptable laboratory, or may be done by the fabricator if witnessed by a marine inspector.

* * * * *

■ 296. Revise § 58.60–7 to read as follows:

§ 58.60–7 Industrial systems: Piping.

The piping for industrial systems under this subpart must meet ASME B31.3 (incorporated by reference, see § 58.03–1), except that blow out preventor control systems must also meet API STD 53 (incorporated by reference, see § 58.03–1).

PART 59—REPAIRS TO BOILERS, PRESSURE VESSELS AND APPURTENANCES

■ 297. The authority citation for part 59 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 227; Department of Homeland Security Delegation No. 0170.1.

■ 298. Revise § 59.01–2 to read as follows:

§ 59.01–2 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(b) *American Society of Mechanical Engineers* (*ASME*), Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section I, Rules for Construction of Power Boilers, 2019 (''Section I of the ASME BPVC''); IBR approved for § 59.10–5.

(2) ASME Boiler and Pressure Vessel Code, Section VII, Recommended Guidelines for the Care of Power Boilers, 2019 (''Section VII of the ASME BPVC''); IBR approved for § 59.01–5.

(3) ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Rules for Construction of Pressure Vessels (2019), (''Section VIII of the ASME BPVC''); IBR approved for §§ 59.10–5, 59.10–10.

(4) ASME Boiler and Pressure Vessel Code, Section IX, Welding, Brazing, and Fusing Qualifications (2019), (''Section IX of the ASME BPVC''); IBR approved for § 59.10–5.

§ 59.01–5 [Amended]

■ 299. Amend § 59.01–5 as follows:

■ a. In paragraphs (a), (b), (c), and (d), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ b. In paragraph (e):

■ i. Remove the words ''Boiler and Pressure Vessel Code'' and add, in their place, the text ''BPVC''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

■ 300. Amend § 59.10–1 by revising paragraphs (b), (c), and (d) to read as follows:

§ 59.10–1 Scope.

* * * * *

(b) No repairs by welding must be made except temporary emergency repairs without prior approval of the Officer in Charge, Marine Inspection. Emergency repairs must be replaced with permanent repairs meeting the requirements of this subchapter when the vessel returns to a port in which an Officer in Charge, Marine Inspection, is located.

(c) Repair welding of power boilers, not meeting the requirements of subpart 52.05 of this subchapter, is prohibited.

* * * * *

(d) Only welded repairs as specified in this subchapter are permitted on boilers and pressure vessels. The welding repairs allowed by this subpart apply only to boilers and pressure vessels fabricated of carbon steel. Welding repairs to boilers and pressure vessels fabricated of alloy steel will be given special consideration by the Commandant. Such other method of repairs by means of welding not covered in this subchapter must be referred to the Commandant.

■ 301. Amend § 59.10–5 as follows:

■ a. In paragraph (d), remove the text ''plain, circular, or Adamson ring or similar type'';

■ b. In paragraph (f), remove the words ''and is approved by the Commandant'';

■ c. In paragraph (g), remove the words ''if the repair is approved'';

■ d. Revise paragraphs (h), (i), (j), and (k); and

■ e. In paragraph (l), remove the word ''shall'' and add, in its place, the word ''must''.

The revisions read as follows:

§ 59.10–5 Cracks.

* * * * *

(h) All cracks permitted to be repaired under this subpart must be excavated to sound metal by grinding, flame or arc gouging or chipping out the defective metal to form a clean welding groove. Either a V groove or U groove wherein complete penetration of the weld metal is secured may be used. After excavation is completed and prior to welding, the excavated area must be examined by magnetic particle, dye penetrant, or other acceptable test method. When the reverse side of the weld is accessible the root of the weld must be chipped or ground out to insure a clean surface of the originally deposited metal and the resultant groove welded to obtain a sound weld having complete penetration. When the weld cannot be back chipped because the reverse side is inaccessible, a backing strip or other approved means of assuring full penetration must be employed.

(i) During welding of cracks a preheat must be maintained by controlled temperatures. The degree of preheat must be determined by the rules listed in accordance with the materials P-number groupings of PW–38, Section I of the ASME BPVC, appendix R, Section VIII of the ASME BPVC, and Appendix D, Section IX of the ASME BPVC (all incorporated by reference; see § 59.01–2). For thicknesses exceeding three-fourths inch, suitable U grooves should be employed. A welding sequence must be used so as to equalize welding stresses.

(j) Postweld heat treatment of repaired cracks must be performed in accordance with the rules specified in PW–39, Section I of the ASME BPVC and UW–40, Section VIII of the ASME BPVC for boilers and pressure vessels respectively.

(k) Welded repairs of cracks must be nondestructively tested in accordance with the rules specified in PW–40, Section I of the ASME BPVC, and UW–51, Section VIII of the ASME BPVC for

boilers and pressure vessels respectively.

* * * * *

■ 302. Amend § 59.10–10 as follows:

■ a. In paragraphs (a)(1), (2), and (3), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ b. Revise paragraphs (d), (e), and (f).

The revisions read as follows:

§ 59.10–10 Corroded surfaces.

* * * * *

(d) Where stayed sheets have corroded to a depth not exceeding 40 percent of their original thickness, they may be reinforced or built up by welding. Where the staybolts are fitted with riveted heads, the staybolts in the reinforced area must be renewed, but where the staybolts are fitted with nuts, the nuts may be removed and after reinforcing has been applied, collars may be welded around the staybolts in lieu of the nuts. Such reinforced areas must not exceed 400 square inches nor more than 30 inches in one direction. Two such areas in any one plate may be reinforced: Provided, that the distance between the reinforced surfaces is not less than 30 inches.

(e) When the corroded portion of a staybolted surface exceeds 400 square inches, it is permissible to make repairs by cutting out the defective portion and replacing it with a new plate, the edges of the new plate to be welded in position. In such cases, new staybolts must be fitted, and where welding is performed through a line of staybolts, welded collars must be used to attach the staybolts.

(f) Eroded seams of welded pressure vessels may be repaired by rewelding the wasted portion. The wasted section of the seam must be excavated sufficiently by grinding, flame or arc gouging or chipping to ensure proper weld penetration. Rewelded seams must be nondestructively tested in accordance with Section VIII of the ASME BPVC (incorporated by reference, see § 59.01–2).

§ 59.10–15 [Amended]

■ 303. In § 59.10–15, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 304. Amend § 59.10–20 as follows:

■ a. Revise the first two sentences of paragraph (a); and

■ b. Remove the last sentence of paragraph (b).

The revision reads as follows:

§ 59.10–20 Patches in shells and tube sheets.

(a) Unreinforced openings in the shells or drums of boilers or pressure vessels may be closed by the use of a patch or plate inside the drum or shell and sealed against leakage by welding. Such plates must have a diameter of at least 2 inches larger than the diameter of the hole and must have a thickness equal to the thickness of the plate to which it is attached. * * *

* * * * *

§ 59.10–25 [Amended]

■ 305. In § 59.10–25, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 306. Revise § 59.10–30 to read as follows:

§ 59.10–30 Seal welding.

Where leaks occur in riveted joints or connections, they must be carefully investigated to determine the cause. Such leaks may be made tight by seal welding the edge, if accepted by the Officer in Charge, Marine Inspection.

■ 307. Amend § 59.10–35 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraphs (b), (c), and (d), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 59.10–35 Wrapper plates and back heads.

* * * * *

(a) Wrapper plates or back heads must be cut between two rows of staybolts or on a line of staybolts where the thickness is approximately the same as the original construction. If welding is employed on a line of staybolts, the staybolts must be fitted with a welded collar.

* * * * *

■ 308. Amend § 59.15–1 as follows:

■ a. In the introductory text to paragraph (a), remove the word ''shall'' and add, in its place, the word ''must'';

■ b. Revise paragraphs (a)(1) and (2);

■ c. Remove the last sentence of paragraph (b);

■ d. In paragraph (c), remove the text ''and the length of the distorted area is not more than three corrugations, or, if the maximum distortion does not exceed three-fourths inch for a length greater than three corrugations of distorted area'';

■ e. In paragraph (d), remove the word ''shall'' and add, in its place, the word ''must'';

■ f. Revise paragraph (e); and

■ g. Redesignate figure 59.15–1 as figure § 59.15–1.

The revisions read as follows:

§ 59.15–1 Furnace repairs.

(a) * * *

(1) The furnace must be forced back to a true circular shape, and the Officer in Charge, Marine Inspection, may require strongbacks or other acceptable means of support to hold the furnace; or,

(2) The furnace must be adequately stayed as determined by the Officer in Charge, Marine Inspection.

* * * * *

(e) Furnace crowns which have become distorted, not in excess of the limitations provided in paragraph (c) of this section, may be repaired by forcing back the distorted section to as nearly a true circle as possible and reinforcing the same by means of a ring, arc- or gas-welded to the distorted corrugation as shown in figure § 59.15–1, the welding to be done by welders and welding processors qualified in accordance with part 57 of this subchapter.

* * * * *

§ 59.15–5 [Amended]

■ 309. In § 59.15–5(b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 59.15–10 [Amended]

■ 310. Amend § 59.15–10 as follows:

■ a. In paragraph (a), remove the words ''shall be the duty of the chief engineer in charge'' and add, in their place, the words ''is the duty of the chief engineer''; and

■ b. In paragraph (c), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 59.20–1 [Amended]

■ 311. In § 59.20–1, remove the word ''shall'' and add, in its place, the word ''must''.

PART 61—PERIODIC TESTS AND INSPECTIONS

■ 312. The authority citation for part 61 continues to read as follows:

Authority: 43 U.S.C. 1333; 46 U.S.C. 2103, 3306, 3307, 3703; sec. 617, Pub. L. 111–281, 124 Stat. 2905; E.O. 12234, 45 FR 58801, 3 CFR 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

§ 61.01–1 [Amended]

■ 313. In § 61.01–1, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

■ 314. Revise § 61.03–1 to read as follows:

§ 61.03–1 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and

the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(b) *ASTM International,* 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, 877–909–2786, *www.astm.org.*

(1) ASTM D665–19, Standard Test Method for Rust-Preventing Characteristics of Inhibited Mineral Oil in the Presence of Water (''ASTM D665''); IBR approved for § 61.20–17.

(2) [Reserved]

§ 61.05–1 [Amended]

■ 315. In § 61.05–1, remove the text ''part 52'' and add, in its place, the text ''part 52 of this subchapter.''

■ 316. Amend § 61.05–5 as follows:

■ a. Revise paragraph (a); and

■ b. In paragraph (b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

The revision reads as follows:

§ 61.05–5 Preparation of boilers for inspection and test.

(a) For internal inspection, manhole and handhold plates, and washout plugs must be removed as required by the marine inspector and the furnace and combustion chambers must be thoroughly cooled and cleaned.

* * * * *

■ 317. Amend § 61.05–10 as follows:

■ a. Revise paragraph (a);

■ b. In paragraphs (b), (c), (d), and (e), remove the word ''shall'' wherever it appears and add, in its place, the word ''must'';

■ c. Revise paragraphs (f) and (g); and

■ d. Redesignate table 61.05–10 as table § 61.05–10.

The revisions read as follows:

§ 61.05–10 Boilers in service.

(a) Each boiler, including superheater, reheater, economizer, auxiliary boiler, low-pressure heating boiler, and unfired steam boiler, must be available for examination by the marine inspector at intervals specified by table § *61.05–10,* and more often if necessary, to determine that the complete unit is in a safe and satisfactory condition.

* * * * *

(f) The marine inspector may require any boiler to be drilled or gaged to determine actual thickness any time its safety is in doubt. At the first inspection for certification after a firetube or flue boiler has been installed for 10 years, it must be gaged to determine the extent of deterioration. Thickness will be measured at or near the waterline, at the bottom and at such other places deemed necessary by the marine inspector. Examination may be by drilling or a nondestructive means acceptable to the marine inspector. Prior to the use of a nondestructive method of examination, the user must demonstrate to the marine inspector that results having an accuracy within plus or minus 5 percent are consistently obtainable.

(g) If the thickness is found to be less than the original thickness upon which the maximum allowable working pressure (MAWP) was based, the MAWP must be recalculated. The thickness of the thinnest measured portion must be used in this calculation. Either the design formulas given in this subchapter or the ones in effect when the boiler was contracted for or built may normally be used in this recalculation. In no case will an increase in the pressure allowed be made.

* * * * *

§ 61.05–15 [Amended]

■ 318. Amend § 61.05–15 as follows:

■ a. Remove the word ''shall'' wherever it appears and add, in its place, the word ''must''; and

■ b. Remove the text ''Table 61.05–10'' wherever it appears and add, in its place, the text ''table § 61.05–10''.

§ 61.05–20 [Amended]

■ 319. In § 61.05–20, remove the word ''shall'' and add, in its place, the word ''must''.

■ 320. Amend § 61.10–5 as follows:

■ a. Revise paragraph (g); and

■ b. In paragraph (h)(3), remove the text ''(Mobile Offshore Drilling Units),'' and add, in its place, the text ''(Mobile Offshore Drilling Units), all of this chapter,''.

The revision reads as follows:

§ 61.10–5 Pressure vessels in service.

* * * * *

(g) *Bulk storage tanks.* (1) Each bulk storage tank containing refrigerated liquefied CO_2 for use aboard a vessel as a fire-extinguishing agent must be subjected to a hydrostatic test of 1.5 times the maximum allowable working pressure in the 10th year of the installation and at 10-year intervals thereafter. After the test, the tank should be drained and an internal examination made. Parts of the jacket and lagging designated by the marine inspector must be removed at the time of the test so the marine inspector may determine the condition of the tank.

(2) In lieu of the requirements contained in paragraph (g)(1) of this section, in the 10th year of installation and at 10-year intervals thereafter, each bulk storage tank containing refrigerated liquefied CO_2 for use aboard a vessel as a fire-extinguishing agent which contains a manhole or means to enter, may undergo an internal examination by a marine inspector. Bulk storage tanks which have been satisfactorily examined internally by a marine inspector and in which no defects have been found which impair the safety of the pressure vessel will not require a hydrostatic test. When a defect is found during the internal examination that, in the judgment of the marine inspector, may affect the safety of the pressure vessel, the pressure vessel must be hydrostatically tested at a pressure of 1.5 times the maximum allowable working pressure, unless alternative means, acceptable to the Officer In Charge, Marine Inspection, are used to ensure the safe operation of the pressure vessel.

* * * * *

§ 61.15–1 [Amended]

■ 321. In § 61.15–1, remove the word ''shall'' and add, in its place, the word ''must''.

§ 61.15–5 [Amended]

■ 322. In § 61.15–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 61.15–10 [Amended]

■ 323. In § 61.15–10(a), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 61.15–15 [Amended]

■ 324. Amend § 61.15–15 as follows:

■ a. In paragraph (a), remove the word ''shall'' and add, in its place, the word ''must''; and

■ b. Reserve paragraph (b).

§ 61.20–1 [Amended]

■ 325. In § 61.20–1(b), remove the word ''shall'' and add, in its place, the word ''must''.

§ 61.20–3 [Amended]

■ 326. In § 61.20–3, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 61.20–5 [Amended]

■ 327. In § 61.20–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 61.20–17 [Amended]

■ 328. Amend § 61.20–17 as follows:
■ a. In paragraph (a), remove the text ''D 665'' and add, in its place, the text ''D665''; and
■ b. In paragraph (b), remove the text ''5 year'' and add, in its place, the text ''5-year''.

§ 61.20–23 [Amended]

■ 329. In § 61.10–23(c), remove the word ''shall'' and add, in its place, the word ''must''.

§ 61.30–5 [Amended]

■ 330. In § 61.30–5, remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

§ 61.30–20 [Amended]

■ 331. In § 61.30–20, redesignate the note following § 61.30–20 as note 1 to § 61.30–20.

§ 61.35–3 [Amended]

■ 332. In § 61.35–3, reserve paragraph (b).

§ 61.40–1 [Amended]

■ 333. In § 61.40–1(b), remove the word ''shall'' wherever it appears and add, in its place, the word ''must''.

PART 62—VITAL SYSTEM AUTOMATION

■ 334. The authority citation for part 62 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703, 8105; sec. 617, Pub. L. 111–281, 124 Stat. 2905; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

§ 62.01–3 [Amended]

■ 335. In § 62.01–3, reserve paragraph (b).

§ 62.01–5 [Amended]

■ 336. In § 62.01–5(d), remove the text ''paragraph 62.50–20(a)(3)(ii)'' and add, in its place, the text ''paragraph (a)(3)(ii)''.
■ 337. Revise § 62.05–1 to read as follows:

§ 62.05–1 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(b) *American Bureau of Shipping (ABS),* 1701 City Plaza Drive, Spring, TX 77389; 1–281–877–6000; *www.eagle.org.*

(1) Rules for Building and Classing Marine Vessels, Part 4 Vessel Systems and Machinery (2020) (''ABS Marine Vessel Rules''); IBR approved for §§ 62.25–30, 62.35–5, 62.35–35, 62.35–40, 62.35–50, 62.50–30.

(2) [Reserved]

§ 62.10–1 [Amended]

■ 338. Amend § 62.10–1 as follows:
■ a. Redesignate the introductory text of paragraph (a) as the introductory text of § 62.10–1;
■ b. In the definition of ''Failsafe'', remove the text ''Table 62.10–1(a)'' and add, in its place, the text ''table 1 to § 62.10–1'';
■ c. Redesignate table 62.10–1(a) as table 1 to § 62.10–1;
■ d. In newly redesignated table 1 to § 62.10–1, remove the text ''56.50–60(d)'' and add, in its place, ''56.50–60(d) of this subchapter''; and
■ e. In the definition of ''Vital system or equipment'', remove the text ''58.01–35'' and add, in its place, ''58.01–35 of this subchapter''.

§ 62.15–1 [Amended]

■ 339. In § 62.15–1, reserve paragraph (b).

§ 62.20–1 [Amended]

■ 340. In § 62.20–1, reserve paragraph (b).

§ 62.20–5 [Amended]

■ 341. In § 62.20–5(a), remove the word ''shall'' and add, in its place, the word ''must''.

§ 62.25–15 [Amended]

■ 342. Amend § 62.25–15 as follows:
■ a. In paragraph (a):
■ i. Add the word ''and'' between the word ''safety'' and the word ''trip''; and
■ ii. Remove the text ''Table 62.35–50'' and add, in its place, the text ''table § 62.35–50''; and
■ b. Designate the note immediately following paragraph (a) as note 1 to paragraph (a).

§ 62.25–20 [Amended]

■ 343. Amend § 62.25–20 as follows:
■ a. Designate the note immediately following paragraph (b)(1) as note 1 to paragraph (b)(1);
■ b. Designate the note immediately following paragraph (b)(3) as note 2 to paragraph (b)(3);
■ c. In newly designated note 2 to paragraph (b)(3), remove the text ''Table 62.35–50 and subparts 58.01, 56.50, and 112.45'' and add, in its place, the text ''table § 62.35–50 and subparts 58.01, 56.50, and 112.45 of this chapter'';
■ d. In paragraph (b)(5), remove the text ''Table 62.35–50'' and add, in its place, the text ''table § 62.35–50'';
■ e. In paragraph (d)(1)(ii), remove the text ''Halon 1301/''; and
■ f. Designate the note immediately following paragraph (d)(4) as note 3 to paragraph (d)(4).
■ 344. Revise § 62.25–25(d) to read as follows:

§ 62.25–25 Programmable systems and devices.

* * * * *

(d) All required manuals, records, and instructions for automatic or remote control or monitoring systems shall be readily available aboard the vessel.
■ 345. Revise § 62.25–30 to read as follows:

§ 62.25–30 Environmental design standards.

(a) All automation must be suitable for the marine environment and must be designed and constructed to operate indefinitely under the following conditions:

(1) Ship motion and vibration described in Table 1 of section 4–9–9 of the ABS Marine Vessel Rules (incorporated by reference; see § 62.05–1); note that inclination requirements for fire and flooding safety systems are described in 46 CFR 112.05–5(c).

(2) Ambient air temperatures described in Table 1 of part 4–9–9/3 of the ABS Marine Vessel Rules.

(3) Electrical voltage and frequency tolerances described in Table 1 of part 4–9–9 of the ABS Marine Vessel Rules.

(4) Relative humidity of 0 to 95% at 45 °C.

(5) Hydraulic and pneumatic pressure variations described in Table 1 of part 4–9–9 of the ABS Marine Vessel Rules.

Note 1 to paragraph (A): Considerations should include normal dynamic conditions that might exceed these values, such as switching, valve closure, power supply transfer, starting, and shutdown.

(b) Low voltage electronics must be designed with due consideration for static discharge, electromagnetic interference, voltage transients, fungal growth, and contact corrosion.

§ 62.35–1 [Amended]

■ 346. In § 62.35–1(a), remove the text ''Table 62.35–50'' and add, in its place, the text ''table § 62.35–50''.

■ 347. Amend § 62.35–5 as follows:

■ a. Designate the note immediately following paragraph (a) as note 1 to paragraph (a);

■ b. Revise paragraph (c)(2);

■ c. Remove the last sentence of paragraph (c)(3); and

■ d. In paragraph (d):

■ i. Remove the text ''4–9–2/5.11 of the ABS Steel'' and add, in its place, the text ''4–9–2/13.11 of the ABS Marine''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

The revision reads as follow:

§ 62.35–5 Remote propulsion-control systems.

* * * * *

(c) * * *

(2) On vessels propelled by steam turbines, the navigation bridge primary control system must include safety alarms for high and low boiler water levels and low steam pressure.

* * * * *

§ 62.35–10 [Amended]

■ 348. In § 62.35–10(b), remove the text ''to the extent required for the associated equipment by § 56.50–50 and § 56.50–95 of this chapter''.

§ 62.35–15 [Amended]

■ 349. Amend § 62.35–15 as follows:

■ a. In paragraph (a)(2), remove the words ''low pressure'' and add, in their place, the text ''low-pressure''; and

■ b. Reserve paragraph (b).

§ 62.35–20 [Amended]

■ 350. In § 62.35–20, remove the note immediately following paragraph (d)(1).

■ 351. Revise § 62.35–35 to read as follows:

§ 62.35–35 Starting systems for internal-combustion engines.

The starting systems for propulsion engines and for prime movers of ships' service generators required to start automatically must meet sections 4–6–5/9.5 and 4–8–2/11.11 of the ABS Marine Vessel Rules (incorporated by reference; see § 62.05–1).

§ 62.35–40 [Amended]

■ 352. Amend § 62.35–40 as follows:

■ a. In paragraph (b)(2), remove the text ''CG–521'' and add, in its place, the text ''(CG–ENG)' and

■ b. In paragraph (c):

■ i. Remove the word ''Steel'' and add, in its place, the word ''Marine''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

■ 353. Revise § 62.35–50 to read as follows:

§ 62.35–50 Tabulated monitoring and safety control requirements for specific systems.

The minimum instrumentation, alarms, and safety controls required for specific types of systems are listed in table § 62.35–50. The provisions in this section pertain to table 62.35–50.

TABLE § 62.35–50—MINIMUM SYSTEM MONITORING AND SAFETY CONTROL REQUIREMENTS FOR SPECIFIC SYSTEMS

[Note 1]

System	Service	Instrumentation	Alarm	Safety control	See also paragraph
Main (Propulsion) boiler	(1)	(1)	(1)		(a).
	Burner seating		Failure	Burner auto trip	(b).
	Trial for ignition	Status	Failure	.....do	(b).
				Manual trip	(b).
	Low fire interlock	Status.			
	Program control interlock	Status.			
Main (Propulsion steam) turbine.	(2)	(2)	(2)	Manual trip	(c), (d).
Main propulsion, diesel	(1)	(1)	(1)	Manual trip	(c), (d).
Main propulsion, remote control.			Failure	.....do.	
	Auto safety trip override.		Activated		
	Starting power	Pressure (voltage)	Low	Limit	(a).
	Location in control	Status	Override		(c).
	Shaft speed/direction/pitch	(3)	(3)	(3).	
	Clutch fluid	Pressure	Low.		
Main propulsion, electric	(4)	(4)	(4)	(4)	(f).
Main propulsion, shafting	Stern tube oil tank level		Low.		
	Line shaft bearing	Temperature	High.		
		Forced lubrication Pressure	Low.		
Main propulsion, controllable pitch propeller.	Hydraulic oil	Pressure	High, Low		
		Temperature	High		
Generators	Ship service	(5)	(5).		
		Starting pressure/voltage	Low.		
			Tripped.		
	Emergency	(6)	(6)	(6).	
	Turbogenerator	(5)	(5)	(5).	
				Manual trip.	
	Diesel	(5)	(5)	(5)	(d).
				Manual trip.	
Auxiliary boiler		Run	Trip		(k).
Gas turbine	(7)	(7)	(7)	(7)	(d).
Engines and turbines	Jacking/turning gear	Engaged			(g).
Fuel oil	(8)	(8)	(8).		
	Remote/auto fill level		High	Auto trip or overflow arrangement.	
	Hi. press. leakage level		High.		
Bilge	Pump remote control	Run.			
	Pump auto control	Run	Excessive operations.		
	Level		High/location.		
Machinery space Class 3 (power-operated) watertight doors.		Open/closed.			

TABLE § 62.35–50—MINIMUM SYSTEM MONITORING AND SAFETY CONTROL REQUIREMENTS FOR SPECIFIC SYSTEMS—Continued

[Note 1]

System	Service	Instrumentation	Alarm	Safety control	See also paragraph
Fire detection	Machinery spaces		Space on fire		(h).
Fire main		Pressure	Low.		
Personnel	Deadman		Fail to acknowledge		(i).
General, control and alarm systems.	Power supply	Available (pressure)	Failure (low).		
	System function		Failure		(j).
	Console air conditioning		Failure.		
	Built in test equipment	Active.			
	Sequential interlock	Activated.			
	Safety control		Activated	Auto trip/limit	(j).
Redundant auxiliary, system, power supply.		Status	Auto transfer.		

[1] See the ABS Marine Vessel Rules (incorporated by reference; see § 62.05–1) Part 4–9–6, tables 1A, 1B, and 5A.
[2] See ABS Marine Vessel Rules Part 4–9–6, table 2.
[3] See § 113.37 of this chapter.
[4] See ABS Marine Vessel Rules Part 4–9–6, tables 4A and 4B and subparts 111.33 and 111.35 of this chapter.
[5] See ABS Marine Vessel Rules Part 4–9–6, table 6.
[6] See subparts 112.45 and 112.50 of this chapter.
[7] See ABS Marine Vessel Rules Part 4–9–6, Tables 6 for auxiliary gas turbines and 3 for propulsion gas turbines; and 46 CFR 58.10–15(f).
[8] See ABS Marine Vessel Rules Part 4–9–6, tables 5A and 6.

(a) Safety limit controls must be provided in navigating bridge primary propulsion control systems. See § 62.35–5(c).

(b) Safety trip controls and alarms must be provided for all main boilers, regardless of mode of operation. See § 62.35–20(a).

(c) Loss of forced lubrication safety trip controls must be provided for main propulsion turbines and main propulsion diesel engines.

(d) Override of overspeed and loss of forced lubrication pressure safety trip controls must not be provided for main propulsion or generator steam or gas turbines, or diesel engines. See § 62.35–5(e)(2).

(e) Transfer interlocks must be provided for main propulsion systems capable of remote and local control.

(f) Semiconductor controlled rectifiers must have current limit controls.

(g) Interlocks must be provided to prevent the starting of engines or turbines while the jacking or turning gear, if installed, is engaged. See § 62.25–5(a).

(h) Main and remote control stations, including the navigational bridge, must provide visual and audible alarms in the event of a fire in the main machinery space.

(i) Minimally attended and periodically unattended machinery plants must be provided with a personnel alarm that annunciates on the bridge if not acknowledged by the watch engineer. See § 62.50–20(b)(1).

(j) All automatic controls and alarms must be failsafe to the least critical consequence for the particular system. See § 62.30–1.

(k) The operating or tripped status of vital auxiliary boilers must be indicated at the ECC. See part 63.

§ 62.50–1 [Amended]

■ 354. Amend § 62.50–1 as follows:

■ a. Designate the note immediately following paragraph (b)(5) as note 1 to paragraph (b)(5); and

■ b. In paragraph (c), by removing the words ''immediately replaced or repaired'' and add, in its place, the text ''replaced or repaired,''.

§ 62.50–20 [Amended]

■ 355. Amend § 62.50–20 as follows:

■ a. Designate the note preceding paragraph (a) as note 1 to § 62.50–20;

■ b. Designate the note immediately following paragraph (a)(4) as note 2 to paragraph (a)(4);

■ c. Remove the note immediately following paragraph (c);

■ d. In paragraph (e)(2), remove the words ''of this chapter'' and add, in their place, the words ''of this subchapter'';

■ e. In paragraph (e)(3), remove the words ''are required'' and add, in their place, the words ''are installed'';

■ f. In paragraph (e)(4):

■ i. Remove the words ''of this chapter'' and add, in their place, the words ''of this subchapter''; and

■ ii. Remove the text ''56.50–50(f)'' and add, in its place, the text ''56.50–50(f) of this subchapter'';

■ g. In paragraph (g)(2), remove the text ''§ 111.12–11(g) and § 111.30–1'' and add, in its place, the text ''§§ 111.12–11(g) and 111.30–1 of this subchapter''; and

■ h. In paragraph (h)(3), remove the last sentence.

■ 356. Amend § 62.50–30 as follows:

■ a. Designate the note preceding paragraph (a) as note 1 to § 62.50–30

■ b. In paragraph (a), remove the words ''of this part'';

■ c. In paragraph (c):

■ i. Remove the word ''Steel'' and add, in its place, the word ''Marine''; and

■ ii. Remove the text ''46 CFR'' and add, in its place, the symbol ''§ '';

■ d. In paragraph (d), remove the words ''and continuously'';

■ e. Revise the introductory text to paragraph (h);

■ f. In paragraph (h)(4), remove the text ''56.50–60(d)'' and add, in its place, the text ''56.50–60(d) of this subchapter'';

■ g. In paragraph (i), remove the words ''high pressure'' and add, in their place, the text ''high-pressure''; and

■ h. In paragraph (k), remove the word ''Steel'' and add, in its place, the word ''Marine''.

The revision reads as follows:

§ 62.50–30 Additional requirements for periodically unattended machinery plants.

* * * * *

(h) *Fire control station.* A control station for fire protection of the machinery spaces must be provided outside the machinery spaces. At least one access to this station must be independent of category A machinery spaces, and any boundary shared with these spaces must have an A–60 fire classification as defined in § 72.05 of this chapter. The number of control and monitoring cables and piping for the station that adjoin or penetrate the boundaries of a category A machinery space, uptakes, or casings must be minimized. The fire control station must include—

* * * * *

PART 63—AUTOMATIC AUXILIARY BOILERS

■ 357. The authority citation for part 63 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703; E.O. 12234, 45 FR 58801, 3 CFR, 1980 Comp., p. 277; Department of Homeland Security Delegation No. 0170.1.

■ 358. Amend § 63.01–3 as follows:
■ a. In paragraph (a)(1), remove the text ''Table 54.01–5(A) of this chapter'' and add, in its place, the text ''table 1 to § 54.01–5 of this chapter''; and
■ b. Revise paragraph (b).

The revision reads as follows:

§ 63.01–3 Scope and applicability.

* * * * *

(b) Automatic boilers having heat input ratings of 12,500,000 Btu/hr. (3.66 megawatts) and above must meet the requirements of part 52 of this chapter. Their control systems must meet the requirements of part 62 of this chapter.

■ 359. Revise § 63.05–1 to read as follows:

§ 63.05–1 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–ENG), Attn: Office of Design and Engineering Standards, U.S. Coast Guard Stop 7509, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7509 phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(a) *American National Standards Institute (ANSI),* 1899 L Street NW, 11th Floor, Washington, DC, 202–293–8020, *www.ansi.org.*

(1) ANSI Z21.22–2015 Relief valves for hot water systems, 2nd Edition, January 1, 2015 (''ANSI Z21.22''); IBR approved for § 63.25–3.

(2) [Reserved]

(b) *American Society of Mechanical Engineers* (*ASME*), Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME CSD–1–2018, Controls and Safety Devices for Automatically Fired Boilers, October 12, 2018 (2018) (''ASME CSD–1''); IBR approved for §§ 63.10–1, 63.15–1, 63.20–1.

(2) [Reserved]

(c) *ASTM International* (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428–2959, *www.astm.org.*

(1) ASTM F1323–2014, Standard Specification for Shipboard Incinerators, November 1, 2014 (2001) (''ASTM F1323''); IBR approved for § 63.25–9.

(2) [Reserved]

(d) *International Maritime Organization (IMO),* Publications Section, 4 Albert Embankment, London, SE1 7SR United Kingdom, *www.imo.org.*

(1) Resolution MEPC.76(40), Standard Specification for Shipboard Incinerators (Sep. 25, 1997) (''IMO MEPC.76(40)''); IBR approved for § 63.25–9.

(2) Resolution MEPC.244(66), 2014 Standard Specification for Shipboard Incinerators (Apr. 14, 2014) (''IMO MEPC.244(66)''); IBR approved for § 63.25–9.

(3) The International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), Annexes I, II, III, and V (1978) (''IMO MARPOL 73/78''); IBR approved for § 63.25–9.

(e) *International Organization for Standardization* (ISO), Case postale 56, CH–1211 Geneva 20, Switzerland, *www.iso.org.*

(1) ISO 9096:2017(E), Stationary source emissions—Manual determination of mass concentration of particulate matter, 3rd Edition, September 1, 2017 (''ISO 9096''); IBR approved for § 63.25–9.

(2) ISO 10396, Stationary source emissions—Sampling for the automated determination of gas emission concentrations for permanently-installed monitoring systems, Second edition, Feb. 1, 2007 (''ISO 10396''); IBR approved for § 63.25–9.

(3) ISO 13617:2019(E), Ships and Marine Technology-Shipboard Incinerators—Requirements, 3rd Edition. Aug. 1, 2019 (''ISO 13617''); IBR approved for § 63.25–9.

(f) *Underwriters' Laboratories, Inc.* (UL), 12 Laboratory Drive, Research Triangle Park, NC 27709–3995, *www.ul.com.*

(1) UL 174, UL Standard for Safety Household Electric Storage Tank Water Heaters, 11th Edition, April 29, 2004 (''UL 174''); IBR approved for § 63.25–3.

(2) UL 296, UL Standard for Safety Oil Burners, 11th Edition, February 24, 2017 (''UL 296''); IBR approved for § 63.15–5.

(3) UL 343, UL Standard for Safety Pumps for Oil-Burning Appliances, 9th Edition, Dec. 17, 2008 (''UL 343''); IBR approved for § 63.15–3.

(4) UL 1453, UL Standard for Safety Electric Booster and Commercial Storage Tank Water Heaters, 6th Edition, March 29, 2016 (''UL 1453''); IBR approved for § 63.25–3.

■ 360. Amend § 63.10–1 as follows:
■ a. Revise the introductory text to § 63.10–1; and
■ b. In paragraph (b)(1), remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

The revision reads as follows:

§ 63.10–1 Test procedures and certification report.

Two copies of the items listed below must be provided, if submitted in printed format, to the Commanding Officer, Marine Safety Center, U.S. Coast Guard, 2703 Martin Luther King Jr. Ave. SE, Washington, DC 20593. Alternatively, one copy may be transmitted by email to the Commanding Officer (MSC), at *msc@uscg.mil.* Information for submitting documents electronically can be found at *www.uscg.mil/HQ/MSC.*

* * * * *

§ 63.15–1 [Amended]

■ 361. Amend § 63.15–1 as follows:
■ a. In paragraph (a), remove the text ''§ 54.01–5, Table 54.01–5(A) of this chapter'' and add, in its place, the text ''table 1 to § 54.01–5 of this subchapter''; and
■ b. In paragraph (b), remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

§ 63.15–3 [Amended]

■ 362. Amend § 63.15–3 as follows:
■ a. Designate the note immediately following paragraph (b) as note 1 to paragraph (b);
■ b. In paragraph (c), remove the words ''of this chapter'' wherever they appear and add, in their place, the words ''of this subchapter'';
■ c. In paragraph (d), remove the text ''§ 56.04–2, Table 56.04–2 of this chapter'' and add, in its place, the text ''table § 56.04–2 of this subchapter''; and
■ d. In paragraph (e), remove the text ''46 CFR'' and add, in its place, the symbol ''§ ''.

§ 63.15–7 [Amended]

■ 363. In § 63.15–7(d), remove the text ''46 CFR 62.35–50, Table 62.35–50'' and add, in its place, the text ''table § 62.25–50 of this subchapter''.

§ 63.25–3 [Amended]

■ 364. Amend § 63.25–3 as follows:
■ a. In paragraph (a):
■ i. Remove the text ''ANSI/AGA'' and add, in its place, the text ''ANSI''; and
■ ii. Remove the text ''46 CFR 63.05–1'' wherever it appears and add, in its place, the text ''§ 63.05–1'';

■ b. In paragraphs (b) and (h), remove the words ''of this chapter'' wherever they appear and add, in their place, the words ''of this subchapter''; and
■ c. In paragraph (j), remove the text ''46 CFR part 52 or part 53'' and add, in its place, the text ''part 52 or part 53 of this subchapter''.

§ 63.25–7 [Amended]

■ 365. Amend § 63.25–7(a) as follows:
■ a. Remove the words ''of this chapter'' wherever they appear and add, in their place, the words ''of this subchapter''; and
■ b. Remove the text ''§ 54.01–5, Table 54.01–5(A)'' and add, in its place, the text ''table 1 to § 54.01–5''.
■ 366. Amend § 63.25–9 as follows:
■ a. Revise paragraph (a), the introductory text to paragraph (b), and paragraph (b)(3);
■ b. In paragraphs (c)(1) and (f)(6) and (7), and remove the text ''46 CFR'' wherever it appears and add, in its place, the symbol ''§ ''; and
■ c. Add paragraph (g).

The revisions and addition read as follows:

§ 63.25–9 Incinerators.

(a) *General.* (1) Incinerators installed on or after March 26, 1998, must meet the requirements of IMO MEPC.76(40) (incorporated by reference; see § 63.05–1). Incinerators in compliance with ISO 13617 (incorporated by reference; see § 63.05–1), are considered to meet IMO MEPC.76(40). Incinerators in compliance with both ASTM F1323 (incorporated by reference; see § 63.05–1) and Annexes A1–A3 of IMO MEPC.76(40) are considered to meet IMO MEPC.76(40).

(2) An application for type approval of shipboard incinerators must be sent to the Commanding Officer, Marine Safety Center, U.S. Coast Guard, 2703 Martin Luther King Jr. Ave. SE, Washington, DC 20593, or it may be transmitted by email to the Commanding Officer (MSC), at *msc@uscg.mil.*

(b) *Testing.* Before type approval is granted, the manufacturer must submit evidence that tests have been conducted by an independent third party acceptable to the Commandant (CG–ENG). Testing may be conducted at the manufacturer's facility. The independent third party must:

* * * * *

(3) Have documented proof of the qualifications to perform the inspections and tests required by this section; and

* * * * *

(g) Incinerators designed and tested to meet the requirements of IMO MEPC.244(66) (incorporated by reference; see § 63.05–1) are considered equivalent to the requirements of this section and may receive U.S. Coast Guard type approval.

PART 64—MARINE PORTABLE TANKS AND CARGO HANDLING SYSTEMS

■ 367. The authority citation for part 64 continues to read as follows:

Authority: 46 U.S.C. 3306, 3703; 49 U.S.C. App. 1804; Department of Homeland Security Delegation No. 0170.1.

■ 368. Revise § 64.2 to read as follows:

§ 64.2 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Coast Guard must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at the Coast Guard Headquarters. Contact Commandant (CG–DCO–D), Attn: Deputy for Operations Policy and Capabilities, U.S. Coast Guard Stop 7318, 2703 Martin Luther King Jr. Avenue SE, Washington, DC 20593–7318, phone (202) 372–1375, email *typeapproval@uscg.mil,* and is available from the sources listed elsewhere in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fr.inspection@nara.gov* or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(b) *American Society of Mechanical Engineers (ASME),* Two Park Avenue, New York, NY 10016–5990, 800–843–2763, *www.asme.org.*

(1) ASME Boiler and Pressure Vessel Code, Section VIII, Division 1, Pressure Vessels, 1989, with Addenda issued December 31, 1989 (''Section VIII of the ASME BPVC''); IBR approved for §§ 64.5, 64.11, 64.13, 64.21, 64.25, 64.31.

(2) [Reserved]

§ 64.5 [Amended]

■ 369. In § 64.5(d), remove the text ''the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''.

§ 64.11 [Amended]

■ 370. In § 64.11(a), remove the text ''the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''.

§ 64.13 [Amended]

■ 371. Amend § 64.13 as follows:

■ a. In paragraph (a), remove the text ''section VIII of the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''; and

■ b. In footnote 1 to paragraph (b), remove the text ''the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC''.

§ 64.21 [Amended]

■ 372. In § 64.21, remove the text ''section VIII of the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''.

§ 64.25 [Amended]

■ 373. In § 64.25(b), remove the text ''the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''.

§ 64.31 [Amended]

■ 374. In § 64.31, remove the text ''section VIII of the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''.

§ 64.63 [Amended]

■ 375. Amend § 64.63 as follows:

■ a. In paragraph (a):

■ i. Remove the text ''Table 1'' and add, in their place, the text ''table 1 to § 64.63''; and

■ ii. Remove the text ''section VIII of the ASME Code'' and add, in its place, the text ''Section VIII of the ASME BPVC (incorporated by reference; see § 64.2)''; and

■ b. Redesignate table 1 as table 1 to § 64.63z.

Dated: July 13, 2021.

J.W. Mauger,

Rear Admiral, U.S. Coast Guard, Assistant Commandant for Prevention Policy.

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